



**DIRECT-DRIVE BLOWER
FAN COIL AIR CONDITIONER
ENGINEERING GUIDE**

Model: YSHW-DD



00784VIP



Introduction

YORK DIRECT DRIVE FAN COIL UNITS

The YORK Fan Coil Unit is designed for many exposed and concealed applications. The fan-coil market of today demands the high-performance, flexibility and quality available in this completely redesigned product that sets it apart from the competition.

Today's need for high performance units to do more within less space required a new coil design. By incorporating a smaller, high-output coil, the YORK Fan Coil Unit produces unmatched cooling and heating performance within a slim, space-saving envelope. New low-energy motors have been carefully matched to forward-curved fans for the quietest operation possible.

INDOOR AIR QUALITY FEATURES

Designing buildings with indoor air quality in mind has become the standard for engineers all over the world. To meet the exacting requirements that today's engineers demand, the YORK Fan Coil Unit was designed with a wide range of features to incorporate into Indoor Air Quality plans. Some of the options available include: stainless steel drain pan, 1/2" permanent washable filter and outside air mixing capability.

FLEXIBILITY AND QUALITY CONSTRUCTION

All models are constructed of precisely formed, heavy gauge galvanized steel. Individual fan and coil modules are securely fastened together to create a solid, high-performance unit. Cabinet models are painted with the latest in electrostatic painting techniques. It's the same process used to paint our rugged, outdoor chillers, and provide a durable attractive finish.

Description

YORK DIRECT DRIVE FAN COIL UNITS

YSHW-DD

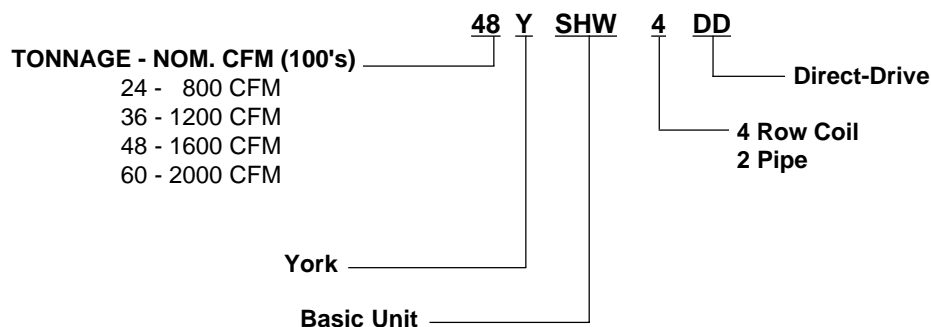


MODEL YSHW-DD

The YSHW-DD series blower coil air handler provides a very competitive alternative to belt drive air handlers. These air handlers can be used where external static pressures do not exceed 0.60. They can be installed within the conditioned space as free-blow units or as remote units with duct systems. Standard 4 row coils can be used for cooling or heating. These air handlers are compact, with large removable panels on both sides for installation and ease of service. Separate filter panels are provided on both sides of unit. All motors are 115V, single phase, 3 speed.

Standard models are available in 4 popular sizes - 800, 1200, 1600, and 2000 nominal CFM (2 through 5 tons).

Nomenclature



NOTE:

This unit is only available with 115V power.

Features & Benefits

Basic Unit

The unit is manufactured with heavy gauge galvanized steel to resist corrosion.

Each cabinet is fully insulated.

Coil connections are stubbed out the cabinet for easier installation.

Coils

Coils have 3/8" copper tubing expanded to high efficiency aluminum fins. Manual air vents are provided and all coils are pressure tested to 350 psig.

Drain Pans

Each drain pan is coated with "closed cell" material to reduce corrosion.

Motors

Standard motors are PSC type with internal thermal overload protection and are mounted with rubber isolating bushings.

Blower wheels are centrifugal, forward curved, and dynamically balanced.

Filters

One inch throw away filters are factory installed. Space provided for 2".

Agency Listing

All standard models are U.L. Listed.

ADDITIONAL FEATURES

Header connections on the right side as standard. Knockouts are provided for conversion to the left side. (Looking with airflow).

4 x 4 junction box accepts a field installed (24/120V) relay / transformer for low voltage control.

Cooling / Heating

COOLING PERFORMANCE DATA															
UNIT MODEL	CFM	GPM	P.D. FT. WTR.	45°F ENTERING WATER						42° ENTERING WATER					
				80°F DB/67°WB ENT. AIR			75°F DB/63°F WB ENT. AIR			80°F DB/67°F WB ENT. AIR			75°F DB/63°F WB ENT. AIR		
				TOTAL MBH	SENS MBH	TEMP. RISE	TOTAL MBH	SENS MBH	TEMP. RISE	TOTAL MBH	SENS MBH	TEMP. RISE	TOTAL MBH	SENS MBH	TEMP. RISE
24YSHW4-DD	900 (HIGH)	3.0	1.2	20.4	16.9	13.6	16.5	16.5	11.0	22.3	17.6	14.9	17.0	15.5	11.3
		6.0	4.4	28.3	19.8	9.4	21.6	17.3	7.2	30.8	20.7	10.3	23.5	18.0	7.8
		9.0	9.3	31.4	20.9	7.0	24.0	18.2	5.3	34.3	22.0	7.6	26.2	19.1	5.8
	780 (LOW)	3.0	1.2	19.7	15.6	13.1	15.0	13.8	10.0	21.5	16.2	14.3	16.4	14.3	10.9
		6.0	4.4	26.3	18.0	8.8	20.0	15.7	6.7	28.6	18.9	9.5	21.9	16.4	7.3
		9.0	9.3	28.8	19.0	6.4	22.0	16.5	4.9	31.4	20.0	7.0	23.9	17.3	5.3
36YSHW4-DD	1200 (HIGH)	4.0	2.0	28.8	23.4	14.4	22.0	20.7	11.0	31.4	24.4	15.7	24.0	21.5	12.0
		8.0	7.5	39.4	27.3	9.9	30.1	23.8	7.5	43.0	28.7	10.7	32.8	24.9	8.2
		12.0	16.3	43.6	28.9	7.3	33.3	25.1	5.5	47.5	30.4	7.9	36.3	26.3	6.0
	1100 (LOW)	4.0	2.0	28.6	22.4	14.3	21.8	19.8	10.9	31.2	23.3	15.6	23.8	20.5	11.9
		8.0	7.5	37.6	25.8	9.4	28.7	22.5	7.2	41.0	27.1	10.3	31.3	23.5	7.8
		12.0	16.3	41.1	27.1	6.8	31.4	23.5	5.2	44.8	28.5	7.5	34.2	24.6	5.7
48YSHW4-DD	1540 (HIGH)	6.0	3.9	40.8	31.5	13.6	31.2	27.8	10.4	44.5	32.9	14.8	34.0	28.9	11.3
		10.0	10.3	50.8	35.2	10.2	38.8	30.7	7.8	55.4	37.0	11.1	42.3	32.1	8.5
		13.0	17.0	54.7	36.7	8.4	41.7	31.9	6.4	59.6	38.6	9.2	45.5	33.4	7.0
	1300 (LOW)	6.0	3.9	38.3	28.4	12.8	29.2	24.9	9.7	41.7	29.7	13.9	31.9	25.9	10.6
		10.0	10.3	46.4	31.4	9.3	35.4	27.3	7.1	50.6	33.0	10.1	38.6	28.6	7.7
		13.0	17.0	49.5	32.6	7.6	37.8	28.3	5.8	54.0	34.4	8.3	41.2	29.6	6.3
60YSHW4-DD	2100 (HIGH)	6.0	1.8	45.5	38.9	15.2	38.2	38.2	12.7	49.6	40.4	16.5	37.9	35.8	12.6
		11.0	5.7	62.5	45.1	11.4	47.8	39.6	8.7	68.2	47.2	12.4	52.0	41.2	9.5
		16.0	11.6	70.8	48.2	8.9	54.1	42.0	6.8	77.2	50.7	9.7	59.0	44.0	7.4
	1880 (LOW)	6.0	1.8	44.2	36.5	14.7	35.8	35.8	11.9	48.2	37.9	16.1	36.8	33.5	12.3
		11.0	5.7	59.5	42.1	10.8	45.4	36.8	8.3	64.8	44.1	11.8	49.5	38.4	9.0
		16.0	11.6	66.8	44.8	8.3	51.0	39.0	6.4	72.8	47.2	9.1	55.6	40.8	6.9

NOTES:

1. Motors are 3 speed direct drive.
2. All coils are 4 row.

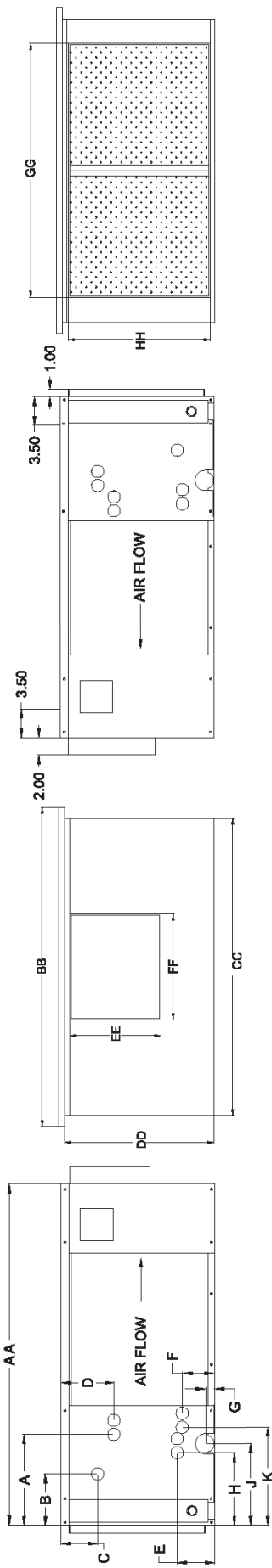
HEATING PERFORMANCE DATA						
UNIT MODEL	CFM	GPM (HTG.)	P.D. FT. WTR.	HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE		
				140°F	160°F	180°F
				24YSHW4-DD	900 (HIGH)	3.0
6.0	4.4	43.5	55.9			68.3
9.0	9.3	45.4	58.4			71.4
780 (LOW)	3.0	1.2	35.3		45.4	55.5
	6.0	4.4	39.5		50.8	62.1
	9.0	9.3	41.2		52.9	64.7
36YSHW4-DD	1200 (HIGH)	4.0	2.0	53.4	68.6	83.9
		8.0	7.5	60.3	77.5	94.7
		12.0	16.3	62.9	80.9	98.9
	1100 (LOW)	4.0	2.0	50.7	65.1	79.6
		8.0	7.5	56.8	73.1	89.3
		12.0	16.3	59.2	76.2	93.1
48YSHW4-DD	1540 (HIGH)	6.0	3.9	71.4	91.8	112.2
		10.0	10.3	77.8	100.0	122.2
		13.0	17.0	80.2	103.1	126.0
	1300 (LOW)	6.0	3.9	64.5	83.0	101.4
		10.0	10.3	69.5	89.3	109.2
		13.0	17.0	71.3	91.6	112.0
60YSHW4-DD	2100 (HIGH)	6.0	1.8	89.2	114.6	140.1
		11.0	5.7	100.4	129.1	157.8
		16.0	11.6	105.7	135.9	166.1
	1880 (LOW)	6.0	1.8	83.6	107.4	131.3
		11.0	5.7	93.4	120.1	146.8
		16.0	11.6	98.1	126.1	154.1

BLOWER DATA									
UNIT MODEL	FAN SPD.	MTR. HP (120V)	MTR. AMPS (120V)	CFM vs. EXTERNAL STATIC PRESSURE					
				0.10	0.20	0.30	0.40	0.50	0.60
				24YSHW4-DD	HIGH	1/5	3.3	990	975
LOW	865	830	790		760			720	670
36YSHW4-DD	HIGH	1/3	6.5	1410	1345	1260	1180	1090	980
	LOW			1230	1200	1145	1080	1000	900
48YSHW4-DD	HIGH	1/2	8.5	1750	1665	1580	1490	1390	1290
	LOW			1440	1400	1330	1270	1190	1100
60YSHW4-DD	HIGH	3/4	10.6	2350	2270	2180	2060	1940	1800
	LOW			2040	1980	1920	1840	1760	1680

NOTES:

1. Motors are 3 speed direct drive.
2. All coils are 4 row. 2 Pipe only.
3. 115V only.

Product Dimensions



MODEL	UNIT CABINET				BLOWER OUTLET		RETURN DUCT CONNECTION		STUBOUT LOCATION FOR WATER COILS									
	AA	BB	CC	DD	EE	FF	GG	HH	A	B	C	D	E	F	G	H	J	K
24YSHW4-DD	37	32-1/2	27	18-7/8	8-3/4	10-7/8	18	16-1/4	11-1/4	6-5/16	4-1/2	6-1/2	4-1/2	3-15/16	1	8-15/16	10	12
36YSHW4-DD	37	42	36-1/2	18-7/8	12-1/4	10-7/8	27-1/2	16-1/4	11-1/4	6-5/16	4-1/2	6-1/2	4-1/2	3-15/16	1	8-15/16	10	12
48YSHW4-DD	39	43-1/2	38	22-7/8	13-5/8	11-7/8	29	20-1/4	11-1/4	6-5/16	3-3/4	5-3/4	4-1/2	3-15/16	1	8-15/16	10	12
60YSHW4-DD	42	50-1/2	45	22-7/8	16	13-7/8	36	20-1/4	11-1/4	6-5/16	3-3/4	5-3/4	4-1/2	3-15/16	1	8-15/16	10	12

NOTES: 1) All drain connections are 3/4" MPT and located on one side only (same side as coil connections).
 2) All units have knockouts on both sides for either right (standard) or left side coil stub outs. (Looking with airflow)



MODEL	NOM. COOL TONS	FACE AREA SQ. FT.	TUBE SIZE	STD. MOTOR HP	VOLTS	PHASE	BLOWER SIZE	FILTER SIZE	4 ROW COIL	
									MANIFOLD CONNECTION	SHIPPING WEIGHT
24YSHW4-DD	2	2.05	3/8	1/5	115	1	9 x 6	16 x 25	7/8" O/D (SWT)	150
36YSHW4-DD	3	3.05	3/8	1/3	115	1	9 x 8	16 x 16 (2)	7/8" O/D (SWT)	175
48YSHW4-DD	4	4.0	3/8	1/2	115	1	9 x 9	16 x 20 (2)	7/8" O/D (SWT)	210
60YSHW4-DD	5	5.0	3/8	3/4	115	1	10 x 8	20 x 20 (2)	1-1/8" O/D (SWT)	245

NOTES: 1) All technical specifications subject to change without notice.
 2) When YSHW-DD units are used with hot water coil the leaving air temperature must not exceed 145 degrees. At high altitude conditions, blower motor may cutout at a lower LAT. Contact factory for information.
 3) Contact factory for electric heat information (supplied by others).

PRODUCT DRAWING: Project Name:
 Location:
 Engineer:
 Contractor:
 For: REFERENCE

Sold To:
 Cust Purch Order #:

Quote Date:
 Rev. Date:
 Form No.:
 Dwg. Lev.:
 Dwg. Scale: NTS



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Supersedes: Nothing

FORM 115.20-PA9 (404)

Options

1. 1" Permanent filters

<u>PART NUMBER</u>	<u>FOR UNIT MODEL</u>
975-1	24YSHW-DD
975-2	36YSHW-DD
975-3	48YSHW-DD
975-4	60YSHW-DD

2. Discharge plenum with four way double - deflection grille (field installed).

<u>PART NUMBER</u>	<u>FOR UNIT MODEL</u>	<u>DEPTH</u>
24DP	24YSHW-DD	6"
36DP	36YSHW-DD	6"
48DP	48YSHW-DD	6"
60DP	60YSHW-DD	6"



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(Discharge Plenum)

3. Relay / Transformer (24/120V) mounts directly on a 4 x 4 junction box on each unit. Part number is **E301**.

4. Mixing box attaches to return end of air handler to allow entry of outside air (field installed). Dampers can be positioned for either rear / top or rear / bottom locations. Crank arms and linkage rod are furnished but not installed. Balance of hardware including motor and controls to be field supplied.

<u>PART NUMBER</u>	<u>FOR UNIT MODEL</u>	<u>DEPTH</u>
24MB	24YSHW-DD	16"
36MB	36YSHW-DD	16"
48MB	48YSHW-DD	16"
60MB	60YSHW-DD	16"



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NOTES

