



**#61**

**Horizontal Small  
Fan/Coil Units  
200 thru 1200 CFM**

**1-800-USA-COIL**  
(1-800-872-2645)

FAX: (610) 296-9763 • [www.usacoil.com](http://www.usacoil.com)

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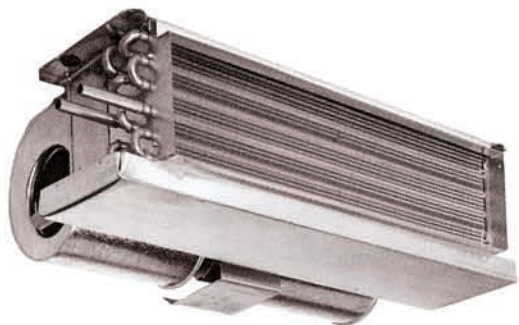
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# 1 Descriptive Information

*Unit Types*

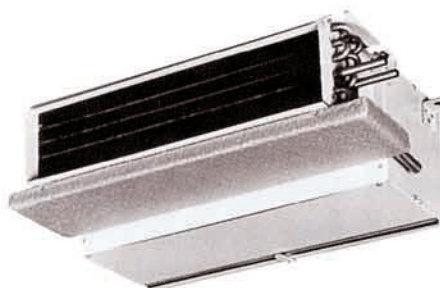
## MODEL HBS - BASIC UNIT



The model HBS Horizontal Fan Coil Unit is designed specifically to meet the many varied requirements demanded of the concealed type installation. The versatility of application and the low silhouette styling makes this unit ideally suited to drop-ceiling or over-closet applications. The design of the unit provides a positive pitch to drain when the unit is installed level, assuring rapid and positive condensate removal. HBS is provided standard with a galvanized finish.

## MODEL HRS - RETURN PLENUM UNIT

The Model HRS Horizontal Fan Coil Units are easily adaptable for mounting above ceilings in closets, hallways, or bathroom areas by providing a return-air plenum enclosing the fan section of the basic HRS unit. This arrangement allows the unit to be adapted to installations requiring return-air duct work or to be used simply as a return-air plenum with a unit-mounted filter and filter-rack assembly. All model HRS units are shipped from the factory complete, ready for installation with the plenum section in place. HRS is provided standard with a galvanized finish.



## MODEL HDS - DELUXE UNIT



This slim, attractively styled cabinet unit is ideally suited for under-ceiling mounting in hotels, motels, hospitals, nursing homes, offices or other commercial establishments. No valuable floor space is required, and the straight-line styling blends with modern decor of all types. The HDS series is applicable in the conversion of older buildings, thereby reducing the requirement for duct work and avoiding the need for modification of walls or ceilings. The unit is finished in an attractive oven-baked paint.

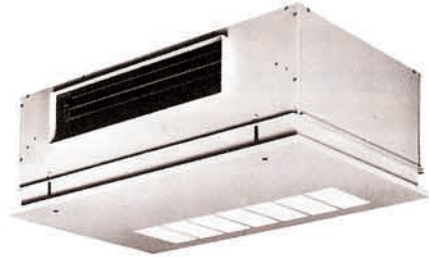
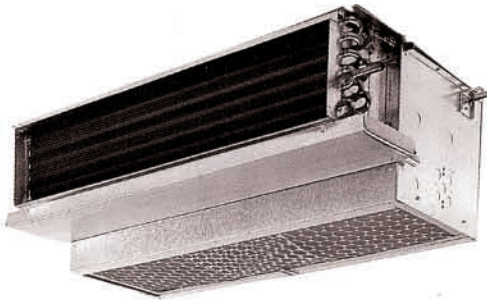
## HOW TO SELECT USA UNITS

It's easy to select USA Fan/Coil Units. The basic internal parts to include fan assemblies, coils, etc., are all the same for every size unit. We just change the cabinet around the unit, so that you choose the type that meets your requirements. You'll find that USA has the easiest selection procedure in the industry.

EXAMPLE: Model #HBS04, HRS04, and HDS04 all have the same fan assembly, coil, filter, etc. Only the cabinet around the unit changes.

**MODEL HFS - CEILING TELESCOPING HIDEAWAY - (CEILING FLUSH)**

The Model HFS unit is a fully recessed horizontal unit for over-ceiling applications. The telescoping frame and hinged panel adapts to any ceiling type and assures exact alignment of panel to ceiling. The hinged bottom panel provides ready access to all internal components. The panel is finished in attractive oven-bakes paint.

**MODEL HSRS - HIGH STATIC HIDEAWAY WITH PLENUM - 400 CFM THRU 1000 CFM**

The model HSRS Horizontal Fan Coil Units are easily adapted to installations requiring return-air plenum with a mounted filter and filter-rack assembly.

All Model HSRS units are shipped from the factory completely ready for installation with the plenum section in place. No field fabrication is required. The plenum section is fabricated of galvanized steel and is completely lined with glass fiber insulation to provide acoustical dampening of air noise. The HSRS is provided standard with a galvanized finish.

**MODEL HSBS - HIGH STATIC HIDEAWAY (BASIC) - 400 CFM THRU 1000 CFM**

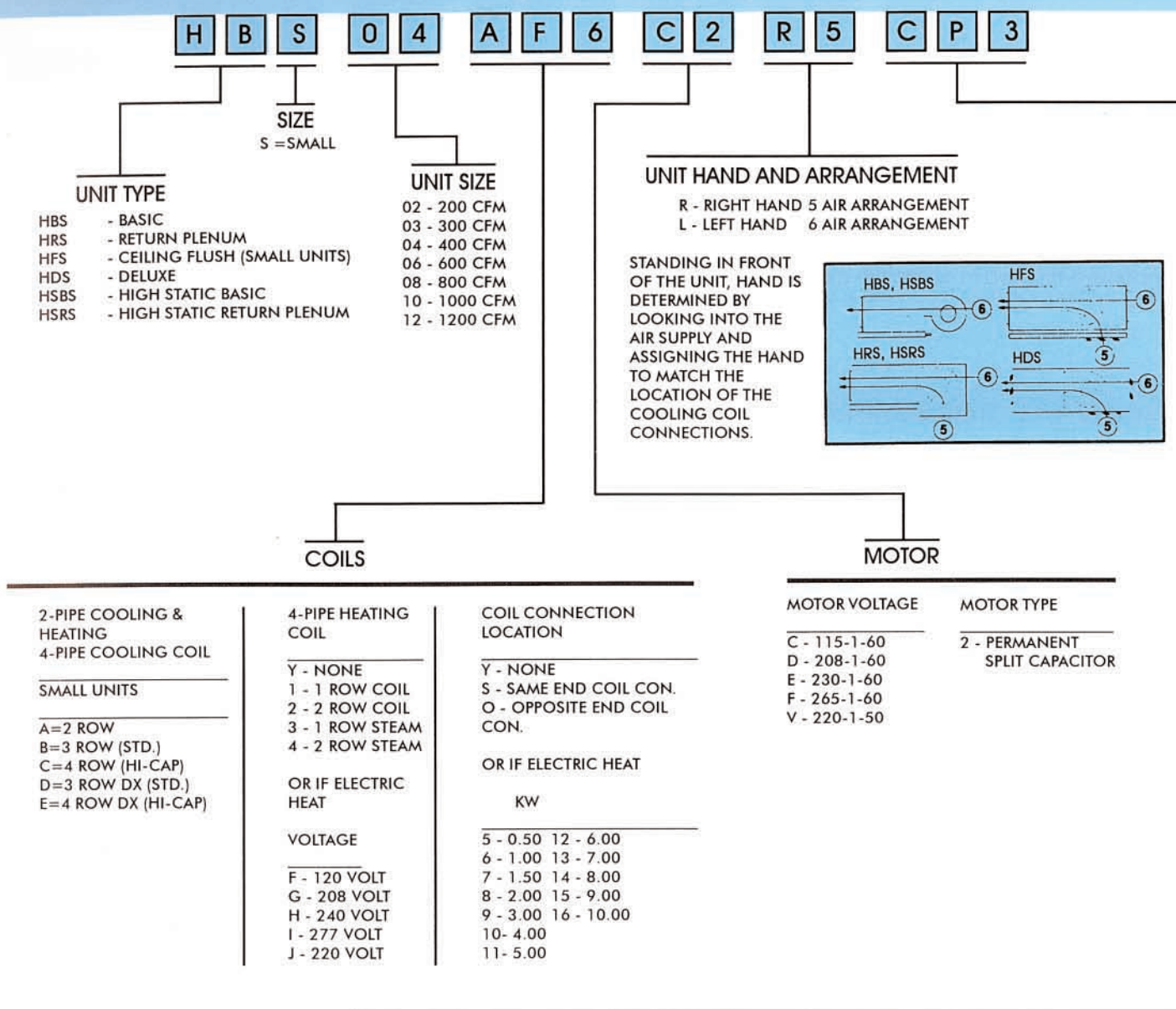
The Model HSBS Horizontal Fan Coil Unit is designed to meet the demand for a concealed ceiling unit for application with limited distribution ducts. The HSBS unit maintains the approximate depth of the Model HBS unit at the coil and drain pan section, but is furnished with larger diameter wheels to achieve the static pressure required while maintaining a low sound level. HSBS units are provided standard with a galvanized finish.





# 1 Descriptive Information

Model Number Codes



## UNIT CONTROL PACKAGE (See page 34)

### CONTROL VOLTAGE

C - 120 VOLT  
D - 208 VOLT  
E - 240 VOLT  
F - 277 VOLT  
V - 220 VOLT

### SYSTEM TYPE

#### FAN CYCLE CONTROL

A - MANUAL FAN OPERATION  
B - 2 PIPE HEAT ONLY  
C - 2 PIPE COOL ONLY  
D - 2 PIPE HEAT & COOL - (MANUAL c/o)  
E - 2 PIPE HEAT & COOL - (AUTO. c/o)  
F - 2 PIPE HEAT & COOL - (AUTO. c/o) ALTERNATE

#### VALVE CYCLE CONTROL

G - 2 PIPE HEAT ONLY  
H - 2 PIPE COOL ONLY  
J - 2 PIPE HEAT & COOL - (MANUAL c/o)  
K - 2 PIPE HEAT & COOL - (AUTO. c/o)  
L - 2 PIPE HEAT & COOL W/AUX. ELEC. HEAT (MANUAL c/o)  
M - 2 PIPE HEAT & COOL W/AUX. ELEC. HEAT (AUTO. c/o)  
N - 2 PIPE HEAT & COOL W/TOTAL ELEC. HEAT (MANUAL c/o)  
P - 2 PIPE HEAT & COOL W/TOTAL ELEC. HEAT (AUTO. c/o)  
Q - 4 PIPE HEAT & COOL - (MANUAL c/o)  
R - 4 PIPE HEAT & COOL - (AUTO. c/o)

### THERMOSTAT

2 - STANDARD ALL MOUNT  
3 - C-3 WALL MOUNT  
4 - WALL SERIES 4039  
5 - WALL SERIES 154



**PERFORMANCE DATA**

**CAPACITIES** - Unit capacities are certified in compliance with Air Conditioning and Refrigeration Institute Standard 440-84.

**SAFETY** - Units listed with Underwriters Laboratory (UL) Standard 883 and Canadian Standards Association (CSA).

**BASIC UNIT**

The basic unit is fabricated of galvanized steel. Provision for hanging the unit is provided by slots in the top wrap of the basic housing. The standard arrangement is furnished with a one inch discharge duct collar.

The condensate drain pan is fabricated of galvanized steel with closed cell, fire retardant, foam insulation coating. Water never touches the metal pan; thus, the possibility of corrosion is minimized and long, trouble-free life is assured. Removable pan extensions are available at the coil header end of the unit to provide positive control

of condensate from valves and controls. This extension, being easily removable, provides ready access to valves and piping after unit installation.

The motor blower assembly is designed for easy removal from the basic unit to provide for ease of servicing these components. Removal of this assembly also provides access to the entering air face of the coil, which is the face that will accumulate any dirt passing through the filter. Thus, cleaning of this face of the coil is a relatively simple matter.

**CABINET**

The decorative cabinet of the Model HDS Unit and the finished access panel of the Model HFS Unit are heavy gauge steel, bonderized, and finished with an oven-baked paint. Several color selections are available as an optional specification. (See Color Chart)

All cabinet panels are lined with 1/2 inch glass fiber acoustic and thermal insulation. The enclosure of the model HFS and the plenum of the Models HRS and HSRS are simi-

larly lined.

The bottom panel of the Model HDS Unit is removable and provides complete access to the basic unit. The bottom access panel is complete with stamped grilles and filter rack. Stamped discharge grilles are standard with double deflection grilles furnished when specified as an optional item.

**COILS**

Coils have 1/2 inch O.D. copper tubes with aluminum fins mechanically bonded to the tubes. All coils are leak tested under water and are suitable for design working pressures of 250 psig @ 200 degree F.

A variety of coil selections are available. The standard coil provides adequate capacity for most installations with

an eight to ten degree design water temperature rise. A high capacity coil is offered for those installations requiring the higher latent heat capabilities or those designed for a twelve degree water temperature rise. Also offered is a four-pipe coil consisting of standard or high capacity cooling with one and two rows of heating surface.

**FILTERS**

Standard filters are one inch throwaway glass fiber. Optional cleanable filters are available.

**FANS**

The fans are centrifugal, forward-curved, double-width wheels. Blower housings are galvanized steel with special rolled perimeter seams to provide added rigidity.

**MOTORS**

All motors are resilient-mounted, three speed, with UNDERWRITERS listed thermal overload protection. Motor bearings are of the sleeve type or ball bearing type with oversized oil reservoirs provided to assure positive lubri-

cation with minimum servicing required. Positive speed reduction is assured through careful matching of motor torque to blower loading. Standard motors are permanent split capacitor.



# 2 Performance Information

Condensed  
Performance Tables

## ARI CERTIFICATION

The Horizontal Series Units are certified in compliance with the Air Conditioning and Refrigeration Institute (ARI). Industry Standard 440-89 for room fan coil units. Approved standard ratings are tabulated below.



## UL APPROVAL

All horizontal units in USA COIL & AIR's Product Line are listed by UNDERWRITERS' LABORATORIES, INC. This listing signifies that USA COIL & AIR's fan coil units have been examined by UL and found to be in complete compliance with applicable standards. The re-examination service also includes periodic visits by UL inspectors at USA COIL & AIR's factory to assure continuing compliance by all listed products.

## COIL SIZE - HBS, HRS, HDS, HFS, HSBS, HSRS

UNIT SIZE	HEIGHT x LENGTH
2	7.5 x 16
3	7.5 x 20
4	7.5 x 26
6	8.75 x 31
8	8.75 x 38
10	8.75 x 52
12	8.75 x 60

TABLE #1 - CONDENSED PERFORMANCE

### ARI APPROVED STANDARD RATINGS<sup>1</sup>

UNIT TYPE	UNIT SIZE / COIL ROWS	NOMINAL CFM	GPM	COOLING CAPACITY		POWER INPUT WATTS
				TOTAL BTUH	SENSIBLE BTUH	PSC
HBS HRS HDS HFS	02/3 ROW	200	1.2	6,000	4,000	50
	03/3 ROW	300	1.8	9,000	6,300	55
	04/3 ROW	400	2.5	12,100	8,800	165
	06/3 ROW	600	3.5	17,300	13,000	225
	08/3 ROW	800	4.6	22,600	16,900	235
	10/3 ROW	1000	5.5	27,500	21,000	305
	12/3 ROW	1200	6.6	32,800	25,000	435
HBS HRS HDS HFS	02/4 ROW	200	1.4	6,900	5,000	50
	03/4 ROW	300	2.1	9,800	6,500	55
	04/4 ROW	400	2.8	13,800	9,800	145
	06/4 ROW	600	4.0	19,600	14,300	220
	08/4 ROW	800	5.1	25,500	18,800	235
	10/4 ROW	1000	6.2	31,000	23,000	300
	12/4 ROW	1200	7.5	37,200	27,700	425
HSBS HSRS	04/4 ROW	400	3.2	16,000	11,600	170
	06/4 ROW	600	4.4	21,800	16,000	205
	08/4 ROW	800	5.3	26,500	19,600	225
	10/4 ROW	1000	7.5	37,200	27,600	355

- Based on 80 degrees and 67 degrees WB EAT, 45 degrees F EWT, 10 degrees F temperature rise, high fan speed. Motor voltage 115/1/60. Air flow under dry coil conditions. Ducted models tested @ 0.05 ext. static pressure.
- For all application ratings use the USA Coil & Air computer selection program, the quick-selection ratings in this catalog or contact your local USA Coil & Air representative.



# 2 Performance Information

CFM vs.  
External Static Pressure

TABLE #3

UNIT			CFM@ 0.0 E.S.P. FOR FAN SPEED INDICATED			HIGH-SPEED CFM @ E.S.P. INDICATED					
MODEL	SIZE	COIL	HIGH	MED	LOW	0.05	0.10	0.15	0.20	0.25	0.30
HBS BASIC	02	3 ROW	220	195	175	205	185	160	-	-	-
	03		330	295	250	300	265	225	170	-	-
	04		510	360	220	480	450	415	370	290	-
	06		760	540	330	720	670	620	560	475	-
	08		870	590	335	840	800	760	700	620	-
	10		1100	665	490	1060	1010	930	845	730	-
	12		1425	950	705	1370	1310	1240	1160	1055	-
	02	4 ROW	215	190	165	200	175	140	-	-	-
	03		320	285	240	290	250	205	150	-	-
	04		500	305	215	470	440	400	340	240	-
	06		745	530	295	700	650	590	525	430	-
	08		860	585	330	825	780	730	665	575	-
	10		1085	655	480	1040	970	895	800	670	-
	12		1400	930	690	1345	1280	1205	1115	990	-
HRS HFS HDS RETURN PLENUM FLUSH DELUXE	02	3 ROW	190	175	150	180	170	145	-	-	-
	03		300	270	215	275	250	215	165	-	-
	04		470	275	205	445	415	380	320	250	-
	06		690	450	280	655	615	560	500	410	-
	08		835	565	335	800	760	710	650	570	-
	10		1045	630	485	995	940	880	805	710	-
	12		1300	900	540	1240	1180	1110	1025	920	840
	02	4 ROW	185	170	145	180	160	125	-	-	-
	03		290	260	205	270	240	195	-	-	-
	04		460	270	200	435	400	355	300	210	-
	06		675	440	220	635	595	535	465	355	-
	08		815	550	325	780	740	685	615	515	-
	10		1020	615	475	970	915	850	765	645	-
	12		1275	880	530	1215	1150	1075	980	850	815
HSBS HIGH STATIC BASIC	04	3 ROW	665	600	515	630	595	550	500	430	350
	06		830	705	545	780	725	670	610	550	480
	08		930	715	630	870	810	750	685	615	540
	10		1445	1350	1210	1360	1275	1185	1095	1000	880
	04	4 ROW	650	585	505	620	575	530	465	395	300
	06		800	680	525	750	700	640	585	520	440
	08		905	705	615	840	780	720	655	580	495
	10		1410	1315	1180	1320	1230	1140	1050	945	810
HSRS HIGH STATIC RETURN PLENUM	04	3 ROW	570	535	485	540	505	465	420	360	285
	06		720	640	540	680	635	585	530	460	385
	08		800	660	545	750	695	640	580	515	440
	10		1295	1195	1060	1215	1130	1045	960	865	700
	04	4 ROW	555	525	420	520	485	445	390	330	-
	06		700	625	525	660	610	560	500	430	340
	08		780	645	535	725	670	615	555	485	395
	10		1260	1165	1035	1175	1090	1005	915	810	700



**TABLE #6 - DX PERFORMANCE**
**BASE CAPACITIES - MBH**

UNIT SIZE	SAT SUCTION TEMP.	3 ROW - STANDARD								4 ROW - HI CAPACITY							
		ENTERING AIR (F) - DB/WB								ENTERING AIR (F) - DB/WB							
		76/63		78/65		80/67		82/69		76/63		78/65		80/67		82/69	
		TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH
02	35	7.3	5.4	8.1	5.7	9.0	5.9	9.9	6.1	9.0	6.4	10.0	6.7	11.0	7.0	12.1	7.3
	40	5.7	4.7	6.6	4.9	7.4	5.2	8.3	5.4	7.3	5.6	8.3	5.9	9.3	6.2	10.3	6.5
	45	4.3	4.0	4.9	4.2	5.7	4.5	6.6	4.7	5.6	4.8	6.4	5.1	7.4	5.4	8.5	5.7
	50	3.1	3.1	3.6	3.5	4.1	3.8	4.5	4.0	4.1	4.0	4.7	4.3	5.5	4.6	6.4	4.9
03	35	10.5	7.8	11.6	8.1	12.8	8.4	14.0	8.7	12.7	9.1	14.0	9.5	15.3	9.8	16.6	10.2
	40	8.4	6.8	9.5	7.1	10.7	7.5	11.9	7.8	10.5	8.1	11.8	8.5	13.1	8.8	14.5	9.2
	45	6.3	5.8	7.3	6.2	8.5	6.5	9.7	6.8	8.1	7.0	9.3	7.4	10.7	7.8	12.1	8.1
	50	4.7	4.7	5.4	5.2	6.2	5.6	7.2	5.9	6.0	6.0	6.9	6.3	8.1	6.7	9.4	7.1
04	35	14.1	10.4	15.5	10.8	16.9	11.1	18.4	11.5	16.4	11.9	17.9	12.3	19.4	12.7	21.0	13.0
	40	11.6	9.2	13.0	9.6	14.5	10.0	16.0	10.4	13.8	10.7	15.4	11.1	17.0	11.5	18.6	11.9
	45	8.9	8.0	10.2	8.4	11.7	8.9	13.2	9.3	10.9	9.4	12.5	9.8	14.2	10.3	15.8	10.8
	50	6.6	6.6	7.6	7.2	8.8	7.7	10.2	8.1	8.2	8.0	9.4	8.5	11.0	9.0	12.7	9.5
06	35	19.0	14.5	21.0	15.0	23.1	15.6	25.3	16.1	23.3	17.1	25.6	17.7	27.9	18.3	30.3	18.9
	40	15.2	12.7	17.3	13.3	19.4	13.9	21.6	14.5	19.3	15.2	21.6	15.9	24.0	16.6	26.5	17.2
	45	11.6	11.0	13.3	11.6	15.2	12.2	17.4	12.8	15.0	13.3	17.1	14.0	19.6	14.7	22.1	15.3
	50	8.7	8.7	9.9	9.8	11.2	10.5	13.0	11.1	10.9	10.9	12.8	12.0	14.8	12.7	17.1	13.4
08	35	24.6	18.8	27.0	19.4	29.4	20.0	31.9	20.6	29.1	21.8	31.7	22.5	34.3	23.1	37.0	23.6
	40	20.1	16.8	22.6	17.5	25.2	18.2	27.8	18.9	24.6	19.7	27.4	20.5	30.1	21.2	33.0	21.8
	45	15.6	14.7	17.8	15.4	20.3	16.2	23.0	16.9	19.6	17.4	22.2	18.3	25.1	19.1	28.1	19.8
	50	11.9	11.9	13.4	13.2	15.3	14.0	17.6	14.8	14.6	14.6	17.0	15.9	19.5	16.8	22.4	17.6
10	35	29.9	23.3	32.7	24.0	35.6	24.7	38.5	25.3	35.2	26.9	38.3	27.6	41.3	28.2	44.4	28.8
	40	24.7	21.0	27.7	21.8	30.7	22.6	33.8	23.3	30.0	24.5	33.3	25.4	36.6	26.2	39.9	26.9
	45	19.3	18.4	22.0	19.3	24.9	20.2	28.1	21.0	24.1	21.8	27.3	22.8	30.7	23.7	34.3	24.6
	50	14.8	14.8	16.7	16.6	19.0	17.6	21.8	18.6	18.2	18.2	21.1	19.9	24.1	21.0	27.5	22.0
12	35	40.3	30.0	44.4	31.1	48.7	32.2	53.1	33.3	48.2	35.0	52.7	36.2	57.4	37.4	62.2	38.5
	40	32.7	26.4	36.9	27.7	41.2	28.9	45.7	30.0	40.2	31.2	44.9	32.6	49.8	33.9	54.7	35.1
	45	24.9	22.9	28.6	24.1	32.9	25.4	37.4	26.6	31.5	27.2	36.1	28.7	41.0	30.1	46.1	31.4
	50	18.6	18.6	21.2	20.6	24.4	21.9	28.4	23.1	23.5	23.1	26.9	24.7	31.3	26.1	36.3	27.5

NOTE: For refrigerants other than R-22 consult factory. Ratings at nominal CFM. All DX units to operate at high speed only.

DX Total Capacity (MBH) =  
Base TH x Total Correction Factor

DX Sensible Capacity (MBH) =  
Base SH x Sensible Correction Factor

% of Nominal CFM =  
Actual CFM (from Air Delivery tables) ÷  
Nominal CFM  
(Actual CFM found on page 10)  
Nominal CFM found on page 10

**DX - CFM CORRECTION FACTORS**

% OF NOMINAL CFM	CORRECTION FACTOR	
	TOTAL BTU	SENSIBLE BTU
80	0.95	0.93
90	0.97	0.96
100	1.00	1.00
110	1.02	1.04
120	1.05	1.08

Consult factory for values outside of table.



# 2 Performance Information

Base Capacities  
Hot Water

TABLE #7 - HOT WATER CAPACITIES

## BASE HOT WATER CAPACITIES - MBH - ALL UNITS

ROWS	UNIT SIZE	GPM											
		0.5	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0
1 2 OR 4 PIPE	02	7.6	8.8	9.2	9.4	9.6	9.8	-	-	-	-	-	-
	03	9.3	11.2	12.0	12.5	12.8	13.0	-	-	-	-	-	-
	04	12.0	14.0	15.3	16.2	16.8	17.1	-	-	-	-	-	-
	06	13.5	18.0	20.4	21.8	24.0	24.4	-	-	-	-	-	-
	08	-	21.3	24.8	26.5	28.8	30.0	-	-	-	-	-	-
	10	-	24.0	30.5	33.5	36.2	37.5	-	-	-	-	-	-
	12	-	26.5	35.8	38.8	42.3	44.0	-	-	-	-	-	-
2 2 OR 4-PIPE	02	12.1	14.1	15.0	15.7	16.4	16.8	-	-	-	-	-	-
	03	16.6	19.4	20.6	21.8	23.0	23.5	-	-	-	-	-	-
	04	18.5	23.4	25.5	26.7	28.6	29.4	-	-	-	-	-	-
	06	-	29.0	33.0	34.8	37.2	38.8	39.8	40.5	41.1	42.0	-	-
	08	-	32.8	37.7	40.8	45.0	46.9	47.5	49.7	50.6	51.4	-	-
	10	-	40.5	47.5	51.4	56.5	59.5	61.5	63.5	65.0	66.0	-	-
	12	-	49.0	55.5	59.5	64.7	68.0	70.7	72.7	74.0	75.3	-	-
3 2-PIPE ONLY	02	15.0	17.4	18.6	19.4	20.3	20.8	-	-	-	-	-	-
	03	20.0	24.0	25.5	26.9	28.5	29.6	-	-	-	-	-	-
	04	22.5	29.0	31.6	33.0	35.2	36.4	-	-	-	-	-	-
	06	-	-	40.5	43.0	46.0	47.8	49.0	50.0	50.6	51.1	-	-
	08	-	-	47.0	51.2	55.5	58.0	60.0	61.5	62.6	63.5	-	-
	10	-	-	-	63.5	69.5	73.5	76.0	78.4	80.0	81.5	82.8	84.5
	12	-	-	-	70.0	79.4	84.2	87.5	90.0	92.0	93.4	96.0	-
4 2-PIPE ONLY	02	17.2	20.0	21.2	21.8	22.5	23.0	-	-	-	-	-	-
	03	21.5	27.0	29.1	30.0	31.8	32.6	-	-	-	-	-	-
	04	25.0	33.0	35.6	37.0	38.5	39.6	-	-	-	-	-	-
	06	-	-	46.0	50.0	53.5	55.0	56.0	57.0	57.8	58.7	-	-
	08	-	-	51.3	55.0	60.0	63.0	65.0	66.4	67.4	68.3	-	-
	10	-	-	-	70.5	77.7	81.5	84.1	86.3	88.0	89.5	91.3	92.5
	12	-	-	-	82.5	92.5	97.5	101.1	104.0	106.5	108.5	110.5	112.0

NOTE: Ratings based on nominal CFM, 70 degrees EDB, 180 degrees F EWT. You must correct for CFM if required.

## HOT WATER TEMPERATURE CORRECTION FACTORS

ENT. AIR	EWT										
	100°	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°
50°	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273	1.364
55°	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227	1.318
60°	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182	1.273
65°	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136	1.227
70°	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091	1.182
75°	0.227	0.318	0.409	0.500	0.591	0.682	0.773	0.864	0.955	1.045	1.136
80°	0.182	0.272	0.363	0.455	0.545	0.636	0.727	0.818	0.909	1.000	1.091

Hot Water Heating Capacity (MBH) = Base Capacity X Temperature Correction Factor.



## APPLICATION

Electric heaters are available for installation on USA Coil & Air fan coil units for the following applications.

### TOTAL ELECTRIC HEAT

Complete heating during heating season: No boiler is required. Heating and/or cooling may be available on an individual basis the year round with only a two-pipe system. Chilled water is used for cooling, and the electric heater is used for heating. Individual room controls can be supplied to give manual or automatic changeover.

### AUXILIARY ELECTRIC HEAT

Heating between seasons or during cooling season when chilled water is being circulated. Individual room controls can be supplied to provide electric heat only when chilled water is being circulated. During regular heating season, heating is provided by hot water being circulated in the system.

## CONSTRUCTION

The heater consists of coils of high grade resistance wire which are insulated by incorporating ceramic insulators in plated steel brackets.

High limit thermal cutouts to protect the heater in the event of air failure are provided as standard equipment.

There are many special applications and control sequences for electric heat. Consult factory for special applications.

Electric Heating Capacities (BTUH) = Heater KW x 3415

Electric Heater Amperage =  $\frac{\text{Heater KW} \times 1000}{\text{Applied Voltage}}$

TABLE #8

## ELECTRIC HEATER SELECTION GUIDE

VOLTAGE	KW	UNIT SIZE						
		02	03	04	06	08	10	12
120 V	0.5	*	*					
	1.0	*	*	*				
	1.5	*	*					
	2.0	*	*	*	*	*	*	*
	3.0		*	*	*	*		
208 V	0.5	*	*					
	1.0	*	*	*				
	1.5	*	*					
	2.0	*	*	*	*	*	*	*
	3.0		*	*	*	*		
	4.0				*	*	*	*
	5.0				*	*		
	6.0				*	*	*	*
240 V 277 V	0.5	*	*					
	1.0	*	*	*				
	1.5	*	*					
	2.0	*	*	*	*	*	*	*
	3.0		*	*	*	*		
	4.0				*	*	*	*
	5.0				*	*		
	6.0				*	*	*	*
	8.0						*	*
	10.0							*

NOTE: All heaters are single stage and single phase.

TABLE #9

## STEAM HEATING

### BASE STEAM CAPACITIES - BTUH

UNIT SIZE	1 ROW COIL	2 ROW COIL
02	12270	19920
03	16890	28580
04	21940	37530
06	31610	54995(2)
08	40415	71250(2)
10	52685(2)	91655(2)
12	62355(2)	109120(2)

1. Rating based on nom. CFM, 70 degrees EDB, 2 psig steam.
2. All capacities above 50,000 BTUH rating are beyond the capacity of the standard valve. Consult factory for these applications.

### STEAM PRESSURE CORRECTION FACTORS

EAT °F	STEAM PRESSURE (PSIG)		
	2	5	10
40	1.202	1.265	1.353
50	1.134	1.196	1.279
60	1.067	1.125	1.208
70	1.000	1.054	1.128

Steam Heating Capacity (BTUH) =  
Base Capacity x Pressure Correction Factor.  
You must correct for CFM if required.



# 2 Performance Information

Motor Information

TABLE #10

## THERMAL OVERLOAD PROTECTION AND UL LISTING

All split capacitor motors furnished by USA Coil & Air contain an internal thermal overload protector which is calibrated to tripout when the winding reaches a predetermined temperature. This protector will automatically reset when the temperature returns to a safe limit.

Underwriters Laboratories, Inc. approves the motor and thermal overload combination at locked rotor conditions only. These combinations are "yellow card listed," and evidence Of such protection is stamped directly on the motor.

## EFFICIENCY AND POWER FACTOR

The efficiency and power factor of a permanent split capacitor motor are higher than that of a shaded pole motor. Permanent split capacitor motors have an efficiency in the range of 35% to 55% as compared to 20% to 35% for shaded pole motors. The power factor of a shaded pole motor may be in the range of 0.50 to 0.65 while the power factor of a permanent split capacitor motor approaches 0.89 - 1.00.

When current input is critical, the motor selection should be made on the basis of efficiency. This is one reason for the increasing use of permanent split capacitor motors in fan coil units. In many installations the total power factor must be maintained above a set minimum value. If other components of the system have a high power factor, then it may not be objectionable to use a low power factor motor.

## MODELS HSBS, HSRS

VOLTAGE	DATA	UNIT SIZE			
		04	06	08	10*
115 V 60 HZ 1 PHASE	NOM'L HP	1/8	1/8	1/8	(2) 1/8
	H	AMPS	1.70	1.70	1.80
		WATTS	170	205	225
	M	AMPS	1.65	1.65	1.70
		WATTS	160	175	195
	L	AMPS	1.45	1.45	1.45
		WATTS	135	140	165
					290
208 V 60 HZ 1 PHASE	NOM'L HP	1/8	1/8	1/8	(2) 1/8
	H	AMPS	0.66	0.73	0.74
		WATTS	135	150	160
	M	AMPS	0.60	0.66	0.67
		WATTS	120	130	135
	L	AMPS	0.54	0.57	0.57
		WATTS	105	110	110
					205
230 V 60 HZ 1 PHASE	NOM'L HP	1/8	1/8	1/8	(2) 1/8
	H	AMPS	0.67	0.73	0.75
		WATTS	150	160	170
	M	AMPS	0.58	0.66	0.67
		WATTS	128	145	135
	L	AMPS	0.55	0.60	0.57
		WATTS	115	127	127
					205
265 HZ 60 HZ 1 PHASE	NOM'L HP	1/8	1/8	1/8	(2) 1/8
	H	AMPS	0.54	0.57	0.63
		WATTS	145	155	170
	M	AMPS	0.45	0.48	0.54
		WATTS	125	130	145
	L	AMPS	0.36	0.36	0.39
		WATTS	90	90	100
					195
220 V 50 HZ 1 PHASE	NOM'L HP	1/8	1/8	1/8	(2) 1/8
	H	AMPS	1.00	1.00	1.00
		WATTS	215	220	220
	M	AMPS	0.65	0.65	0.65
		WATTS	150	159	150
	L	AMPS	0.50	0.50	0.50
		WATTS	95	95	100
					200

\*NOTE: Total Unit Motor Amps & Watts Shown For 2 Motor Unit (Size 10). Motor Nameplate Amps May Vary.



TABLE #10

## MODELS HBS, HRS, HDS, HFS

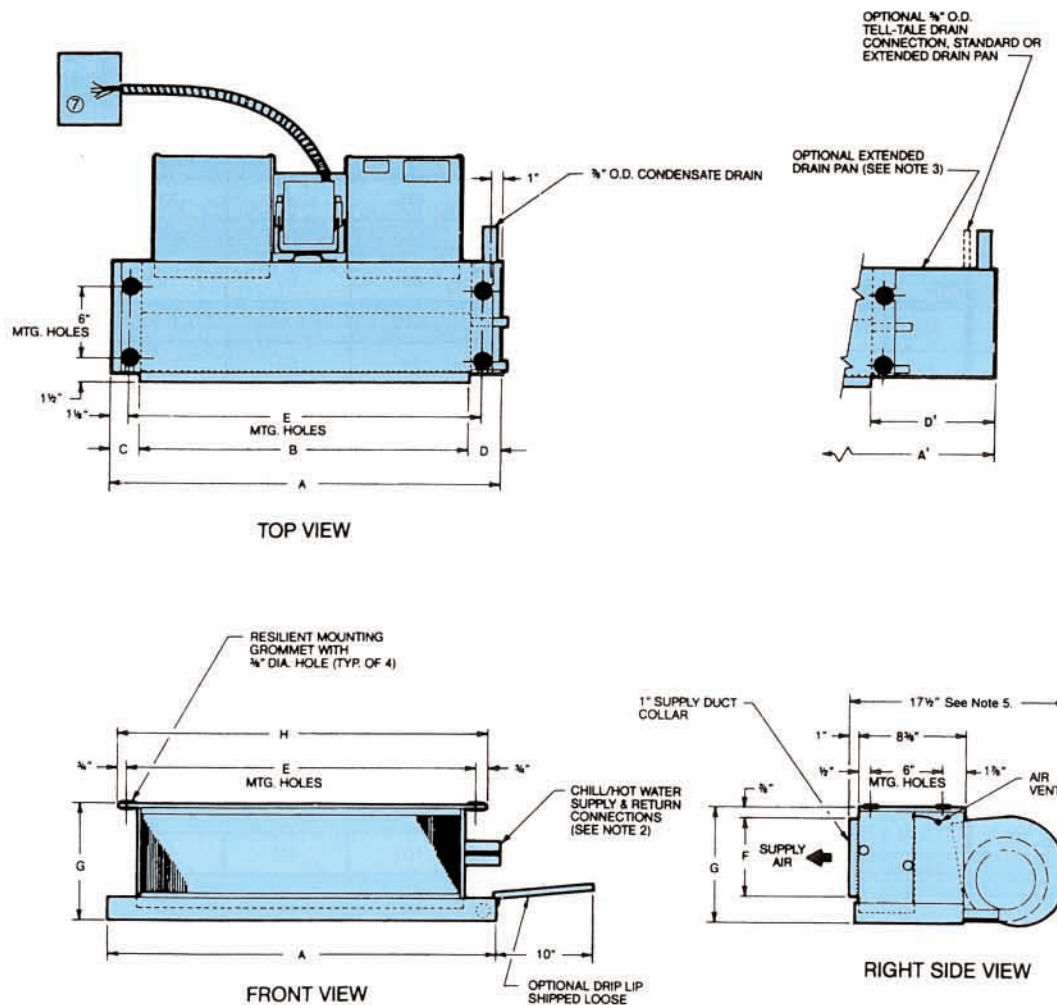
VOLTAGE	DATA		UNIT SIZE						
			02	03	04	06	08	10*	12*
115V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/12	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.53	0.53	1.25	1.40	2.10	2.20	4.00
		WATTS	50	55	165	165	235	305	435
	M	AMPS	0.31	0.31	0.70	0.72	1.90	1.40	2.80
		WATTS	35	35	80	80	190	150	305
	L	AMPS	0.27	0.27	0.45	0.45	1.45	0.90	1.20
		WATTS	28	30	50	50	145	100	130
208V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/12	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.45	0.46	0.60	0.63	1.00	1.20	2.00
		WATTS	86	89	115	130	195	230	375
	M	AMPS	0.29	0.29	0.43	0.47	0.69	0.82	1.40
		WATTS	60	60	89	100	135	165	300
	L	AMPS	0.15	0.15	0.22	0.24	0.47	0.46	0.90
		WATTS	28	28	45	48	90	95	170
230V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/12	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.40	0.40	0.60	0.69	1.00	1.20	2.00
		WATTS	103	106	135	155	210	245	390
	M	AMPS	0.31	0.32	0.45	0.52	0.70	0.90	1.50
		WATTS	70	73	105	115	150	200	300
	L	AMPS	0.15	0.15	0.24	0.28	0.50	0.50	1.10
		WATTS	33	33	53	60	105	120	210
265V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/15	1/15	1/8	(2) 1/12	(2) 1/8
	H	AMPS	0.40	0.40	0.55	1.00	1.00	1.10	1.80
		WATTS	90	95	145	220	225	250	440
	M	AMPS	0.23	0.24	0.25	0.71	0.71	0.41	0.92
		WATTS	64	66	70	125	130	120	250
	L	AMPS	0.10	0.10	0.15	0.35	0.35	0.25	0.66
		WATTS	30	30	45	90	90	75	175
220V 50HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/12	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.37	0.39	0.51	0.57	1.10	1.12	2.00
		WATTS	85	90	120	120	170	210	340
	M	AMPS	0.27	0.28	0.44	0.44	0.60	0.80	1.20
		WATTS	65	60	90	92	120	160	230
	L	AMPS	0.15	0.15	0.25	0.25	0.47	0.50	0.92
		WATTS	30	35	50	51	85	100	185

\*NOTE: Total Unit Motor Amps & Watts Shown For 2 Motor Units (10 & 12).  
Motor Nameplate Amps May Vary

# 3 Dimensions

Basic Unit

## HBS BASIC UNIT - 200 CFM THRU 1200 CFM

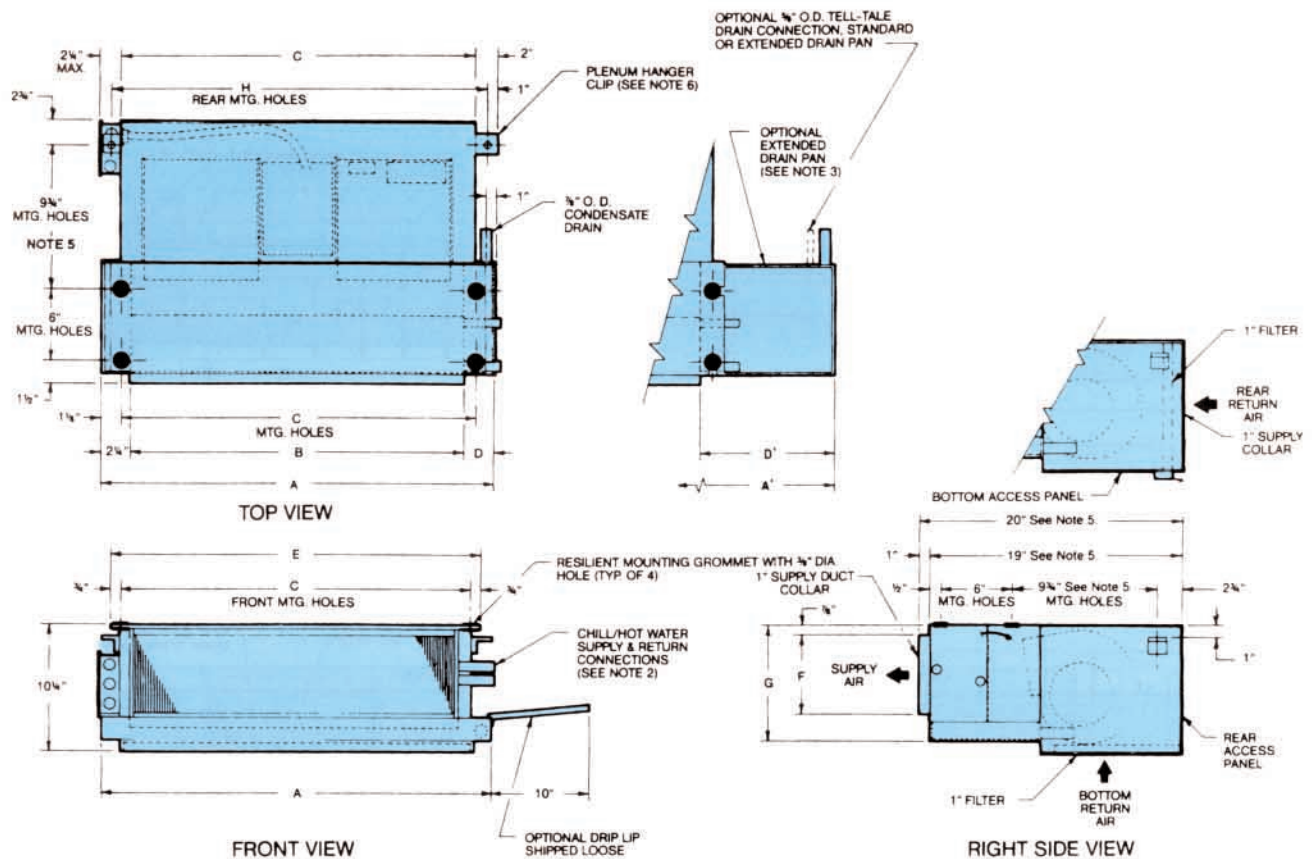


MODEL	DIMENSIONS--INCHES									
	A	A <sup>6</sup>	B	C	D	D <sup>6</sup>	E	F	G	H
HBS02	21 1/4	31 1/4	16	2 1/4	3	13	18 1/4	6 1/4	9	19 3/4
HBS03	25 1/4	36 1/4	20	2 1/4	3	14	22 1/4	6 1/4	9	23 3/4
HBS04	31 1/4	43 1/4	26	2 1/4	3	15	28 1/4	6 1/4	9	29 3/4
HBS06	36 1/4	43 1/4	31	2 1/4	3	10	33 1/4	7 1/2	10 1/4	34 3/4
HBS08	43 1/4	57 1/4	38	2 1/4	3	17	40 1/4	7 1/2	10 1/4	41 3/4
HBS10	57 1/4	65 1/4	52	2 1/4	3	11	54 1/4	7 1/2	10 1/4	55 3/4
HBS12	65 1/4	75 1/4	60	2 1/4	3	13	62 1/4	7 1/2	10 1/4	63 3/4

- NOTES:
1. R.H. shown, L.H. opposite.
  2. See pages Coil Connection Dimensions.
  3. Optional drip lip not required with extended drain pan.
  4. All dimensions  $\pm 1/4"$ .
  5. Add 3 1/2" for electric heat models.
  6. A' and D' dimensions are for extended drain pan option.
  7. 4 x 4 x 2 1/8" J-box or contractor box (as required).



## HRS RETURN PLENUM UNIT - 200 CFM THRU 1200 CFM



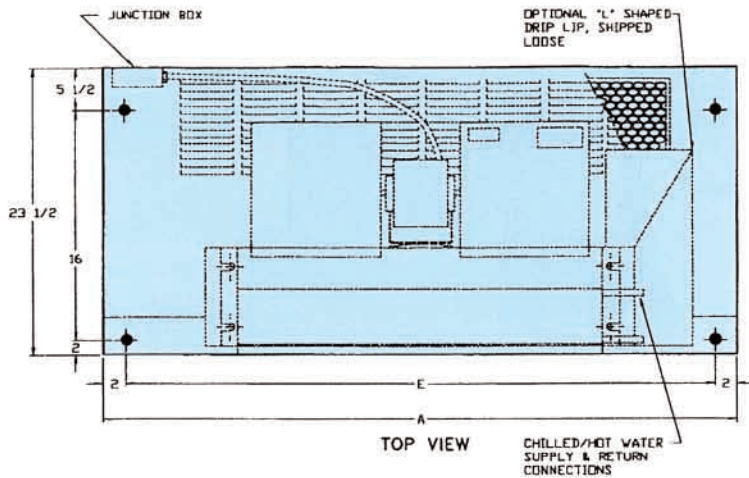
MODEL	DIMENSIONS--INCHES									
	A	A <sup>1</sup>	B	C	D	D <sup>1</sup>	E	F	G	H
HRS02	21 1/4	31 1/4	16	18 1/4	3	13	19 3/4	6 1/4	9	20 1/4
HRS03	25 1/4	36 1/4	20	22 1/4	3	14	23 3/4	6 1/4	9	24 1/4
HRS04	31 1/4	43 1/4	26	28 1/4	3	15	29 3/4	6 1/4	9	30 1/4
HRS06	36 1/4	43 1/4	31	33 1/4	3	10	34 3/4	7 1/2	10 1/4	35 1/4
HRS08	43 1/4	57 1/4	38	40 1/4	3	17	41 3/4	7 1/2	10 1/4	42 1/4
HRS10	57 1/4	65 1/4	52	54 1/4	3	11	55 3/4	7 1/2	10 1/4	56 1/4
HRS12	65 1/4	75 1/4	60	62 1/4	3	13	63 3/4	7 1/2	10 1/4	64 1/4

- NOTES:
1. R.H. shown, L.H. opposite.
  2. See pages on Coil Connection Dimensions.
  3. Optional drip lip not required with extended drain pan.
  4. All dimensions  $\pm 1/4"$ .
  5. Add 3 1/2" for electric heat models.
  6. Plenum hanger clip location may vary depending on unit accessories.
  7. A' and D' dimensions are for extended drain pan option.

# 3 Dimensions

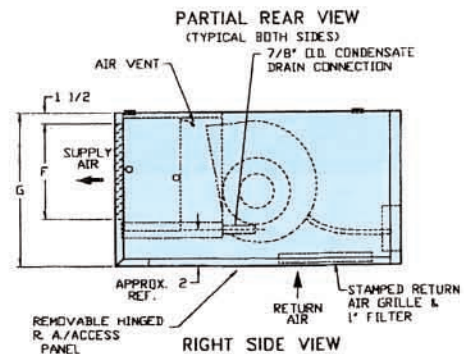
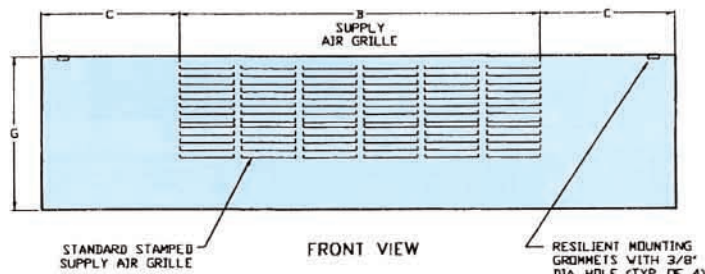
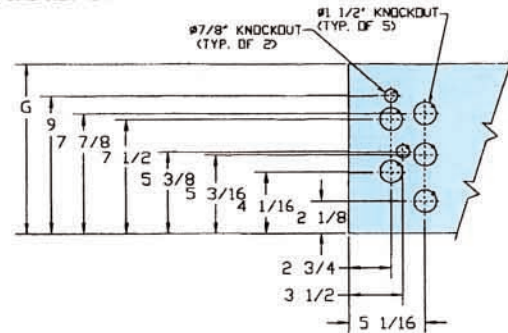
Deluxe Unit

## HDS DELUXE UNIT - 200 CFM THRU 1200 CFM



### NOTES:

1. R.H. SHOWN, L.H. OPPOSITE.
2. INTERNAL FACTORY VALVE PACKAGES AND DRAINS MAY NOT ALIGN WITH CABINET KNOCKOUTS.
3. ALL DIMENSION  $\pm 1/4$ ".

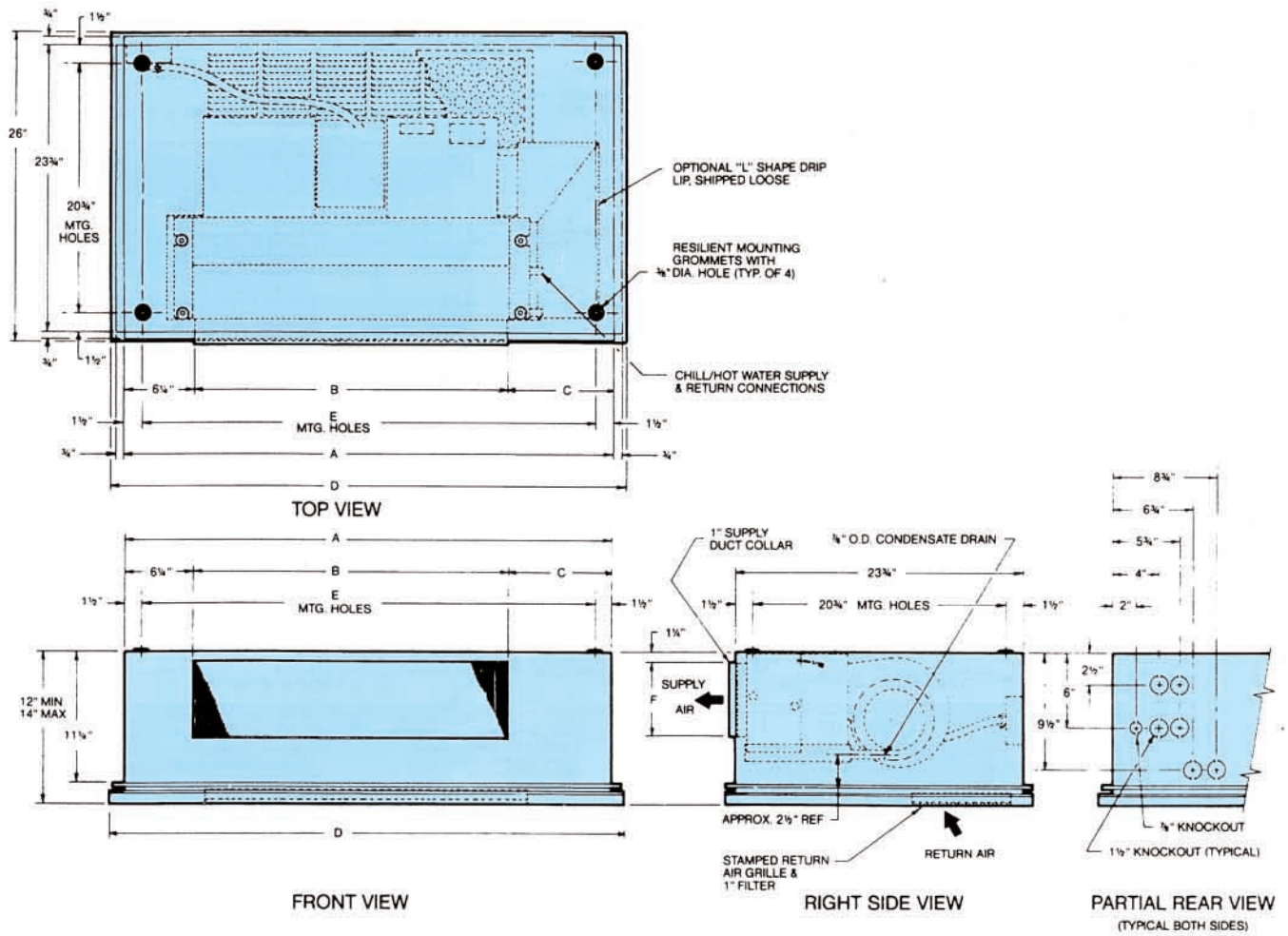


MODEL	DIMENSIONS - INCHES							UNIT QUANTITY	
	A	B	C	D	E	F	G	BLOWER	MOTOR
HDS02	38	17 1/8	10 7/16	-	34	5 3/4	11	1	1
HDS03	42	21 1/2	10 1/4	-	38	5 3/4	11	1	1
HDS04	48	25 7/8	11 1/16	-	44	5 3/4	11	2	1
HDS06	53	34 5/8	9 3/16	-	49	6 3/4	12	2	1
HDS08	60	39	10 1/2	-	56	6 3/4	12	2	1
HDS10	74	52 1/8	10 15/16	-	70	6 3/4	12	4	2
HDS12	82	60 7/8	10 9/16	-	78	6 3/4	12	4	2

- NOTES: 1. R.H. shown, L.H. opposite.  
 2. Internal factory valve packages and drains may not align with cabinet knockouts.  
 3. All dimensions  $\pm 1/4$ ".



### HFS CEILING FLUSH UNIT - 200 CFM THRU 1200 CFM



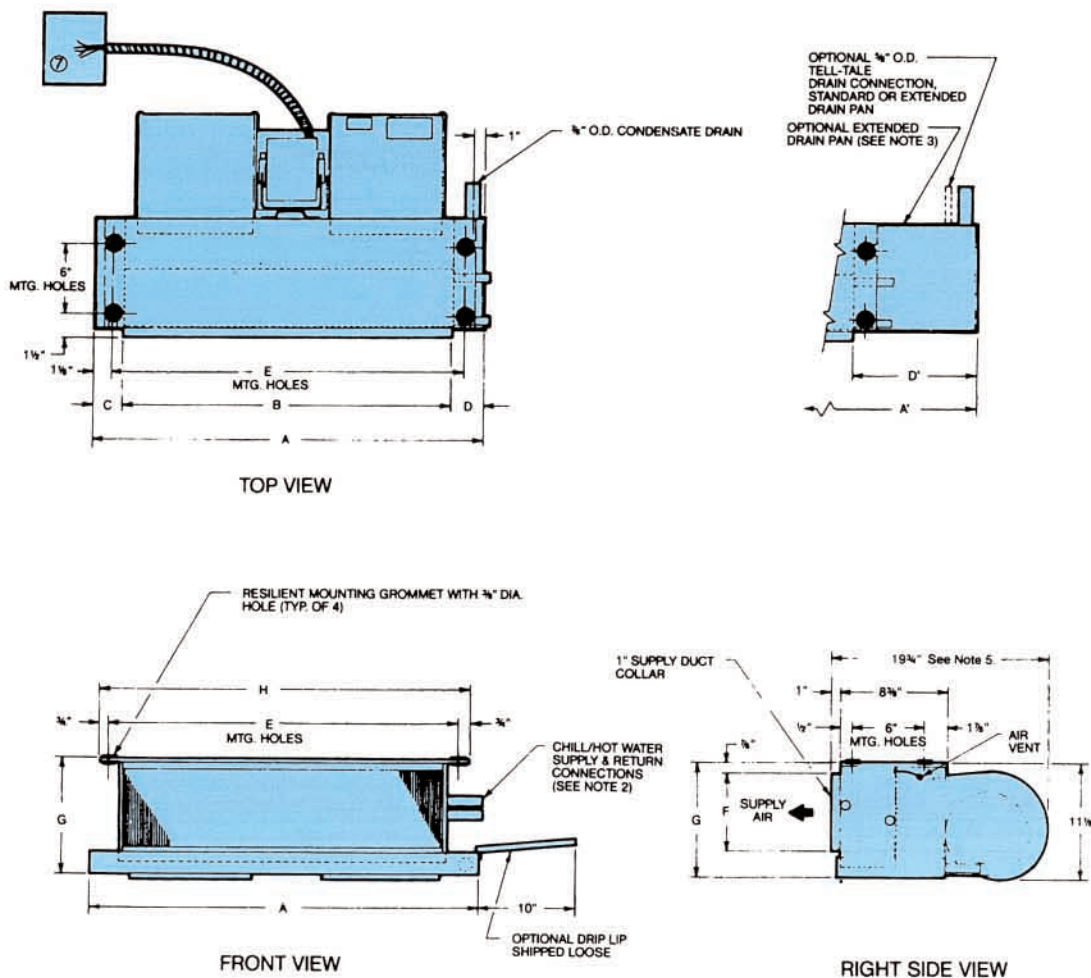
MODEL	DIMENSIONS--INCHES									
	A	A'	B	C	D	D'	E	F	G	H
HFS02	35	-	16	12 3/4	37	-	32	6	-	-
HFS03	35	-	20	8 3/4	37	-	32	6	-	-
HFS04	41	-	26	8 3/4	43	-	38	6	-	-
HFS06	53	-	31	15 3/4	55	-	50	7	-	-
HFS08	53	-	38	8 3/4	55	-	50	7	-	-
HFS10	75	-	52	16 3/4	77	-	72	7	-	-
HFS12	75	-	60	8 3/4	77	-	72	7	-	-

NOTES: 1. R.H. shown, L.H. opposite.  
2. Internal factory valve packages and drains may not align with cabinet knockouts.  
3. All dimensions  $\pm 1/4"$ .  
4. HFS not available with extended drain pans or extended cabinet.

# 3 Dimensions

High Static Basic Unit

## HSBS BASIC UNIT - 400 CFM THRU 1000 CFM

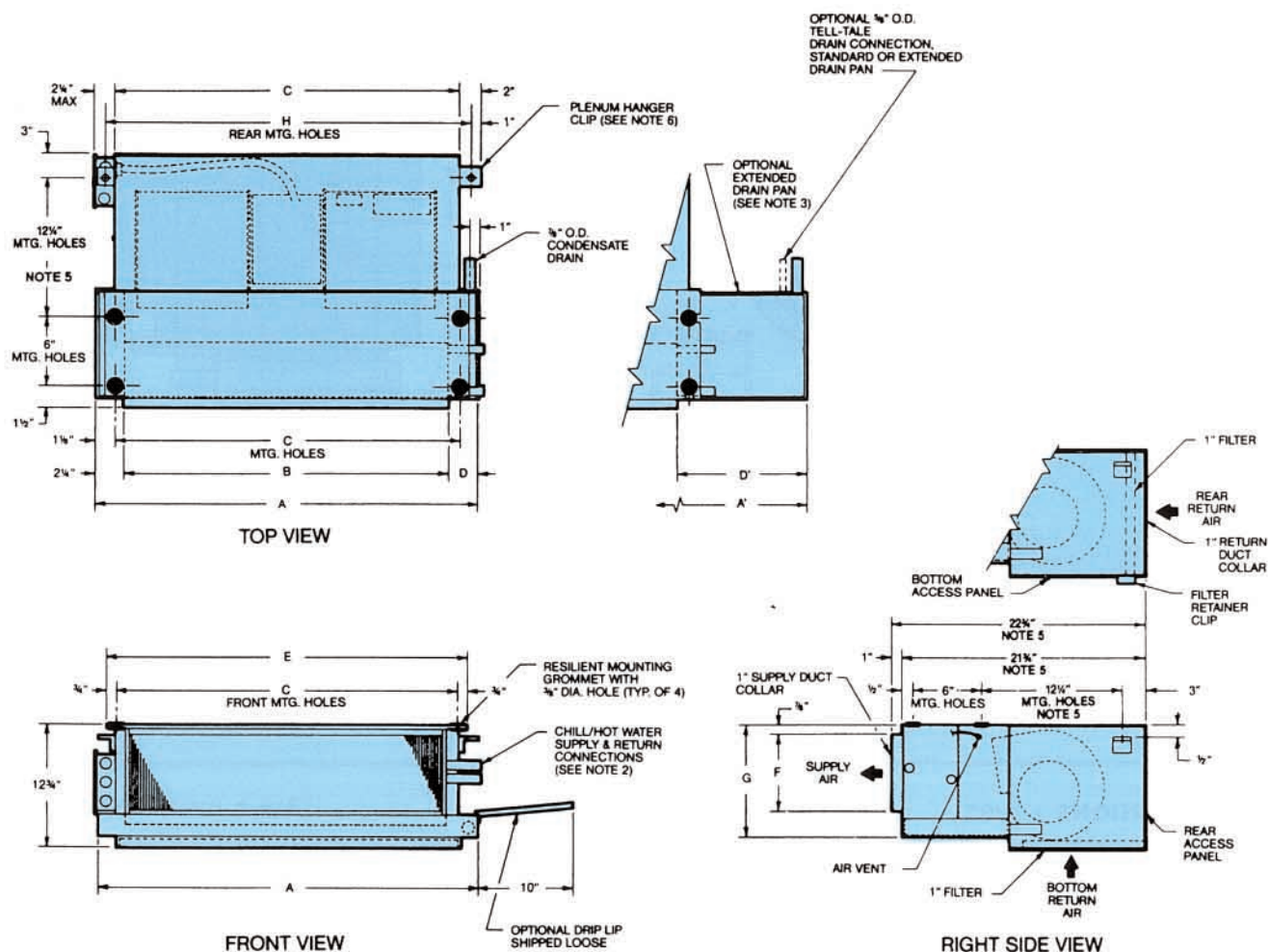


MODEL	DIMENSIONS--INCHES									
	A	A <sup>16</sup>	B	C	D	D <sup>16</sup>	E	F	G	H
HSBS04	31 1/4	43 1/4	26	2 1/4	3	15	28 1/4	6 1/4	9	29 3/4
HSBS06	36 1/4	43 1/4	31	2 1/4	3	10	33 1/4	7 1/2	10 1/4	34 3/4
HSBS08	43 1/4	57 1/4	38	2 1/4	3	17	40 1/4	7 1/2	10 1/4	41 3/4
HSBS10	57 1/4	65 1/4	52	2 1/4	3	11 <sup>7</sup>	54 1/4	7 1/2	10 1/4	55 3/4

- NOTES: 1. R.H. shown, L.H. opposite.  
 2. See pages on Coil Connection Dimensions.)  
 3. Optional drip lip not required with optional extended drain pan.  
 4. All dimensions  $\pm 1/4"$ .  
 5. Add 4" for electric heat models.  
 6. A' and D' dimensions are for extended drain pan option.  
 7. 4 x 4 x 2 1/8" J-box or contractor box (as required).)



### HSRS RETURN PLENUM - 400 CFM THRU 1000 CFM



MODEL	DIMENSIONS--INCHES									
	A	A <sup>®</sup>	B	C	D	D <sup>®</sup>	E	F	G	H
HSRS04	31 1/4	43 1/4	26	28 1/4	3	15	29 3/4	6 1/4	9	-
HSRS06	36 1/4	43 1/4	31	33 1/4	3	10	34 3/4	7 1/2	10 1/4	-
HSRS08	43 1/4	57 1/4	38	40 1/4	3	17	41 3/4	7 1/2	10 1/4	-
HSRS10	57 1/4	65 1/4	52	54 1/4	3	11	55 3/4	7 1/2	10 1/4	-

NOTES: 1. R.H. shown, L.H. opposite.

2. See pages on Coil Connection Dimensions.

3. Optional drip lip not required with optional extended drain pan.

4. All dimensions  $\pm 1/4"$ .

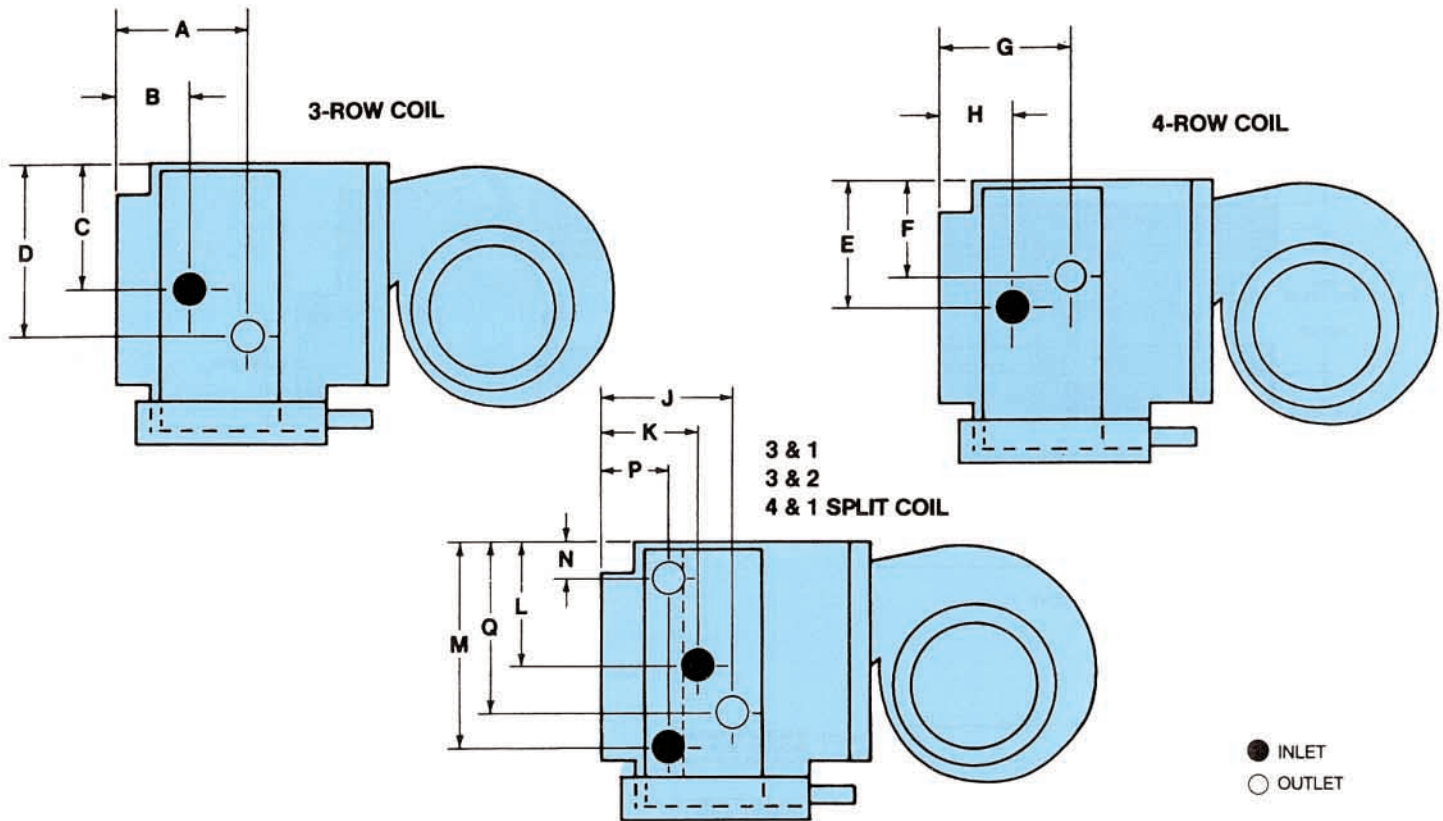
5. Add 4" for electric heat models.

6. A' and D' dimensions are for extended drain pan option.

# 3 Dimensions

Connection Locations  
Right Hand

## COIL CONNECTION DIMENSIONS<sup>1</sup> - RIGHT HAND



ALL DIMENSIONS  $\pm 5/8"$

		COIL CONNECTION DIMENSIONS														
RIGHT HAND	UNIT SIZE	3-RW COIL				4-RW COIL				3 & 1 SPLIT COIL						
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
	02	4 3/4	2 5/8	4 1/4	4 1/4	3 5/8	4 1/4	5 5/16	2 1/16	5 5/16	3 1/8	4 1/4	5 5/8	1 1/8	2 1/16	4 1/4
	03	4 3/4	2 5/8	4 1/4	4 1/4	3 5/8	4 1/4	5 5/16	2 1/16	5 5/16	3 1/8	4 1/4	5 5/8	1 1/8	2 1/16	4 1/4
	04	4 3/4	2 5/8	4 1/4	4 1/4	3 5/8	4 1/4	5 5/16	2 1/16	5 5/16	3 1/8	4 1/4	5 5/8	1 1/8	2 1/16	4 1/4
	06	4 3/4	2 5/8	3 5/8	4 7/8	5 1/2	4 7/8	5 5/16	2 1/16	5 5/16	3 1/8	4 7/8	6 7/8	2 3/8	2 1/16	4 7/8
	08	4 3/4	2 5/8	3 5/8	4 7/8	3 5/8	4 1/4	5 5/16	2 1/16	5 5/16	3 1/8	4 7/8	6 7/8	2 3/8	2 1/16	4 7/8
	10	4 3/4	2 5/8	4 7/8	3 5/8	4 1/4	4 7/8	5 5/16	2 1/16	5 5/16	3 1/8	5 1/2	6 7/8	2 3/8	2 1/16	4 1/4
	12	4 3/4	2 5/8	4 7/8	3 5/8	4 1/4	4 7/8	5 5/16	2 1/16	5 5/16	3 1/8	5 1/2	6 7/8	2 3/8	2 1/16	4 1/4

### 3 & 2 SPLIT COIL

RIGHT HAND	UNIT SIZE	J	K	L	M	N	P	Q
	02	6 5/16	4 1/8	4 1/4	5 5/8	1 3/4	2 11/16	4 1/4
	03	6 5/16	4 1/8	4 1/4	5 5/8	1 3/4	2 11/16	4 1/4
	04	6 5/16	4 1/8	4 1/4	5 5/8	1 3/4	2 11/16	4 1/4
	06	6 5/16	4 1/8	4 7/8	6 7/8	3	2 11/16	4 1/4
	08	6 5/16	4 1/8	4 7/8	6 7/8	3	2 11/16	4 1/4
	10	6 5/16	4 1/8	5 1/2	6 7/8	3	2 11/16	4 1/4
	12	6 5/16	4 1/8	5 1/2	6 7/8	3	2 11/16	4 1/4

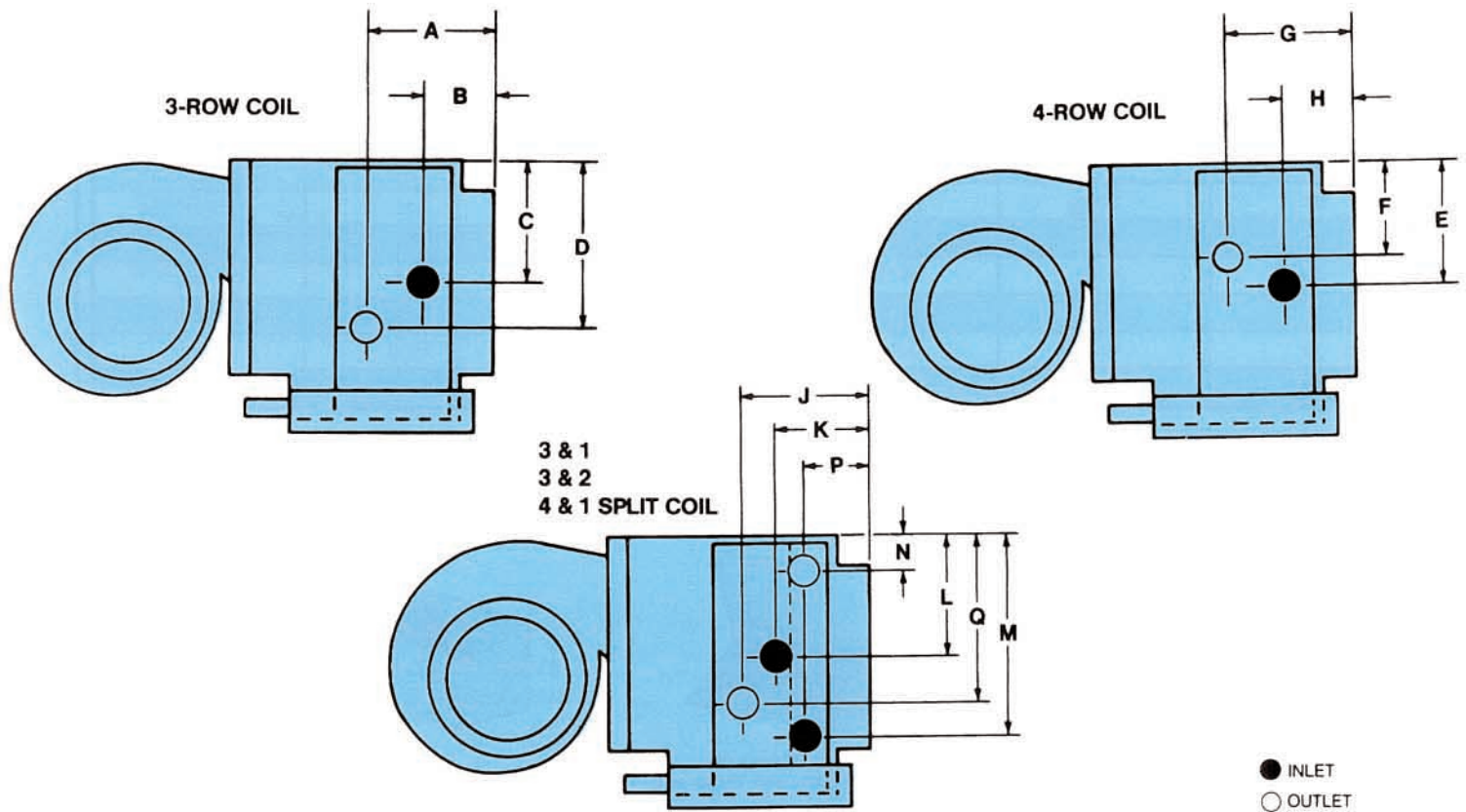
### 4 & 1 SPLIT COIL

RIGHT HAND	UNIT SIZE	J	K	L	M	N	P	Q
	02	5 3/16	2 5/8	4 1/4	5 5/8	1 1/8	1 9/16	4 1/4
	03	5 3/16	2 5/8	4 1/4	5 5/8	1 1/8	1 9/16	4 1/4
	04	5 3/16	2 5/8	4 1/4	5 5/8	1 1/8	1 9/16	4 1/4
	06	5 3/16	2 5/8	4 7/8	6 7/8	2 3/8	1 9/16	4 7/8
	08	5 3/16	2 5/8	4 7/8	6 7/8	2 3/8	1 9/16	4 7/8
	10	5 3/16	2 5/8	5 1/2	6 7/8	2 3/8	1 9/16	4 1/4
	12	5 3/16	2 5/8	5 1/2	6 7/8	2 3/8	1 9/16	4 1/4

- NOTES: 1. Dimensions do not apply to units with factory valve packages.  
2. All connection sizes 5/8" O.D. copper.



## COIL CONNECTION DIMENSIONS<sup>1</sup> - LEFT HAND



ALL DIMENSIONS  $\pm 5/8"$

		COIL CONNECTION DIMENSIONS														
LEFT HAND	UNIT SIZE	3-ROW COIL				4-ROW COIL				3 & 1 SPLIT COIL						
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
	02	4 3/4	2 5/8	4 1/4	4 1/4	4 1/4	3 5/8	5 5/16	2 1/16	5 5/16	3 1/8	3 5/8	5	1/2	2 1/16	3 5/8
	03	4 3/4	2 5/8	4 1/4	4 1/4	4 1/4	3 5/8	5 5/16	2 1/16	5 5/16	3 1/8	3 5/8	5	1/2	2 1/16	3 5/8
	04	4 3/4	2 5/8	4 1/4	4 1/4	4 1/4	3 5/8	5 5/16	2 1/16	5 5/16	3 1/8	3 5/8	5	1/2	2 1/16	3 5/8
	06	4 3/4	2 5/8	4 7/8	3 5/8	4 7/8	5 1/2	5 5/16	2 1/16	5 5/16	3 1/8	4 1/4	6 3/4	1/2	2 1/16	4 1/4
	08	4 3/4	2 5/8	4 7/8	3 5/8	4 1/4	3 5/8	5 5/16	2 1/16	5 5/16	3 1/8	4 1/4	6 3/4	1/2	2 1/16	4 1/4
	10	4 3/4	2 5/8	3 5/8	4 7/8	4 7/8	4 1/2	5 5/16	2 1/16	5 5/16	3 1/8	3 5/8	6 3/4	1/2	2 1/16	4 7/8
	12	4 3/4	2 5/8	3 5/8	4 7/8	4 7/8	4 1/2	5 5/16	2 1/16	5 5/16	3 1/8	3 5/8	6 3/4	1/2	2 1/16	4 7/8

### 3 & 2 SPLIT COIL

LEFT HAND	UNIT SIZE	J	K	L	M	N	P	Q
	02	6 5/16	4 1/8	3 5/8	5	1 1/8	2 11/16	3 5/8
	03	6 5/16	4 1/8	3 5/8	5	1 1/8	2 11/16	3 5/8
	04	6 5/16	4 1/8	3 5/8	5	1 1/8	2 11/16	3 5/8
	06	6 5/16	4 1/8	4 1/4	6 3/4	1 1/8	2 11/16	4 1/4
	08	6 5/16	4 1/8	4 1/4	6 3/4	1 1/8	2 11/16	4 1/4
	10	6 5/16	4 1/8	3 5/8	6 3/4	1 1/8	2 11/16	4 7/8
	12	6 5/16	4 1/8	3 5/8	6 3/4	1 1/8	2 11/16	4 7/8

### 4 & 1 SPLIT COIL

LEFT HAND	UNIT SIZE	J	K	L	M	N	P	Q
	02	5 3/16	2 5/8	3 5/8	5	1/2	1 9/16	3 5/8
	03	5 3/16	2 5/8	3 5/8	5	1/2	1 9/16	3 5/8
	04	5 3/16	2 5/8	3 5/8	5	1/2	1 9/16	3 5/8
	06	5 3/16	2 5/8	4 1/4	6 3/4	1/2	1 9/16	4 1/4
	08	5 3/16	2 5/8	4 1/4	6 3/4	1/2	1 9/16	4 1/4
	10	5 3/16	2 5/8	3 5/8	6 3/4	1/2	1 9/16	4 7/8
	12	5 3/16	2 5/8	3 5/8	6 3/4	1/2	1 9/16	4 7/8

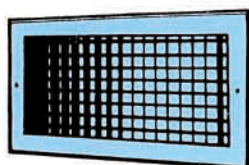
- NOTES: 1. Dimensions do not apply to units with factory valve packages.  
2. All connection sizes 5/8" O.D. copper.

# 4 Options & Accessories

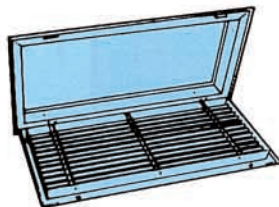
Filters & Grilles

SUPPLY GRILLE SIZES		
UNIT SIZE	NOMINAL CFM	SUPPLY GRILLE SIZES
02	200	16"x6"
03	300	20"x6"
04	400	26"x6"
06	600	30"x6"
08	800	38"x6"
10	1000	52"x6"
12	1200	60"x6"

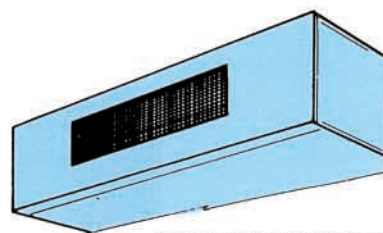
RETURN GRILLE SIZES		
UNIT SIZE	NOMINAL CFM	RETURN AIR
02	200	24"x10"
03	300	28"x10"
04	400	32"x10"
06	600	42"x10"
08	800	42"x10"
10	1000	54"x10"
12	1200	64"x10"



Double Deflection, Aluminum Finish Supply Grille



Hinged, Bar-type, Aluminum Finish Return Grille with Throw-away Filter



Double Deflection, Integral Steel Supply Grille (Painted to match color of unit)

## FILTER SIZE CHART

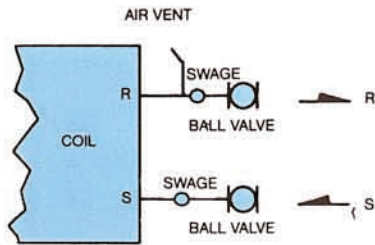
UNIT SIZE	HBS <sup>1</sup>	BOTTOM RET. HRS	REAR RET. HRS	HFS BOTTOM RET. (STAMPED)	HFS REAR RET. (DUCTED)	HDS BOTTOM RET. (STAMPED)	HDS REAR RET. (STAMPED)	HDS REAR RET. (DUCTED)
02	10 x 24	10 x 18	10 x 18	10 x 28	7 x 21	10 x 23 1/2	10 x 23 1/2	10 x 23 1/2
03	10 x 28	10 x 22	10 x 22	10 x 28	7 x 21	10 x 28	10 x 28	10 x 28
04	10 x 32	10 x 28	10 x 28	10 x 33	7 x 27	10 x 32 1/2	10 x 32 1/2	10 x 32 1/2
06	10 x 42	10 x 33	10 x 33	10 x 45	7 x 38	10 x 37	10 x 37	10 x 37
08	10 x 42	10 x 40	10 x 40	10 x 45	7 x 38	10 x 41	10 x 41	10 x 41
10	10 x 54	10 x 54	10 x 54	10 x 62	7 x 52	10 x 54 1/2	10 x 54 1/2	10 x 54 1/2
12	10 x 64	10 x 62	10 x 62	10 x 62	7 x 52	10 x 63	10 x 63	10 x 63

UNIT SIZE	HSBS <sup>1</sup>	HSRS BOTTOM RET. W/HEAT	HSRS BOTTOM RET. W/O HEAT	HSRS REAR RET. W/HEAT	HSRS REAR RET. W/O HEAT
02	N/A	N/A	N/A	N/A	N/A
03	N/A	N/A	N/A	N/A	N/A
04	10 x 32	16 3/4 x 28	12 3/4 x 28	12 3/4 x 28	12 3/4 x 28
06	10 x 42	16 3/4 x 33	12 3/4 x 33	12 3/4 x 33	12 3/4 x 33
08	10 x 42	16 3/4 x 40	12 3/4 x 40	12 3/4 x 40	12 3/4 x 40
10	10 x 54	16 3/4 x 54	13 3/4 x 54	12 3/4 x 54	12 3/4 x 54
12	N/A	N/A	N/A	N/A	N/A

NOTES: 1. Recommended minimum filter sizes (field furnished and installed).  
2. Sizes shown are nominal ordering sizes.



## NO MOTORIZED CONTROL VALVE



### BASIC APPLICATION

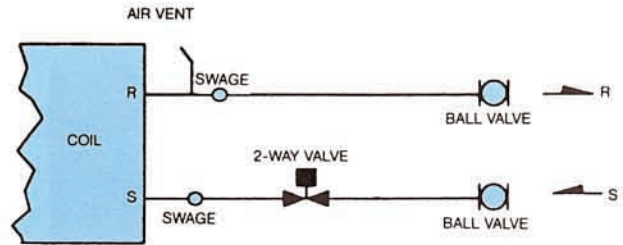
2 PIPE SYSTEM ONLY (One Valve Package)

- A. 2 Pipe - Hydronic Heating Only
- B. 2 Pipe - Hydronic Cooling Only

#### Notes:

1. Continuous water flow, chilled water or hot water
2. Not recommended for high humidity applications

## 2-WAY MOTORIZED CONTROL VALVE



### BASIC APPLICATION

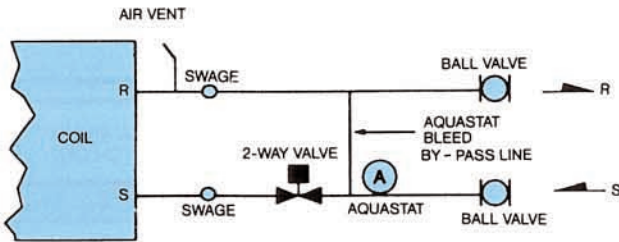
2 PIPE SYSTEM (One Valve Package) or 4-PIPE SYSTEM (Two Valve Packages)

- A. 2 Pipe - Hydronic Heating Only
- B. 2 Pipe - Hydronic Cooling Only
- C. 2 Pipe - Hydronic Cooling with Total Electric Heat
- D. 4 Pipe - Hydronic Cooling and Heating

#### Notes:

1. Not recommended for 2 Pipe with automatic controls

## 2-WAY MOTORIZED CONTROL VALVE WITH AQUASTAT BLEED BY-PASS LINE



### BASIC APPLICATION

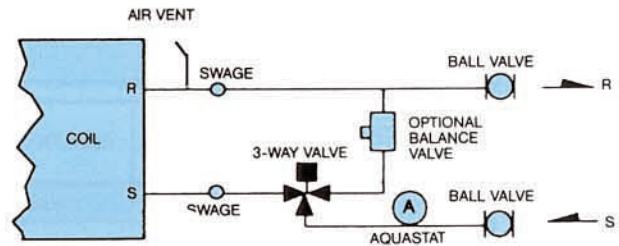
2 PIPE SYSTEM ONLY (One Valve Package)

- A. 2 Pipe - Hydronic Cooling and Heating
- B. 2 Pipe - Hydronic Cooling and Heating with Auxiliary Electric Heat

#### Notes:

1. Additional aquastat required as noted above

## 3-WAY MOTORIZED CONTROL VALVE



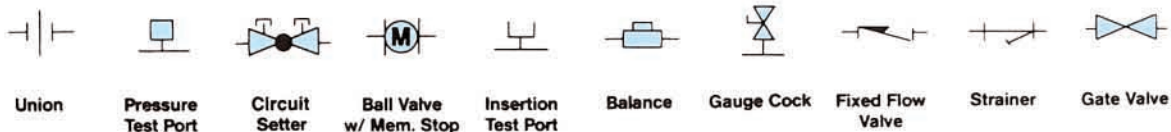
### BASIC APPLICATION

2 PIPE SYSTEM (One Valve Package) or 4-PIPE SYSTEM (Two Valve Packages)

- A. 2 Pipe - Hydronic Heating
- B. 2 Pipe - Hydronic Cooling
- C. Hydronic Cooling and Heating
- D. Hydronic Cooling and Heating with Auxiliary Electric Heat
- E. 2 Pipe - Hydronic Cooling with Total Electric Heat
- F. 4 Pipe - Hydronic Cooling and Heating

## OTHER PIPING OPTIONS

Consult USA Coil & Air Valve Packages and Piping Component's Manual for detailed piping and valve information.



# 4 Options & Accessories

## Control Packages

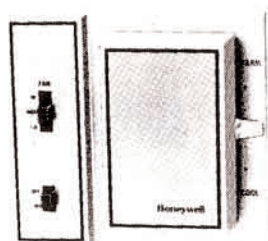
### CONTROL PACKAGES



155-A



155-B



Wall Series 4039

No Picture  
Available

Wall Mount Switch

UNIT TYPE	CONTROL OPTION	SYSTEM TYPE	CHANGEOVER	1. SERIES 155-A Horiz./Vert.	2. SERIES 155-B Horiz./Vert.	WALL SERIES #4039	WALL MOUNT SWITCH ONLY
2 PIPE	Valve Cycle	Heat Only	None		X	X	X
		Cool Only	None		X	X	X
		Heat/Cool	Manual	X		X	
			Auto		X	X	X
	Continuous Fan Operation	Heat/Cool w/Aux. Electric Heat	Manual	X		X	
			Auto		X	X	X
		Cool w/Total Electric Heat	Manual	X		X	
			Auto		X	X	X
4 PIPE	Valve Cycle Continuous Fan Operation	Heat/Cool	Manual	X		X	
			Auto		X	X	X

1. Use 155-A in Horiz. or Vertical for 2 Pipe or 4 Pipe - Manual c/o only
2. Use 155-B in Horiz. or Vertical for Heat only/Cool only or Automatic c/o only

### OTHER CONTROL OPTIONS (Consult Factory)

- Control packages with valve cycle control are continuous fan operation only.
- All wall mount control packages shipped loose for field installation.
- Aquastats included in pricing of package (as required).
- Use wall mount switch only when thermostats are to be field furnished and installed. Factory will provide fan switch, aquastat (if required) and a U.L. wiring diagram to match the application.
- Low voltage - 24V. control application - consult factory
- Single power source wiring - consult factory
- Unit mounted speed switch and remote mounted t'stat - consult factory