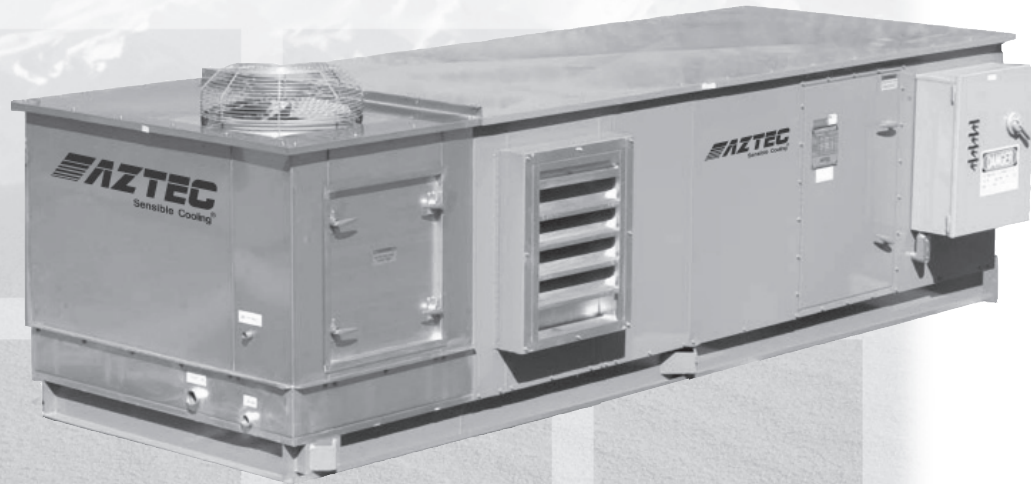


Indirect and Indirect/Direct Evaporative Units

Technical Guide for:

- **ASC** Low Operating Cost, High Efficiency, Environmentally Friendly Evaporative Cooling Units



Aztec

Keeps You

Comfortable

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Aztec has been manufacturing quality heating and cooling, Indirect and Indirect/Direct Evaporative products since 1969. We have provided HVAC equipment to numerous school districts, prisons, military bases, defense contractors, large industrial facilities, and small business complexes.

Our design and engineering staff has extensive experience in Indirect and Indirect/Direct air handler design, heat recovery, heating, ventilation, and refrigeration equipment. We are committed to supplying top quality catalog and custom equipment at a reasonable cost. Our nationwide sales organization is available to help you select the right equipment to solve your problem.

WHY USE THIS TYPE OF EQUIPMENT?

- Evaporative cooling is the most energy efficient form of cooling that exists.
- Equipment cost is lower than a refrigeration system.
- Installation is simple and inexpensive.
- Reduced operating costs compared to expensive refrigeration system.
- Maximum comfort when you need it most. The hotter and drier the air, the greater the cooling.
- Provides fresh air to building, forcing stale air out.
- Provides fresh air ventilation anytime by just turning off the indirect and/or direct evaporative cooling section. The blower continues to supply fresh filtered air to the building.
- Flexible design allows you to add return air capability, indirect fired gas fired heating section and other components to fit any application.

WHY USE AZTEC UNITS?

- All standard “A” Series units are ETL listed and have undergone years of development to produce one of the finest Indirect and Indirect/Direct Evaporative Cooling units in the industry. This assures the owner of equipment reliability and conformance to recognized standards.
- Units are designed for outdoor application, either roof or grade mounted with standard models in 11 different cabinet sizes, and range in size from 2,000 to 37,500 CFM. Larger models are also available. Contact your local Aztec representative or the factory for more information.
- Indirect fired gas heating sections with two pass drum and tube design and capacities up to 1,400 MBH input are available on standard units. Entire primary and secondary heat exchanger is constructed of 400 series stainless steel. Inputs up to 600 MBH incorporate the Digital High Turndown modulating power gas burner (Copyright © 2007 Mestek Inc Patent(s) Pending) with individually controlled variable speed combustion air blower motor and motorized gas valve for linkageless design. Larger inputs incorporate standard modulating power gas burners. If gas is not accessible, steam or hot water coils or electric heating elements are also available.
- Aztec’s long term perspective is that all standard air handlers are built to last. We use only top quality components and design units for quick access to simplify routine maintenance.
- Every unit is tested and run at the factory before shipment. This insures customer satisfaction and minimizes field start up problems. Factory approved start up service is also available on all units.

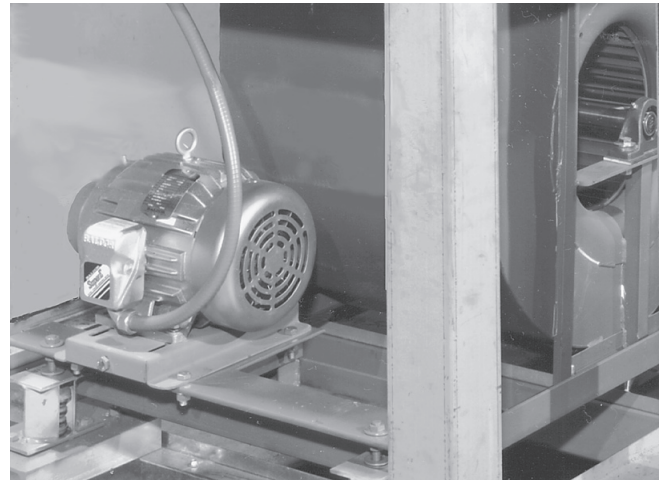
STANDARD INDIRECT/DIRECT FEATURES

- Stainless steel integral cooling tower with submersible type pump.
- Stainless steel direct evaporative section.
- 6 row, aluminum fin/copper tube indirect cooling coil section.
- 12" media in direct evaporative section.
- PVC plumbing.
- U.L. listed, single phase submersible pump in direct evaporative section.
- Adjustable sump water bleed-off valve assembly in cooling tower and direct evaporative section.
- Low sump water level shut-off switch in cooling tower and direct evaporative section.
- Centrifugal, forward curved, DWDI supply air fan tested and constructed to AMCA standard 210 for cooling only units or centrifugal, backward airfoil, SWSI plenum type blower rated in accordance with AMCA standard 211 and bearing the AMCA seal for heating and cooling units.
- V-belt drive package sized 25% over motor nameplate rating.
- U.L. listed single or three phase motor ODP supply fan motor.
- Adjustable motor base for maximum belt life.
- Internal seismic-rated fan/motor isolation with flexible ducting between fan and unit.
- Cabinet constructed of galvanized steel with corrosion-resistant enamel finish.
- Formed galvanized steel channel base and intermediate equipment supports. Suitable for slab or curb mounting.
- Insulated cabinet.
- Supply air, front access, 2" thick, 30% efficient filter section.
- Hinged, double wall, insulated access door.
- Weather resistant, hinged outside air intake louvers and birdscreen.
- Integral control box with non-fused disconnect switch for single point power connection.
- Listed by ETL Testing Laboratories.

OPTIONAL EQUIPMENT

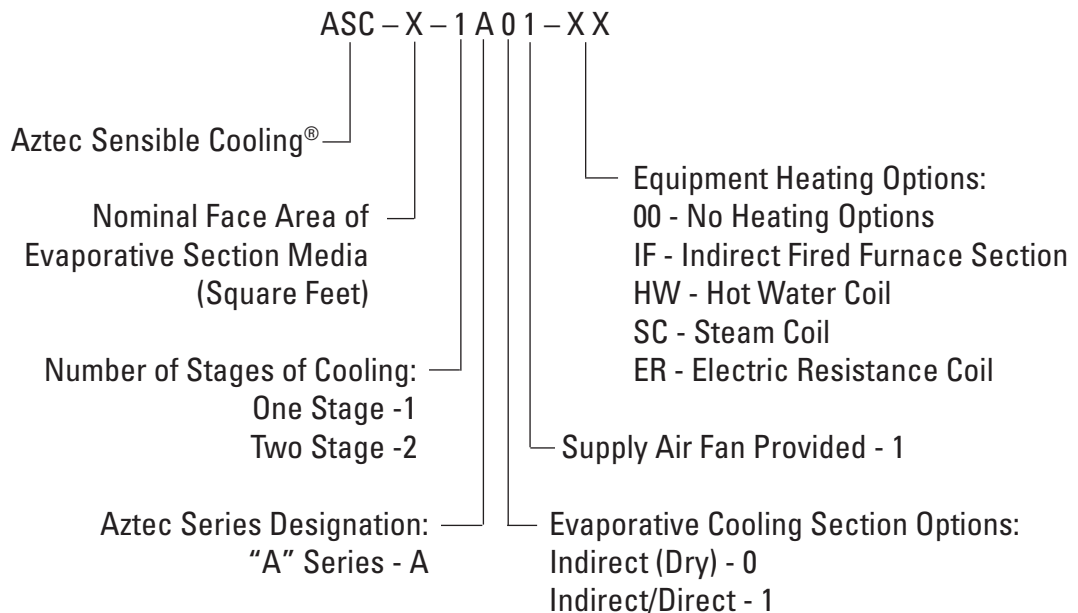
- Remote cooling tower.
- Double wall and roof cabinet construction.
- Mixing section with return and outside air dampers.
- 12" high full perimeter roof curb.
- Hot water or steam heating coil.
- Indirect gas fired heating section.
- Electric resistance heating section.
- Direct expansion or chilled water cooling coil.
- Plenum type supply air fan – Standard with indirect fired heating units.
- Variable frequency motor drives.
- Smoke detector.
- UL labled control panel.

To obtain additional information regarding any of the above options or alternate equipment modifications desired, but not listed, please contact your local Aztec representative or consult the factory.



Internal fan/motor isolation showing seismic-rated isolator.

MODEL DESIGNATION



LEAVING AIR TEMPERATURE PERFORMANCE TABLES

THERMAL PERFORMANCE - INDIRECT EVAPORATIVE COOLING UNITS

EAWB	Entering Air Temperature Dry Bulb Temp. (EADB)															
	80° F		85° F		90° F		95° F		100° F		105° F		110° F		115° F	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
56	62.0	48.2	63.3	46.6	64.5	44.7	65.8	42.6	-	-	-	-	-	-	-	-
58	63.5	51.1	64.8	49.5	66.0	47.5	67.3	46.1	68.5	44.0	-	-	-	-	-	-
60	65.0	54.2	66.3	52.8	67.5	51.0	68.8	49.2	70.0	47.6	71.3	46.0	-	-	-	-
62	66.5	57.1	67.8	55.6	69.0	54.1	70.3	52.2	71.5	50.9	72.8	49.4	74.0	47.6	-	-
64	68.0	59.8	69.3	58.4	70.5	57.1	71.8	55.4	73.0	53.9	74.3	52.6	75.5	50.8	76.8	49.2
66	69.5	62.3	70.8	61.1	72.0	59.6	73.3	58.4	74.5	56.8	75.8	55.5	77.0	54.1	78.3	52.3
68	71.0	65.0	72.3	63.8	73.5	62.3	74.8	61.0	76.0	59.8	77.3	58.4	78.5	57.0	79.8	55.5
70	72.5	67.8	73.8	66.6	75.0	65.1	76.3	63.9	77.5	62.8	78.8	61.4	80.0	60.0	81.3	59.0
72	74.0	71.0	75.3	69.0	76.5	68.0	77.8	66.8	79.0	65.6	80.3	64.4	81.5	63.1	82.8	61.7
74	75.5	72.7	76.8	71.6	78.0	70.5	79.3	69.4	80.5	68.2	81.8	67.1	83.0	66.0	84.3	64.8
76	77.0	74.8	78.3	74.1	79.5	73.0	80.8	71.9	82.0	71.0	83.3	69.9	84.5	68.8	85.8	67.6
78	78.5	77.6	79.8	76.8	81.0	75.8	82.3	74.7	83.5	73.6	84.8	72.5	86.0	71.5	87.3	70.4
80	80.0	80.0	81.3	79.2	82.5	78.2	83.8	77.3	85.0	76.4	86.3	75.5	87.5	74.4	88.8	73.3
82	-	-	82.8	81.5	84.0	80.5	85.3	79.6	86.5	78.8	87.8	77.9	89.0	77.0	90.3	76.2
84	-	-	84.3	83.9	85.5	82.9	86.8	81.9	88.0	81.1	89.3	80.2	90.5	79.3	91.8	78.5

Notes:

1. Indirect evaporative cooling performance is based on 75% saturation efficiency.

THERMAL PERFORMANCE - INDIRECT/DIRECT EVAPORATIVE COOLING UNITS

EAWB	Entering Air Temperature Dry Bulb Temp. (EADB)															
	80° F		85° F		90° F		95° F		100° F		105° F		110° F		115° F	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
56	49.9	48.2	48.6	46.6	47.1	44.7	45.4	42.6	-	-	-	-	-	-	-	-
58	52.6	51.1	51.3	49.5	49.7	47.5	48.6	46.1	46.9	44.0	-	-	-	-	-	-
60	55.5	54.2	54.4	52.8	53.0	51.0	51.5	49.2	50.3	47.6	49.0	46.0	-	-	-	-
62	58.2	57.1	57.1	55.6	55.9	54.1	54.4	52.2	53.4	50.9	52.2	49.4	50.8	47.6	-	-
64	60.8	59.8	59.7	58.4	58.7	57.1	57.4	55.4	56.2	53.9	55.2	52.6	53.8	50.8	52.5	49.2
66	63.2	62.3	62.3	61.1	61.1	59.6	60.2	58.4	58.9	56.8	57.9	55.5	56.8	54.1	55.4	52.3
68	65.7	65.0	64.8	63.8	63.6	62.3	62.7	61.0	61.7	59.8	60.7	58.4	59.6	57.0	58.4	55.5
70	68.4	67.8	67.5	66.6	66.3	65.1	65.4	63.9	64.6	62.8	63.5	61.4	62.4	60.0	61.7	59.0
72	71.4	71.0	69.8	69.0	69.0	68.0	68.1	66.8	67.2	65.6	66.3	64.4	65.3	63.1	64.2	61.7
74	73.0	72.7	72.2	71.6	71.4	70.5	70.6	69.4	69.7	68.2	68.9	67.1	68.0	66.0	67.1	64.8
76	75.1	74.8	74.6	74.1	73.8	73.0	73.0	71.9	72.3	71.0	71.5	69.9	70.7	68.8	69.8	67.6
78	77.7	77.6	77.2	76.8	76.4	75.8	75.6	74.7	74.8	73.6	74.0	72.5	73.2	71.5	72.4	70.4
80	80.0	80.0	79.4	79.2	78.7	78.2	78.1	77.3	77.4	76.4	76.8	75.5	76.0	74.4	75.2	73.3
82	-	-	81.7	81.5	80.9	80.5	80.3	79.6	79.7	78.8	79.1	77.9	78.4	77.0	77.9	76.2
84	-	-	83.9	83.9	83.2	82.9	82.5	81.9	81.9	81.1	81.3	80.2	80.6	79.3	80.1	78.5

Notes:

1. Indirect evaporative cooling performance is based on 75% saturation efficiency.
2. Direct evaporative cooling performance is based on 88% saturation efficiency.

TYPICAL DESIGN CONDITIONS CHART

State	City	DB °F	WB °F	State	City	DB °F	WB °F
AL	Birmingham	95	78	MT	Billings	94	66
AZ	Flagstaff	86	61		Great Falls	91	64
	Phoenix	110	76	NE	Lincoln	97	78
Tucson	105	72	Omaha		96	78	
AR	Fort Smith	99	79	NV	Las Vegas	108	71
	Little Rock	98	80		Reno	95	63
CA	Bakersfield	104	73	NM	Albuquerque, NM	96	65
	Los Angeles	84	70	NY	Albany	88	75
	Sacramento	100	72		Buffalo	86	74
	San Diego	85	73		New York City	89	77
	San Francisco	83	65	NC	Greensboro	92	77
CO	Denver	93	65		Raleigh	94	78
	Grand Junction	97	65	ND	Bismarck	93	74
	Pueblo	98	68		Fargo	91	75
FL	Jacksonville	95	80	OH	Cincinnati	93	78
	Orlando	94	79		Cleveland	89	76
	Pensacola	94	81		Columbus	91	77
GA	Atlanta, GA	94	77	OK	Oklahoma City	99	77
ID	Boise	97	66		Tulsa	100	79
	Coeur d'Alene	91	65	OR	Pendleton	96	67
IL	Chicago	92	79		Portland	91	69
	Decatur	93	79	PA	Philadelphia	93	78
	Rockford	91	78		Pittsburgh	89	75
IN	Evansville	94	79	SC	Columbia	97	78
	Indianapolis	91	78		Greenville	94	77
	South Bend	90	77	SD	Rapid City	95	71
IA	Des Moines	93	78		Sioux Falls	93	77
	Dubuque	89	78	TN	Knoxville	92	77
KS	Salina	101	77		Memphis	96	80
	Wichita	101	77		Nashville	94	78
KY	Bowling Green	93	78	TX	Amarillo	97	71
	Lexington	91	77		Dallas	101	78
	Louisville	93	79		El Paso	101	70
	Paducah	95	80		Houston	97	80
LA	New Orleans	94	81		San Antonio	98	78
	Shreveport	97	80	UT	Salt Lake City	97	67
MI	Detroit	90	77	VA	Richmond	95	79
	Grand Rapids	89	76		Roanoke	92	75
	Saginaw	90	77	WA	Seattle	85	66
MN	Minneapolis	91	77		Spokane	92	65
	Rochester	88	76	WI	Madison	90	77
MO	Kansas City	96	79		Milwaukee	90	77
	Springfield	95	78	WY	Casper	93	63
	St Louis	95	79		Cheyenne	88	63

HEATING CAPACITY CHART

Model	CFM	Furnace Model	Max. BTU/hr Input	Min. BTU/hr Input	Max. Temp Rise	Min. Temp Rise	Press. Drop " W.C.
ASC-5	1500	IFD-160	200,000	6,000	98.3	3.24	0.09
	2000				73.7	2.43	0.17
	2500				59.0	1.95	0.27
ASC-7	2500	IFD-160	200,000	6,000	59.0	1.95	0.27
	3000				49.2	1.62	0.40
	3500				42.1	1.39	0.55
ASC-7	2500	IFD-320	400,000	6,000	98.3	1.62	0.25
	3000				84.3	1.39	0.32
	3500						
ASC-10	3500	IFD-160	200,000	6,000	42.1	1.39	0.55
	4250				34.7	1.15	0.79
	5000				29.5	0.97	1.10
ASC-10	3500	IFD-320	400,000	6,000	84.3	1.39	0.32
	4250				69.4	1.15	0.41
	5000				59.0	0.97	0.50
ASC-15	5000	IFD-320	400,000	6,000	59.0	0.97	0.50
	6250				47.2	0.78	0.68
	7500				39.3	0.65	0.85
ASC-15	5000	IFD-480	600,000	6,000	88.5	0.97	0.29
	6250				70.8	0.78	0.44
	7500				59.0	0.65	0.59
ASC-20	7500	IFD-320	400,000	6,000	39.3	0.65	0.85
	8750				33.7	0.56	1.13
	10,000						
ASC-20	7500	IFD-480	600,000	6,000	59.0	0.65	0.59
	8750				50.6	0.56	0.77
	10,000				44.2	0.49	0.95
ASC-25	10,000	IFD-480	600,000	6,000	44.2	0.49	0.95
	11,250				39.3	0.43	0.84
	12,500				35.4	0.39	0.98
ASC-25	10,000	IFD-800	1,000,000	294,118	73.7	23.0	0.48
	11,250				65.5	20.5	0.55
	12,500				59.0	18.4	0.61
ASC-30	12,500	IFD-480	600,000	6,000	35.4	0.39	0.98
	13,750				32.2	0.35	1.12
	15,000						
ASC-30	12,500	IFD-800	1,000,000	294,118	59.0	18.4	0.61
	13,750				53.6	16.8	0.68
	15,000				49.2	15.4	0.76
ASC-40	15,000	IFD-800	1,000,000	294,118	49.2	15.4	0.76
	17,500				42.1	13.2	0.85
	20,000				36.9	11.5	1.09
ASC-40	15,000	IFD-1120	1,400,000	435,294	68.8	22.7	0.35
	17,500				59.0	19.5	0.44
	20,000				51.6	17.1	0.56
ASC-50	20,000	IFD-1120	1,400,000	435,294	51.6	17.1	0.56
	22,500				45.9	15.2	0.67
	25,000				41.3	13.6	0.84
ASC-60	25,000	IFD-1120	1,400,000	435,294	41.3	13.6	0.84
	27,500				37.5	12.4	1.08
	30,000				34.4	11.4	1.30
ASC-75	30,000	IFD-1120	1,400,000	435,294	34.4	11.3	1.30
	33,750				30.6	10.1	1.60
	37,500						

HEATING SECTION

A solid-state ignition control system which ignites the main burner on models through 320 MBH output, or ignites the pilot on models with 480 MBH output and above, is standard on all gas fired duct furnaces. The main flame and pilot flame (where applicable) are extinguished during each off cycle.

Each gas fired duct furnace is provided with a gas train suitable for a maximum inlet pressure of 0.5 PSIG (14 inches W.C.) on natural gas.

The duct furnace is provided with a power type gas burner complete with integral combustion air blower and motor, and combustion air proving switch. On models with 600 MBH input or less the burner will have individually controlled variable speed combustion air blower motor and motorized gas valve for linkageless design. Larger inputs will have the combustion air damper mechanically interlocked with the gas control valve to insure a proper gas/air mixture throughout the complete range of operation.

HEATING AND COOLING CONTROL OPTIONS

STANDARD CONTROL SYSTEMS WITH DDC CONTROLS

MDT Control System:

Modulating Discharge Air Temperature Control including discharge air sensor mounted in unit discharge with remote mounted potentiometer to enable unit and adjust temperature setpoint, Fan On Light, Burner On Light, and Cool On Light. Additional potentiometer is provided if optional mixing dampers with manual or mixed air control is ordered.

MRT Control System:

Modulating Room Temperature Control including discharge air sensor mounted in unit discharge with remote mounted potentiometer to enable unit and adjust temperature setpoint, Fan On Light, Burner On Light, and Cool On Light. Also includes RS-std room sensor, does not allow remote room setpoint adjustment. Additional potentiometer is provided if optional mixing dampers with manual or mixed air control is ordered.

MRT Expert Control System:

Modulating Room Temperature Control with BACview controller allowing after hours unit enable, room setpoint adjustment, operating feedback, monitoring of alarm status and digital temperature readout including discharge air sensor mounted in unit discharge with remote mounted BACview controller to set space temperature, operating schedules, and optional damper control setpoints. Service information, operating feedback and alarm status can also be monitored. Also includes RS-std room sensor.

MDT Expert Control System:

Modulating Discharge Temperature Control with BACview controller allowing after hours unit enable, operating feedback, and monitoring of alarm status including discharge air sensor mounted in unit discharge with remote mounted BACview controller to set discharge temperature setpoint, and operating schedules. Service information, operating feedback and alarm status can also be monitored.

COOLING ONLY CONTROL OPTIONS

Remote control panel will have Blower "On-Off" Switch and System "Cool-Vent" Switch with "Fan On" and "Cool On" indicating lights. If optional mixed air section with mixed air control is ordered, controller will be mounted in mixing section.

EQUIPMENT DATA CHART

Model	CFM	Face Area/ Media Size	Face Velocity	Indirect Cooling Coil ΔP	Direct Evaporative Cooling Media (12" Deep) ΔP	Indirect Section Exhaust Fan Motor HP	Medium Efficiency 2" Disposable Filters			Supply Air Louver ΔP	Dampers	
							Quantity/Size	Velocity	ΔP		Return Air ΔP	Outside Air ΔP
ASC-5	1500	5.0 30" x 24"	300	0.36	0.08	0.5	2) 16" x 25"	270	0.11	0.06	0.03	0.01
	2000		400	0.53	0.14			360	0.19	0.10	0.05	0.02
	2500		500	0.71	0.21			450	0.29	0.16	0.08	0.02
ASC-7	2500	7.5 36" x 30"	357	0.45	0.12	0.5	4) 16" x 20"	281	0.12	0.08	0.04	0.01
	3000		429	0.58	0.16			338	0.17	0.12	0.06	0.02
	3500		500	0.71	0.21			394	0.23	0.16	0.08	0.02
ASC-10	3500	10.5 42" x 36"	350	0.44	0.11	1.0	2) 20" x 20" 2) 20" x 25"	315	0.15	0.08	0.04	0.01
	4250		425	0.57	0.15			383	0.22	0.12	0.06	0.02
	5000		500	0.71	0.21			450	0.29	0.16	0.08	0.02
ASC-15	5000	15.0 48" x 45"	333	0.41	0.10	2.0	6) 16" x 25"	333	0.17	0.07	0.04	0.01
	6250		417	0.56	0.15			417	0.25	0.11	0.06	0.02
	7500		500	0.71	0.21			500	0.35	0.16	0.08	0.02
ASC-20	7500	20.0 63" x 45"	357	0.50	0.12	2.0	6) 16" x 20" 3) 16" x 25"	346	0.18	0.09	0.05	0.01
	8750		438	0.62	0.17			404	0.24	0.12	0.06	0.02
	10,000		500	0.71	0.21			462	0.31	0.16	0.08	0.02
ASC-25	10,000	25.0 68" x 54"	400	0.51	0.14	3.0	6) 18" x 24" 3) 20" x 24"	353	0.19	0.10	0.05	0.01
	11,250		450	0.60	0.18			397	0.23	0.13	0.06	0.02
	12,500		500	0.71	0.21			441	0.29	0.16	0.08	0.02
ASC-30	12,500	30.0 72" x 60"	417	0.56	0.15	3.0	9) 20" x 25"	400	0.23	0.11	0.06	0.01
	13,750		458	0.63	0.18			440	0.29	0.13	0.07	0.02
	15,000		500	0.71	0.21			480	0.34	0.16	0.08	0.02
ASC-40	15,000	42.0 84" x 72"	375	0.50	0.12	5.0	9) 16" x 25" 6) 20" x 25"	327	0.16	0.09	0.05	0.01
	17,500		438	0.62	0.17			382	0.22	0.12	0.06	0.02
	20,000		500	0.71	0.21			436	0.28	0.16	0.08	0.02
ASC-50	20,000	50.0 102" x 72"	400	0.53	0.14	7.5	9) 16" x 25" 9) 20" x 25"	400	0.23	0.10	0.05	0.01
	22,500		450	0.60	0.18			450	0.29	0.13	0.06	0.02
	25,000		500	0.71	0.21			500	0.35	0.16	0.08	0.02
ASC-60	25,000	60.0 102" x 87"	417	0.56	0.15	7.5	21) 18" x 25"	381	0.22	0.11	0.06	0.01
	27,500		458	0.63	0.18			419	0.26	0.13	0.07	0.02
	30,000		500	0.71	0.21			457	0.30	0.16	0.08	0.02
ASC-75	30,000	75.0 103" x 105"	400	0.53	0.14	10.0	24) 18" x 25"	384	0.22	0.10	0.05	0.01
	33,750		450	0.60	0.18			432	0.28	0.13	0.06	0.02
	37,500		500	0.71	0.21			480	0.34	0.16	0.08	0.02

ELECTRIC DATA (AMP DRAW)

To find approximate total amp draw for system:

Step 1 – Select supply fan motor HP from tables. See table for approximate HP amps.

Step 2 – Find indirect exhaust fan HP from table above.

Step 3 – Find control amps from chart shown at right for appropriate model and series.

Step 4 – Add amp draws from steps 1-3 to get total system amp draw.

EXAMPLE:

Step 1 – Select ASC-25-2A11 with FC fan for 12,500 CFM @ 2" total static pressure. Go to Blower Performance Chart. This shows a 10 HP motor is required. Find 10 HP on the table shown at right. Amp draw is 13.4 for 460V.

Step 2 – As shown on the chart above, ASC-25 has a 3 HP exhaust fan. Find 3 HP on the table shown at right. Amp draw is 4.2.

Step 3 – Find control amps for ASC-25-2A11 from the chart shown at right. Amp draw is 6.5.

Step 4 – 13.4 + 4.2 + 6.5 = 24.1 Total System Amps.

Motor HP (Amps)

HP	.5	.75	1.0	1.5	2.0	3.0	5.0	7.5
Amps	1.0	1.5	1.7	2.8	3.0	4.2	6.8	10.0
HP	10.0	15.0	20.0	25.0	30.0	40.0	50.0	60.0
Amps	13.4	20.3	24.0	31.0	36.0	49.0	60.0	72.0

Controls (Amps)

Series	Model Size	Amps	Series	Model Size	Amps
1A01	ASC-5 – ASC-50	3.3	2A11	ASC-5 – ASC-50	6.5
	ASC-60	6.5		ASC-60	10.9
	ASC-75	6.5		ASC-75	10.9

Note: Typical amps shown above are based on 460V, 3PH power supply. For 230V, 3PH power supply, multiply above amps x 2.0. For 208V, 3PH power supply, multiply above amps x 2.2.

Control Systems

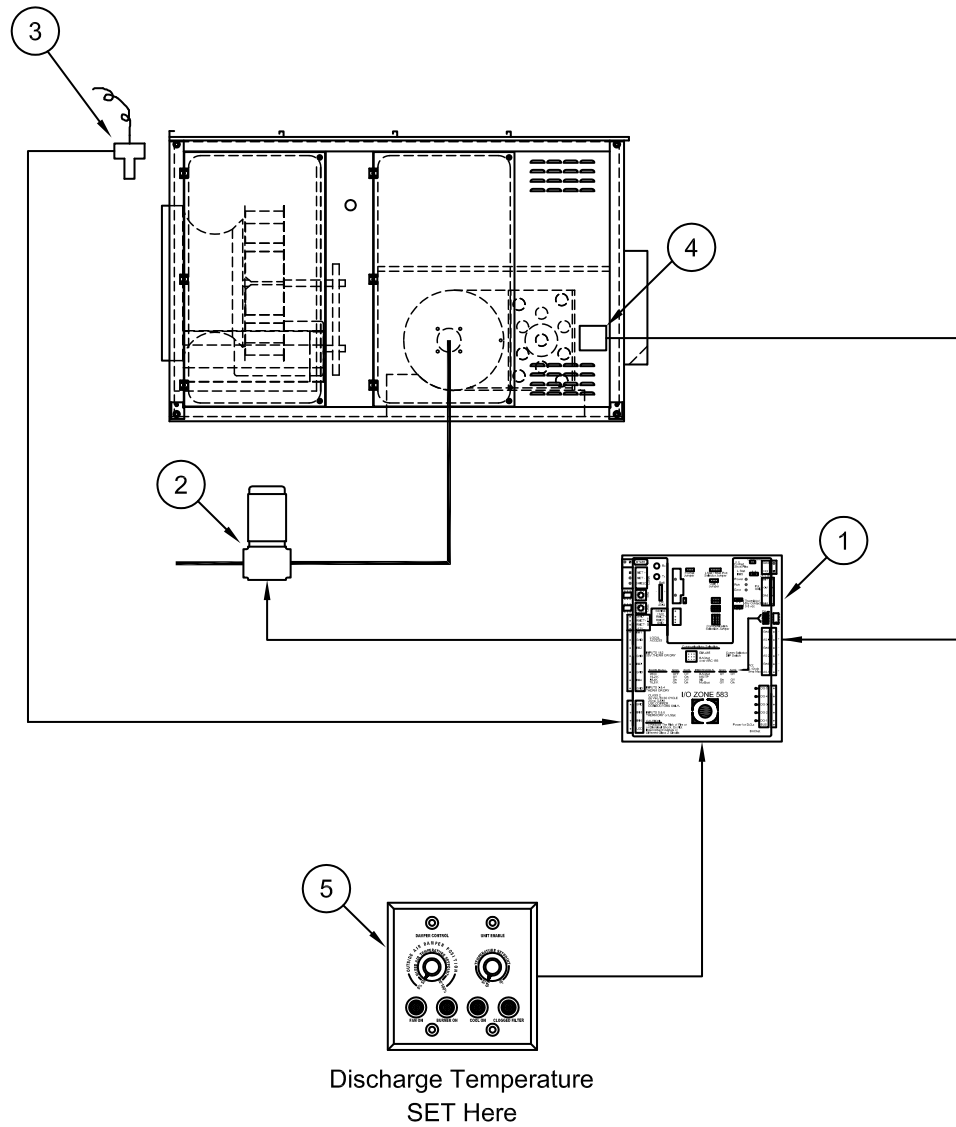
MDT Control System

C000673

Application:	Includes:
Modulating Discharge Temperature Control	Discharge air sensor (4) mounted in unit discharge with remote mounted 3 gang box cover (5) including manual potentiometer to enable unit and adjust temperature setpoint, Fan On Light, Burner On Light, and Cool On Light. Additional potentiometer is provided if optional return damper section for manual or mixed air control is ordered.

COMPONENT I.D.

- 1. Unit DDC Controller
- 2. Modulating Gas Valve
- 3. Inlet Air Sensor
- 4. Discharge Air Sensor
- 5. Remote Control Station



Control Systems

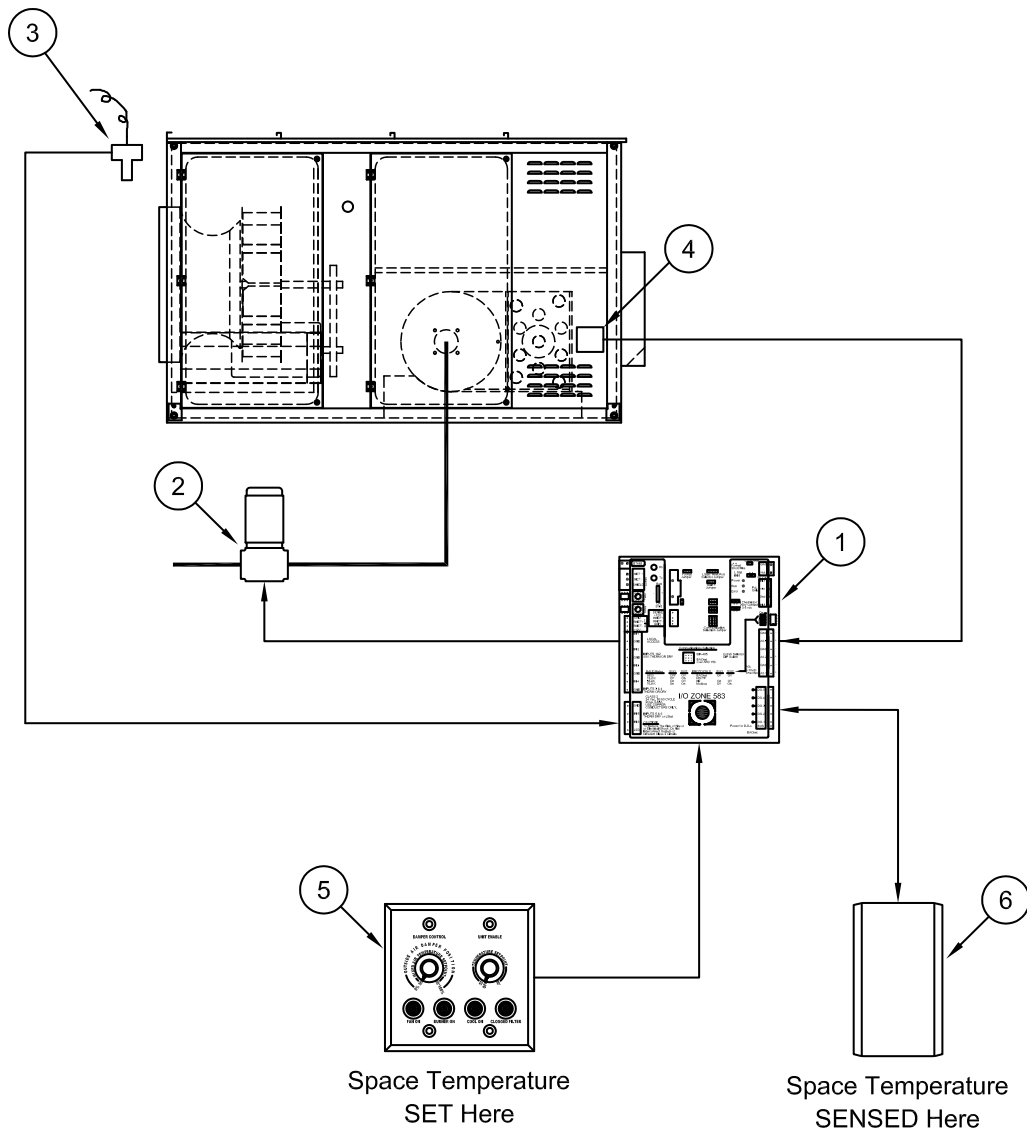
MRT Control System

C000674

Application:	Includes:
Modulating Room Temperature Control	Discharge air sensor (4) mounted in unit discharge with remote mounted 3 gang box cover (5) including manual potentiometer to enable unit and adjust temperature setpoint, Fan On Light, Burner On Light, and Cool On Light. Also includes RS-std room sensor (6) (does not allow remote room setpoint adjustment). Additional potentiometer is provided if optional return damper section for manual or mixed air control is ordered.

COMPONENT I.D.

- | | | |
|-------------------------|-------------------------|---------------------------|
| 1. Unit DDC Controller | 3. Inlet Air Sensor | 5. Remote Control Station |
| 2. Modulating Gas Valve | 4. Discharge Air Sensor | 6. Room Thermostat |



Control Systems

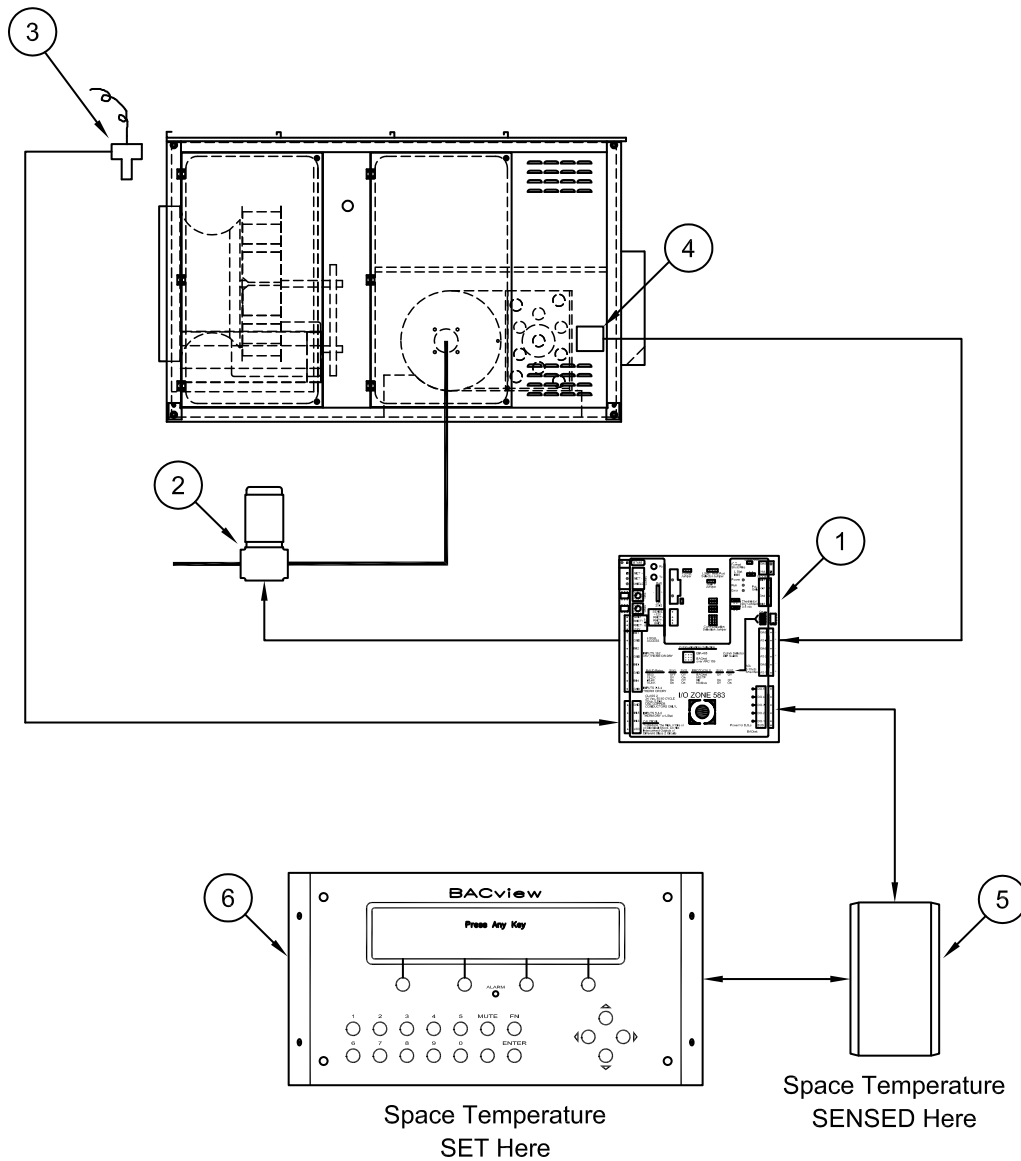
MRT Expert Control Systems

C000675

<p>Application:</p>	<p>Includes:</p>
<p>Modulating Room Temperature Control with BACView controller allowing after hours unit enable, room setpoint adjustment, operating feedback, monitoring of alarm status and digital temperature readout with RS-std room sensor.</p>	<p>Discharge air sensor (4) mounted in unit discharge with remote mounted BACView controller (6) to set space temp, operating schedules, and optional damper control setpoints. Service information, operating feedback and alarm status can also be monitored. Also includes a RS-std room sensor (5).</p>

COMPONENT I.D.

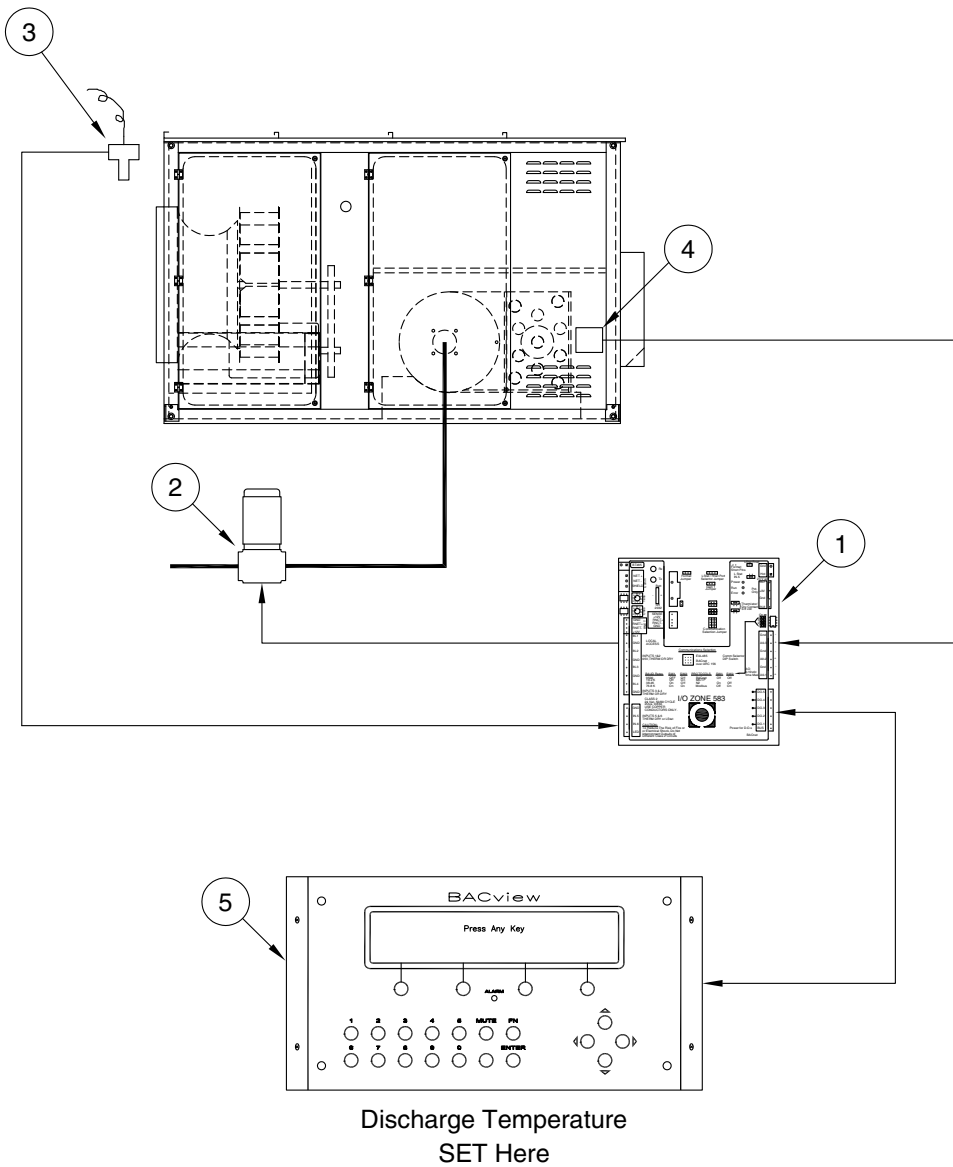
- | | | |
|-------------------------|-------------------------|----------------------|
| 1. Unit DDC Controller | 3. Inlet Air Sensor | 5. Room Thermostat |
| 2. Modulating Gas Valve | 4. Discharge Air Sensor | 6. BACView Interface |



<p>Application:</p>	<p>Includes:</p>
<p>Modulating Discharge Temperature Control with BACView controller allowing after hours unit enable, operating feedback, and monitoring of alarm status.</p>	<p>Discharge air sensor (4) mounted in unit discharge with remote mounted BACView controller (5) to set discharge temperature setpoint and operating schedules. Service information, operating feedback, and alarm status can also be monitored.</p>

COMPONENT I.D.

- 1. Unit DDC Controller
- 3. Inlet Air Sensor
- 5. BACView Interface
- 2. Modulating Gas Valve
- 4. Discharge Air Sensor



BLOWER PERFORMANCE CHART

COOLING ONLY UNITS WITH FC WHEELS

SUPPLY AIR FAN PERFORMANCE TABLE AT STANDARD CONDITIONS

RPM – Motor Horsepower																	
TSP – System Total Static Pressure (Inches W.C.)																	
Model	CFM	FPM Outlet Velocity	Fan Size	1.0		1.25		1.50		1.75		2.0		2.5		3.0	
				RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP
ASC-5	1500	1794	9"	1136	3/4	1253	1	1367	1	—	—	—	—	—	—	—	—
	2000	2392		1206	1-1/2	1312	1-1/2	1411	1-1/2	1505	1-1/2	1595	2	1766	2	—	—
	2500	2990		—	—	1397	2	1486	2	1572	2	1656	3	1812	3	1957	3
ASC-7	2500	1736	12"	815	1	904	1-1/2	988	1-1/2	1067	1-1/2	—	—	—	—	—	—
	3000	2083		836	1-1/2	919	1-1/2	997	2	1071	2	1142	2	1275	3	—	—
	3500	2430		867	2	943	2	1016	3	1085	3	1152	3	1278	3	—	—
ASC-10	3500	1741	15"	671	1-1/2	745	1-1/2	815	2	—	—	—	—	—	—	—	—
	4250	2114		688	2	758	2	822	3	882	3	941	3	—	—	—	—
	5000	2487		709	3	776	3	838	3	896	3	951	5	1054	5	1152	5
ASC-15	5000	1742	18"	585	2	649	3	707	3	761	3	—	—	—	—	—	—
	6250	2177		604	3	663	3	719	5	771	5	820	5	912	5	—	—
	7500	2613		631	5	686	5	738	5	787	5	834	7-1/2	921	7-1/2	1003	7-1/2
ASC-20	7500	1785	20"	505	3	556	5	604	5	651	5	—	—	—	—	—	—
	8750	2083		524	5	570	5	614	5	657	5	698	7-1/2	—	—	—	—
	10,000	2380		548	5	590	5	630	7-1/2	669	7-1/2	708	7-1/2	782	10	853	10
ASC-25	10,000	1960	22"	476	5	519	5	560	5	601	7-1/2	640	7-1/2	—	—	—	—
	11,250	2205		494	5	534	7-1/2	572	7-1/2	609	7-1/2	645	7-1/2	716	10	858	10
	12,500	2450		514	7-1/2	551	7-1/2	587	7-1/2	622	10	655	10	721	10	784	15
ASC-30	12,500	1862	25"	398	5	439	5	477	7-1/2	515	7-1/2	—	—	—	—	—	—
	13,750	2049		406	5	444	7-1/2	481	7-1/2	516	7-1/2	550	10	—	—	—	—
	15,000	2235		415	7-1/2	451	7-1/2	486	7-1/2	520	10	552	10	615	15	—	—
ASC-40	15,000	2235	25"	415	7-1/2	451	7-1/2	486	7-1/2	520	10	552	10	615	15	—	—
	17,500	2608		437	7-1/2	470	10	502	10	532	10	562	15	620	15	675	20
	20,000	2980		—	—	492	15	522	15	551	15	578	15	631	20	682	20
ASC-50	20,000	2478	27"	381	10	412	10	441	10	470	15	498	15	553	15	—	—
	22,500	2788		—	—	427	15	455	15	481	15	507	15	557	20	606	20
	25,000	3097		—	—	—	—	471	15	495	20	520	20	566	20	612	25
ASC-60	25,000	2688	30"	356	10	384	15	411	15	436	15	461	15	510	20	556	25
	27,500	2956		—	—	396	15	421	15	446	20	469	20	515	25	559	25
	30,000	3225		—	—	—	—	433	20	456	20	479	25	522	25	564	30
ASC-75	30,000	2486	33"	328	15	353	15	376	20	399	20	422	20	465	25	508	25
	33,750	2800		—	—	367	20	390	20	411	25	432	25	472	30	511	30
	37,500	3112		—	—	—	—	404	25	425	25	444	30	482	40	518	40

* Indicates Class II Wheel

NOTES:

1. FC = Forward curved fan blade, MHP = Motor Horse Power
2. Fans are double width, double inlet (DWDI).
3. Equipment can be supplied with CFM different from those stated, contact factory for selection and pricing.
4. The selections shown are based on system Total Static Pressure. To find the system Total Static Pressure: add supply duct static, return duct static, and applicable components from Internal Resistance Chart on pages 5 and 6.

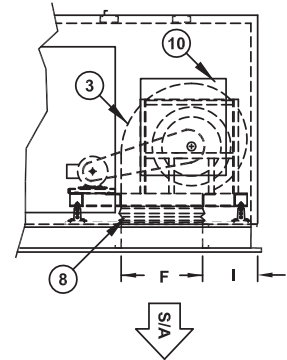
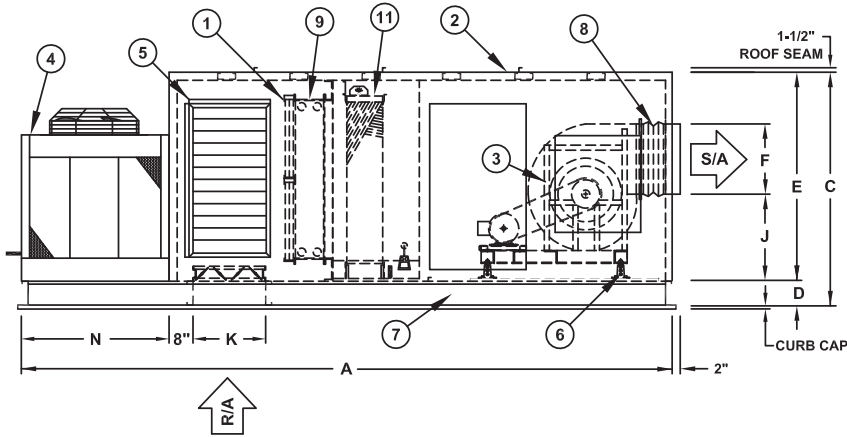
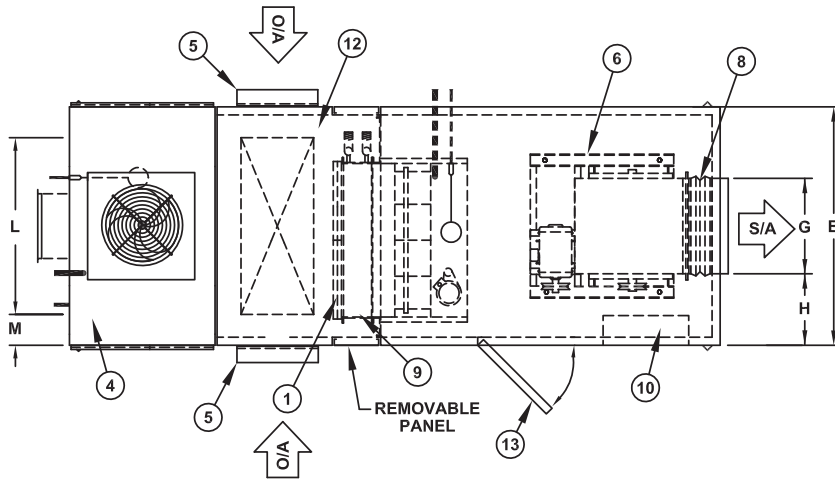
DIMENSIONAL DATA

COOLING ONLY UNITS WITH FC WHEELS

AZTEC '1A01' AND '2A11' SERIES WITH OPTIONAL MIXING BOX SECTION

C000417B

- ① 2" THICK FILTER SECTION
- ② HEAVY GAUGE ROOF AND WALL PANELS
- ③ SUPPLY FAN FC, DWDI
- ④ INTEGRAL COOLING TOWER
- ⑤ HINGED, SUPPLY AIR INLET LOUVER FOR FILTER ACCESS
- ⑥ SEISMIC RATED, SPRING ISOLATION
- ⑦ UNIT BASE
- ⑧ FLEX CONNECTION
- ⑨ INDIRECT COOLING COIL
- ⑩ ELECTRICAL CONTROL BOX
- ⑪ STAINLESS STEEL DIRECT EVAPORATIVE COOLING SECTION (2A11 SERIES ONLY)
- ⑫ MIXING SECTION (OPTIONAL)
- ⑬ HINGED, DOUBLE WALL INSULATED ACCESS DOOR



		Model										
		ASC-5	ASC-7	ASC-10	ASC-15	ASC-20	ASC-25	ASC-30	ASC-40	ASC-50	ASC-60	ASC-75
Unit Shipping Weight (lbs)	1A01	2,020	2,320	2,685	3,730	4,645	5,530	5,720	7,145	8,550	9,895	11,475
	2A11	2,220	2,550	2,940	4,040	5,025	5,960	6,155	7,675	9,140	10,560	12,210
Unit Operating Weight (lbs)	1A01	2,300	2,655	3,115	4,360	5,375	6,365	6,685	8,500	10,290	11,690	13,370
	2A11	2,625	3,045	3,565	4,895	6,055	7,135	7,490	9,485	11,430	12,945	14,750

AZTEC COOLING ONLY UNITS WITH FC WHEELS

MODEL	DIMENSIONS						
	A		B	C	D	E	F
	1A01	2A11					
ASC-5	127	152	52	42-1/2	6	36-1/2	10-1/4
ASC-7	132	157	56	48-1/2	6	42-1/2	13-1/2
ASC-10	144	169	64	55-1/2	8	47-1/2	15-7/8
ASC-15	162	187	71	66-1/2	8	58-1/2	18-7/8
ASC-20	175	200	84	66-1/2	8	58-1/2	24-3/4
ASC-25	185	210	89	74-1/2	8	66-1/2	27-1/4
ASC-30	185	210	92	80-1/2	8	72-1/2	31-1/4
ASC-40	207	232	106	92-1/2	8	84-1/2	31-1/4
ASC-50	226	251	123	92-1/2	8	84-1/2	34-1/4
ASC-60	239	264	123	107-1/2	8	99-1/2	36-3/4
ASC-75	263	288	123	125-1/2	8	117-1/2	43

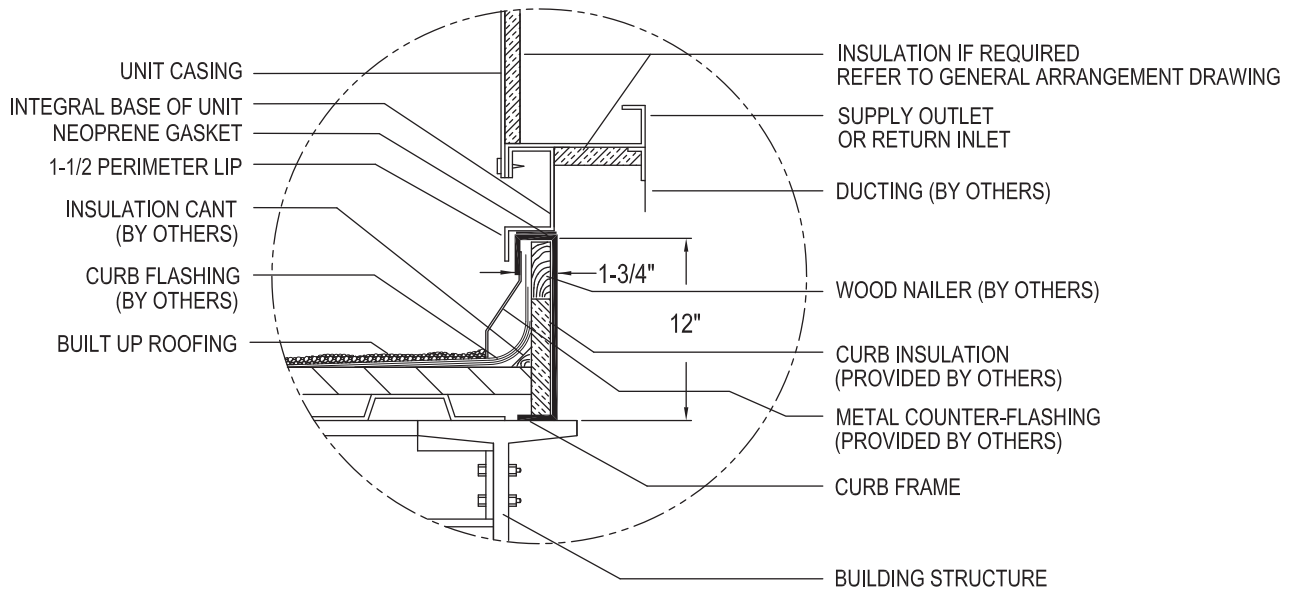
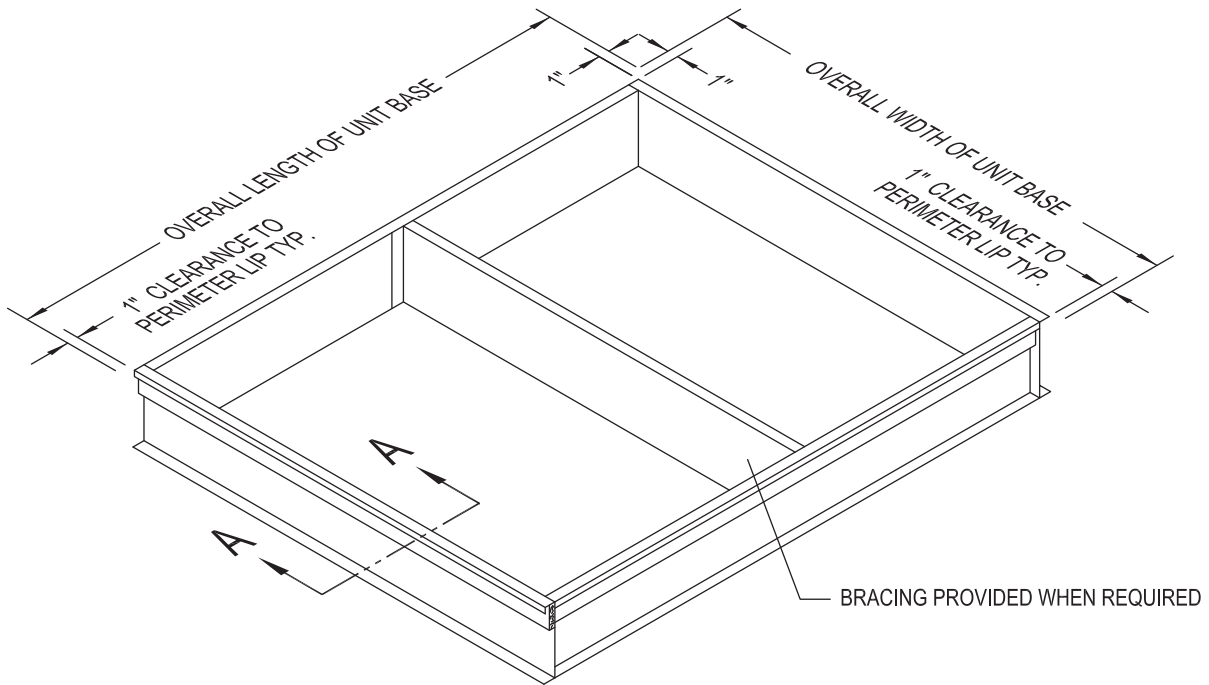
MODEL	DIMENSIONS							
	G	H	I	J	K	L	M	N
ASC-5	11-7/8	20-1/16	11-1/4	13-1/8	11-1/2	23-1/2	14-1/4	32
ASC-7	15-7/8	20-1/16	12-7/8	16	13-1/2	29-1/2	13-1/4	32
ASC-10	18-7/8	22-9/16	14-3/8	17-1/2	17-1/2	35-1/2	14-1/4	36
ASC-15	22	24-1/2	16-3/8	19-1/2	19-1/2	43-1/2	13-3/4	48
ASC-20	25	29-1/2	17	24-1/8	23-1/2	49-1/2	17-1/4	45
ASC-25	27-1/2	30-3/4	18-1/8	25-1/4	29-1/2	49-1/2	19-3/4	48
ASC-30	31-3/8	30-5/16	19-3/8	26-1/2	32-1/2	53-1/2	19-1/4	48
ASC-40	31-3/8	37-5/16	19-3/8	26-1/2	35-1/2	65-1/2	20-1/4	60
ASC-50	34-3/8	44-5/16	21-1/8	28-1/4	37-1/2	79-1/2	21-3/4	66
ASC-60	36-7/8	43-1/16	22-1/2	29-5/8	37-1/2	95-1/2	13-3/4	72
ASC-75	39-7/8	41-9/16	20-1/2	27-5/8	39-1/2	110-1/2	6-1/4	78

NOTE: All dimensions in inches subject to manufacturing tolerances.

Dimensional Data

Roof Curb

C000525



ROOF CURB DETAIL

C000525

PLENUM FAN PERFORMANCE CHART COOLING/HEATING UNITS WITH AF-PF WHEELS

SUPPLY AIR FAN PERFORMANCE TABLE AT STANDARD CONDITIONS

		RPM - Motor Horsepower TSP - system Total Static Pressure (Inches W.C.)														
MODEL	CFM	Fan Size	2.0		2.25		2.5		3.0		3.5		4.0		5.0	
			RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP	RPM	MHP
ASC-5	1500	150	1978	1	2057	1-1/2	2135	1-1/2	2296	1-1/2	2467	2	2638	2	2951	3
	2000		2221	1-1/2	2293	1-1/2	2364	2	2500	2	2624	3	2742	3	2978	3
	2500		2499	2	2562	2	2624	2	2746	3	2863	3	2976	3	*3188	5
ASC-7	2500	182	1420	1-1/2	1495	2	1568	2	1708	3	1841	3	1969	3	2207	5
	3000		1474	2	1541	2	1606	2	1734	3	1857	3	1976	5	2201	5
	3500		1551	2	1609	3	1668	3	1783	3	1896	5	2005	5	2215	5
ASC-10	3500	200	1335	2	1397	3	1458	3	1577	3	1691	5	1800	5	2008	7-1/2
	4250		1421	3	1474	3	1527	3	1631	5	1733	5	1833	5	2023	7-1/2
	5000		1529	3	1577	3	1623	5	1714	5	1804	5	1892	7-1/2	2066	7-1/2
ASC-15	5000	222	1231	3	1281	3	1329	5	1422	5	1512	5	1600	7-1/2	1769	7-1/2
	6250		1349	5	1393	5	1436	5	1519	5	1599	7-1/2	1675	7-1/2	1823	10
	7500		1486	5	1524	5	1562	5	1636	7-1/2	1709	7-1/2	1779	7-1/2	*1913	10
ASC-20	7500	245	1236	5	1274	5	1311	5	1383	7-1/2	1453	7-1/2	1521	7-1/2	1651	10
	8750		1341	5	1377	7-1/2	1411	7-1/2	1478	7-1/2	1542	7-1/2	1604	10	1723	15
	10000		1454	7-1/2	1487	7-1/2	1519	7-1/2	1581	10	1641	10	1699	10	*1809	15
ASC-25	10000	270	1178	7-1/2	1211	7-1/2	1243	7-1/2	1308	7-1/2	1370	10	1432	10	1549	15
	11250		1262	7-1/2	1292	7-1/2	1321	7-1/2	1380	10	1437	10	1494	15	*1604	15
	12500		1349	7-1/2	1378	10	1405	10	1459	10	1512	15	*1564	15	*1666	15
ASC-30	12500	300	1066	7-1/2	1097	7-1/2	1127	10	1185	10	1241	15	1295	15	1399	15
	13750		1125	7-1/2	1154	10	1182	10	1237	10	1290	15	1341	15	*1440	20
	15000		1186	10	1214	10	1240	10	1292	15	1342	15	1391	15	*1485	20
ASC-40	15000	330	965	10	993	10	1020	10	1073	15	1124	15	1174	15	1269	20
	17500		1055	10	1080	15	1104	15	1153	15	1199	15	1245	20	*1332	25
	20000		1148	15	1172	15	1195	15	1239	20	*1282	20	*1324	20	*1405	25
ASC-50	20000	402	729	10	753	15	776	15	822	15	866	20	907	20	988	25
	22500		774	15	796	15	817	15	860	20	901	20	941	25	1016	30
	25000		824	15	843	15	863	20	901	20	940	25	978	25	*1050	30
ASC-60	25000	445	666	15	688	15	709	15	750	20	789	25	826	25	897	30
	27500		700	15	720	15	739	20	778	20	815	25	851	25	919	40
	30000		737	20	755	20	773	20	808	25	843	25	878	30	944	40
ASC-75	30000	490	602	15	622	20	641	20	678	25	714	25	748	30	813	40
	33750		640	20	658	20	675	20	710	25	744	30	776	40	837	40
	37500		682	20	698	25	714	25	745	30	776	30	807	40	*866	50

*Indicates Class II Wheel

NOTES:

1. AF-PF = Air Foil Plenum Fan, MHP = Motor Horsepower
2. Fans are Single width, single inlet (SWSI)
3. Equipment can be supplied with CFM different from those stated, contact factory for selection and pricing.
4. The selections above are based on Total Static Pressure. To find the system Total Static Pressure: add supply duct static, return duct static, and applicable components from Internal Resistance Chart on pages 5 and 6.

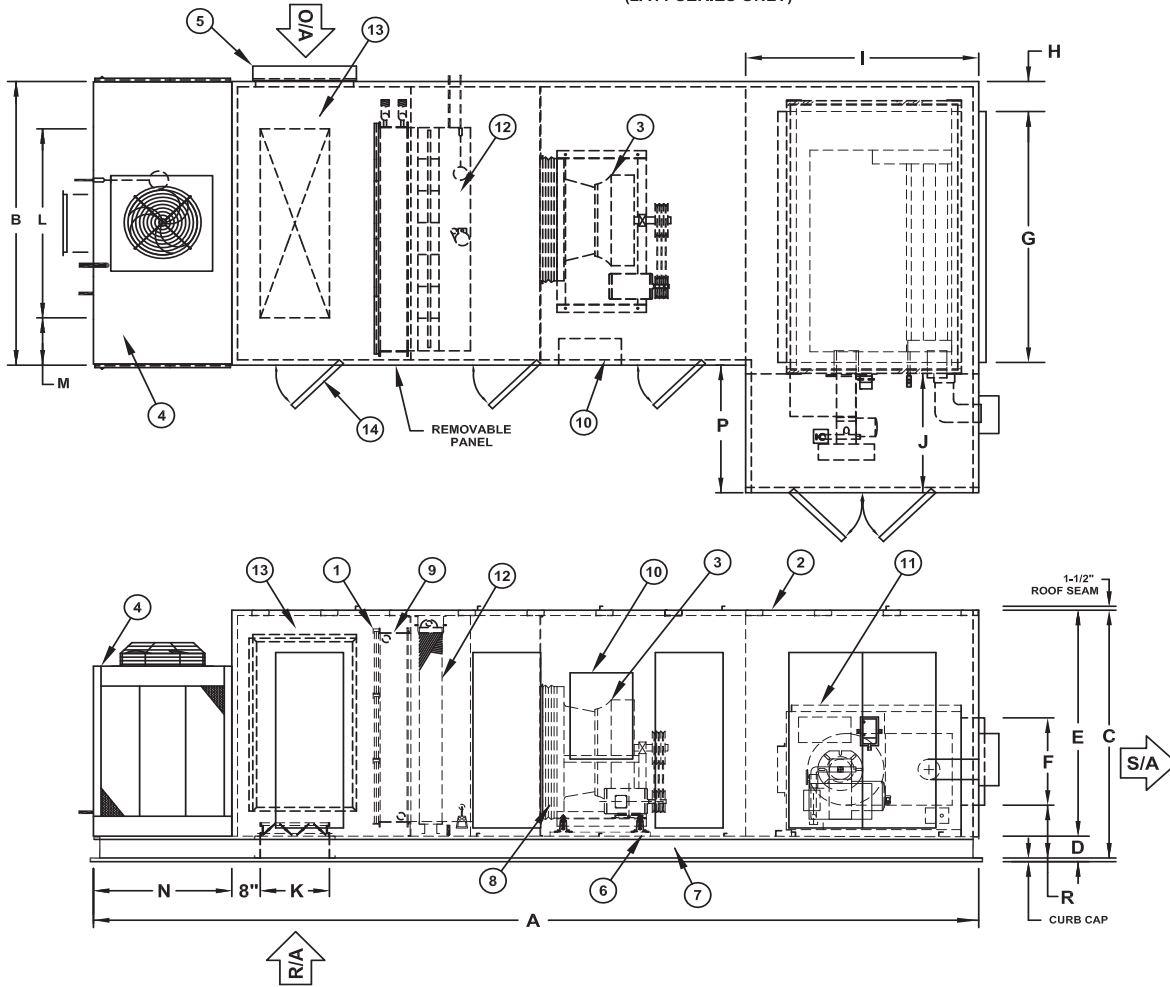
DIMENSIONAL DATA

COOLING/HEATING UNITS WITH STRAIGHT DISCHARGE

AZTEC "1A01 AND 2A11" SERIES WITH OPTIONAL PLENUM FAN, MIXING BOX SECTION AND INDIRECT FIRED FURNACE

C000438B

- ① 2" THICK FILTER SECTION
- ② HEAVY GAUGE ROOF AND WALL PANELS
- ③ PLENUM FAN
- ④ INTEGRAL COOLING TOWER
- ⑤ HINGED, SUPPLY AIR INLET LOUVER FOR FILTER ACCESS
- ⑥ SEISMIC RATED, SPRING ISOLATION
- ⑦ UNIT BASE
- ⑧ FLEX CONNECTION
- ⑨ INDIRECT COOLING COIL
- ⑩ ELECTRICAL CONTROL BOX
- ⑪ INDIRECT-GAS FIRED FURNACE
- ⑫ STAINLESS STEEL DIRECT EVAPORATIVE COOLING SECTION (2A11 SERIES ONLY)
- ⑬ MIXING SECTION (OPTIONAL)
- ⑭ HINGED, DOUBLE WALL INSULATED ACCESS DOOR



		Model										
		ASC-5	ASC-7	ASC-10	ASC-15	ASC-20	ASC-25	ASC-30	ASC-40	ASC-50	ASC-60	ASC-75
Unit Shipping Weight (lbs)	1A01	3,075	3,450	4,165	5,460	7,095	8,035	8,820	10,850	13,065	14,255	15,680
	2A11	3,275	3,680	4,420	5,770	7,475	8,465	9,255	11,380	13,655	14,920	16,415
Unit Operating Weight (lbs)	1A01	3,355	3,785	4,595	6,090	7,825	8,870	9,785	12,205	14,805	16,050	17,655
	2A11	3,680	4,175	5,045	6,625	8,505	9,640	10,590	13,190	15,945	17,305	19,040

AZTEC COOLING/HEATING UNITS WITH STRAIGHT DISCHARGE

MODEL	FURNACE SIZE	DIMENSIONS								
		A		B	C	D	E	F	G	H
		1A01	2A11							
ASC-5	IFD-160	194	219	52	42-1/2	6	36-1/2	16	46	5
ASC-7	IFD-160	210	235	56	48-1/2	6	42-1/2	16	46	5
ASC-7	IFD-320	210	235	56	48-1/2	6	42-1/2	20	54	5
ASC-10	IFD-160	220	245	64	55-1/2	8	47-1/2	16	46	9
ASC-10	IFD-320	220	245	64	55-1/2	8	47-1/2	20	54	5
ASC-15	IFD-320	237	262	71	66-1/2	8	58-1/2	20	54	8-1/2
ASC-15	IFD-480	237	262	71	66-1/2	8	58-1/2	20	70	5
ASC-20	IFD-320	249	274	84	66-1/2	8	58-1/2	20	54	15
ASC-20	IFD-480	249	274	84	66-1/2	8	58-1/2	20	70	7
ASC-25	IFD-480	270	295	89	74-1/2	8	66-1/2	20	70	9-1/2
ASC-25	IFD-800	270	295	89	74-1/2	8	66-1/2	20	79	5
ASC-30	IFD-480	277	302	92	80-1/2	8	72-1/2	20	70	11
ASC-30	IFD-800	277	302	92	80-1/2	8	72-1/2	20	79	6-1/2
ASC-40	IFD-800	311	336	106	92-1/2	8	84-1/2	20	79	13-1/2
ASC-40	IFD-1120	311	336	106	92-1/2	8	84-1/2	30	82	12
ASC-50	IFD-1120	319	344	123	92-1/2	8	84-1/2	30	82	20-1/2
ASC-60	IFD-1120	330	355	123	107-1/2	8	99-1/2	30	82	20-1/2
ASC-75	IFD-1120	358	383	123	125-1/2	8	117-1/2	30	82	20-1/2

MODEL	FURNACE SIZE	DIMENSIONS							
		I	J	K	L	M	N	P	R
ASC-5	IFD-160	40	21-7/8	11-1/2	23-1/2	14-1/4	32	22-7/8	10-1/4
ASC-7	IFD-160	52	29-7/8	13-1/2	29-1/2	13-1/4	32	26-7/8	10-1/4
ASC-7	IFD-320	52	21-7/8	13-1/2	29-1/2	13-1/4	32	26-7/8	12-5/16
ASC-10	IFD-160	52	25-7/8	17-1/2	35-1/2	14-1/4	36	18-7/8	12-1/4
ASC-10	IFD-320	52	21-7/8	17-1/2	35-1/2	14-1/4	36	18-7/8	14-5/16
ASC-15	IFD-320	52	34-3/8	19-1/2	43-1/2	13-3/4	48	27-7/8	14-5/16
ASC-15	IFD-480	52	21-7/8	19-1/2	43-1/2	13-3/4	48	27-7/8	15-5/16
ASC-20	IFD-320	52	29-7/8	23-1/2	49-1/2	17-1/4	45	16-7/8	14-5/16
ASC-20	IFD-480	52	21-7/8	23-1/2	49-1/2	17-1/4	45	16-7/8	15-5/16
ASC-25	IFD-480	59	30-1/2	29-1/2	49-1/2	19-3/4	48	23	15-5/16
ASC-25	IFD-800	59	26	29-1/2	49-1/2	19-3/4	48	23	20-5/16
ASC-30	IFD-480	59	30-1/2	32-1/2	53-1/2	19-1/4	48	21-1/2	15-5/16
ASC-30	IFD-800	59	26	32-1/2	53-1/2	19-1/4	48	21-1/2	20-5/16
ASC-40	IFD-800	69	32-1/16	35-1/2	65-1/2	20-1/4	60	20-9/16	20-5/16
ASC-40	IFD-1120	69	30-9/16	35-1/2	65-1/2	20-1/4	60	20-9/16	20-5/16
ASC-50	IFD-1120	69	30-9/16	37-1/2	79-1/2	21-3/4	66	12-1/16	20-5/16
ASC-60	IFD-1120	69	30-9/16	37-1/2	95-1/2	13-3/4	72	12-1/16	20-5/16
ASC-75	IFD-1120	69	30-9/16	39-1/2	111	6	78	12-1/16	20-5/16

NOTE: All dimensions in inches subject to manufacturing tolerances.

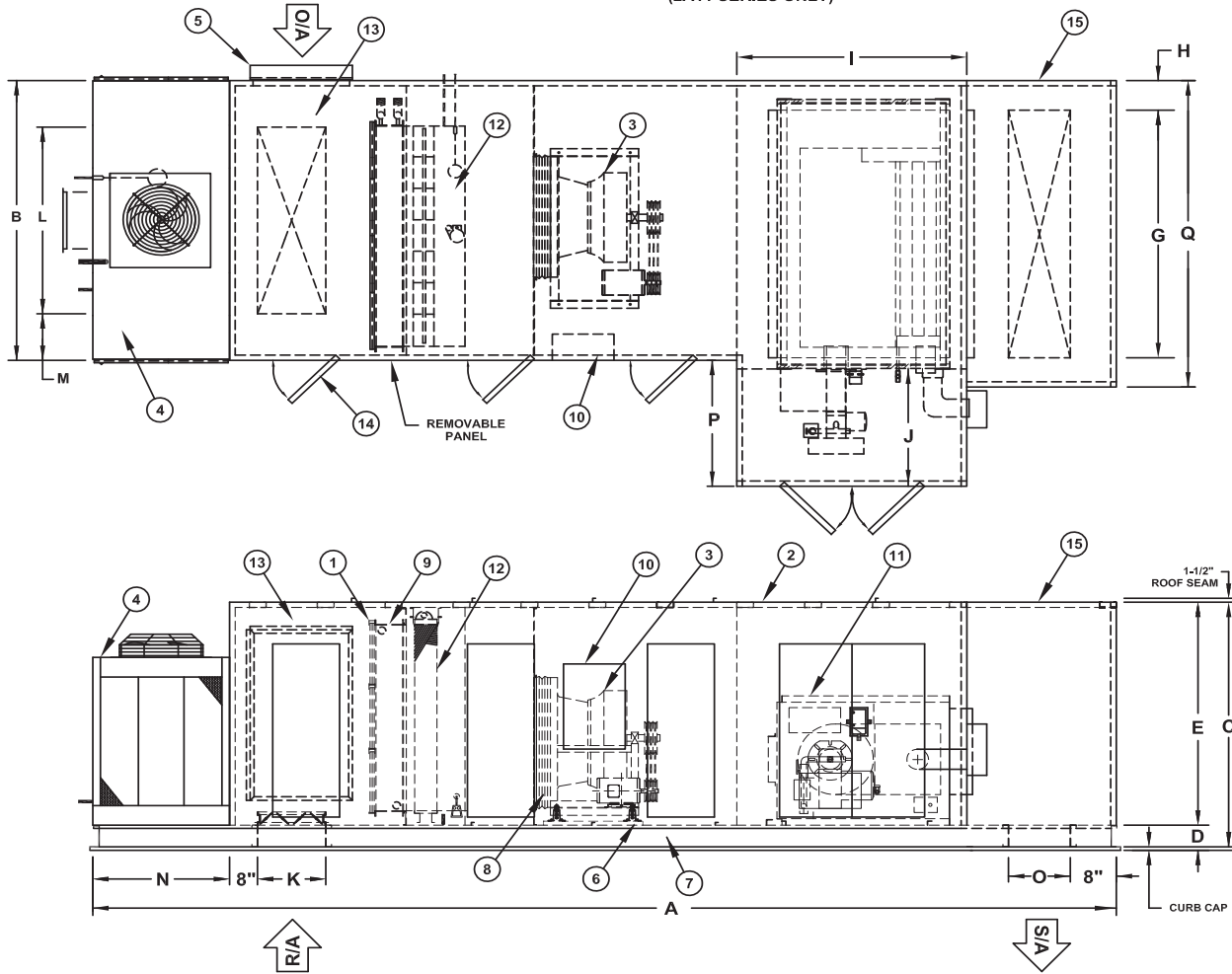
DIMENSIONAL DATA

COOLING/HEATING UNITS WITH BOTTOM DISCHARGE

AZTEC "1A01 AND 2A11" SERIES WITH OPTIONAL PLENUM FAN, MIXING BOX SECTION AND INDIRECT FIRED FURNACE

C000722

- ① 2" THICK FILTER SECTION
- ② HEAVY GAUGE ROOF AND WALL PANELS
- ③ PLENUM FAN
- ④ INTEGRAL COOLING TOWER
- ⑤ HINGED, SUPPLY AIR INLET LOUVER FOR FILTER ACCESS
- ⑥ SEISMIC RATED, SPRING ISOLATION
- ⑦ UNIT BASE
- ⑧ FLEX CONNECTION
- ⑨ INDIRECT COOLING COIL
- ⑩ ELECTRICAL CONTROL BOX
- ⑪ INDIRECT-GAS FIRED FURNACE
- ⑫ STAINLESS STEEL DIRECT EVAPORATIVE COOLING SECTION (2A11 SERIES ONLY)
- ⑬ MIXING SECTION (OPTIONAL)
- ⑭ HINGED, DOUBLE WALL INSULATED ACCESS DOOR
- ⑮ OPTIONAL DISCHARGE PLENUM



		Model										
		ASC-5	ASC-7	ASC-10	ASC-15	ASC-20	ASC-25	ASC-30	ASC-40	ASC-50	ASC-60	ASC-75
Unit Shipping Weight (lbs)	1A01	3,215	3,625	4,370	5,750	7,410	8,420	9,255	11,400	13,695	14,955	16,540
	2A11	3,415	3,855	4,625	6,060	7,790	8,850	9,690	11,930	14,285	15,620	17,275
Unit Operating Weight (lbs)	1A01	3,495	3,960	4,800	6,380	8,140	9,255	10,220	12,755	15,435	16,750	18,515
	2A11	3,820	4,350	5,250	6,915	8,820	10,025	11,025	13,740	16,575	18,000	19,900

AZTEC COOLING/HEATING UNITS WITH BOTTOM DISCHARGE

MODEL	FURNACE SIZE	DIMENSIONS								
		A		B	C	D	E	G	H	i
		1A01	2A11							
ASC-5	IFD-160	220	245	52	42-1/2	6	36-1/2	46	5	40
ASC-7	IFD-160	238	263	56	48-1/2	6	42-1/2	46	5	52
ASC-7	IFD-320	238	263	56	48-1/2	6	42-1/2	54	5	52
ASC-10	IFD-160	252	277	64	55-1/2	8	47-1/2	46	9	52
ASC-10	IFD-320	252	277	64	55-1/2	8	47-1/2	54	5	52
ASC-15	IFD-320	271	296	71	66-1/2	8	58-1/2	54	8-1/2	52
ASC-15	IFD-480	271	296	71	66-1/2	8	58-1/2	70	5	52
ASC-20	IFD-320	287	312	84	66-1/2	8	58-1/2	54	15	52
ASC-20	IFD-480	287	312	84	66-1/2	8	58-1/2	70	7	52
ASC-25	IFD-480	314	339	89	74-1/2	8	66-1/2	70	9-1/2	59
ASC-25	IFD-800	314	339	89	74-1/2	8	66-1/2	79	5	59
ASC-30	IFD-480	324	349	92	80-1/2	8	72-1/2	70	11	59
ASC-30	IFD-800	324	349	92	80-1/2	8	72-1/2	79	6-1/2	59
ASC-40	IFD-800	361	386	106	92-1/2	8	84-1/2	79	13-1/2	69
ASC-40	IFD-1120	361	386	106	92-1/2	8	84-1/2	82	12	69
ASC-50	IFD-1120	371	396	123	92-1/2	8	84-1/2	82	20-1/2	69
ASC-60	IFD-1120	382	407	123	107-1/2	8	99-1/2	82	20-1/2	69
ASC-75	IFD-1120	420	445	123	125-1/2	8	117-1/2	82	20-1/2	69

MODEL	FURNACE SIZE	DIMENSIONS							
		J	K	L	M	N	O	P	Q
ASC-5	IFD-160	21-7/8	11-1/2	23-1/2	14-1/4	32	12	22-7/8	56
ASC-7	IFD-160	29-7/8	13-1/2	29-1/2	13-1/4	32	14	26-7/8	56
ASC-7	IFD-320	21-7/8	13-1/2	29-1/2	13-1/4	32	14	26-7/8	64
ASC-10	IFD-160	25-7/8	17-1/2	35-1/2	14-1/4	36	18	18-7/8	64
ASC-10	IFD-320	21-7/8	17-1/2	35-1/2	14-1/4	36	18	18-7/8	64
ASC-15	IFD-320	34-3/8	19-1/2	43-1/2	13-3/4	48	20	27-7/8	71
ASC-15	IFD-480	21-7/8	19-1/2	43-1/2	13-3/4	48	20	27-7/8	80
ASC-20	IFD-320	29-7/8	23-1/2	49-1/2	17-1/4	45	24	16-7/8	84
ASC-20	IFD-480	21-7/8	23-1/2	49-1/2	17-1/4	45	24	16-7/8	84
ASC-25	IFD-480	30-1/2	29-1/2	49-1/2	19-3/4	48	30	23	89
ASC-25	IFD-800	26	29-1/2	49-1/2	19-3/4	48	30	23	89
ASC-30	IFD-480	30-1/2	32-1/2	53-1/2	19-1/4	48	33	21-1/2	92
ASC-30	IFD-800	26	32-1/2	53-1/2	19-1/4	48	33	21-1/2	92
ASC-40	IFD-800	32-1/16	35-1/2	65-1/2	20-1/4	60	36	20-9/16	106
ASC-40	IFD-1120	30-9/16	35-1/2	65-1/2	20-1/4	60	36	20-9/16	106
ASC-50	IFD-1120	30-9/16	37-1/2	79-1/2	21-3/4	66	38	12-1/16	123
ASC-60	IFD-1120	30-9/16	37-1/2	95-1/2	13-3/4	72	38	12-1/16	123
ASC-75	IFD-1120	30-9/16	39-1/2	111	6	78	48	12-1/16	123

NOTE: All dimensions in inches subject to manufacturing tolerances.

TYPICAL SPECIFICATIONS

1.0 GENERAL

1.1 (Choose one)

Furnish and install a "1A01" Series Aztec ASC-____-1A01 Packaged Indirect HVAC unit complete with blower section, motor base, motor, v-belt drive, flat bank filter section, integral cooling tower, indirect cooling coil section, and inlet louver with birdscreen. The entire unit is to be manufactured by Aztec Sensible Cooling, Dallas, Texas or an approved equal. The unit shall include all components and accessories as set forth herein.

Furnish and install a "2A11" Series Aztec ASC-____-2A11 Packaged Indirect/Direct Evaporative HVAC unit complete with blower section, motor base, motor, v-belt drive, flat bank filter section, integral cooling tower, indirect cooling coil section, direct evaporative cooling section and inlet louver with birdscreen. The entire unit is to be manufactured by Aztec Sensible Cooling, Dallas, Texas or an approved equal. The unit shall include all components and accessories as set forth herein.

- 1.2 Unit shall be designed to insure against air stratification across filters and evaporative cooling media. Air velocities across filters and evaporative cooling media shall not exceed 500 FPM.
- 1.3 Complete unit shall be ETL listed. All units shall be built up with orientation and connection locations as indicated on drawings.
- 1.4 Capacities shall be as scheduled on drawings and/or equipment schedule.

2.0 CABINET

- 2.1 The unit shall consist of sections required to incorporate the components indicated on the plans and schedule.
- 2.2 The wall and roof panels of the unit shall be fabricated of heavy gauge galvanized steel formed members. The walls and roof structure shall accommodate up to 1" of insulation.
- 2.3 The wall panels shall form a self-framing casing with no additional structural support required. All panels shall be sealed airtight with a sealant.
- 2.4 The floor panels will be built with 1" interlocking standing seam and be suitably reinforced with framing members as required to support the internal components of the unit and be both water and airtight.
- 2.5 Access doors shall be of the double wall, insulated type and provided with live neoprene bulb gaskets, hinges, and latches capable of applying additional sealing as required.
- 2.6 The roof of the unit shall have a minimum 1 1/2" interlocking standing seam construction. All seams will be caulked and sealed to be weathertight and airtight.
- 2.7 All exterior surfaces shall be cleaned to prepare the galvanized surface before applying a specially formulated corrosion resistant combination prime and finish coating of durable 500 hour salt spray resistant, dark tan, acrylic enamel.

3.0 STRUCTURAL BASE

- 3.1 Unit or individual unit section shall be fabricated with either a rigidly formed 12 gauge galvanized steel or structural steel base frame electrically welded to form a rigid chassis suitably reinforced and braced to permit the loading, shipping, unloading, rigging, and general handling of the completed sections without damage to assembled components due to normal handling techniques. If fabricated in sections, they shall be joined together by bolting. Structural components shall be of such design as to provide adequate support for each section and the complete assembly when the unit is supported around its base perimeter.

- 3.2 Lifting lugs shall be provided as required for each section.
- 3.3 Base frame of each section shall be designed to accept full perimeter roof curb as shown in drawings. Base frame and outside casing shall be specifically designed to shed water away from all curb penetrations.

4.0 INSULATION

- 4.1 Wall panels, roof, and floor shall be insulated with 1" thick, 1-1/2# density mat faced fiberglass insulation.
- 4.2 Insulation shall meet the requirements of the following codes and specifications:

NFPA 90A and NFPA 90B	ASTM C 1071 Type II
TIMA Standard AHC-101	HH-I-545B Type II

Insulation will be tested in accordance with ASTM E-84, UL 723, and NFPA-255 and will not exceed:
25 Flame spread
50 Smoke Developed

- 4.3 Insulation shall be held in place with adhesive and mechanical fasteners. The mechanical fasteners shall be spaced in accordance with the latest edition of SMACNA "HVAC Duct Construction standards".

5.0 SUPPLY AIR BLOWER SECTION

5.1 (Choose one)

Cooling Only Unit

The blower section shall include one centrifugal, forward curved DWDI blower and shall be complete with motor and drives. The blower shall be tested in accordance with standards set forth in Standard 210 of AMCA (Air Movement and Control Association). All air ratings are based on delivery against the external static pressure specified with all optional equipment in place and operating. All blowers will be dynamically balanced on precision electronic vibration amplifying equipment to insure quiet, smooth running, trouble free operation. Flexible ducting shall be provided between blower discharge and unit casing.

Heating and Cooling Unit

The blower section shall include one centrifugal, backward airfoil SWSI plenum type blower and shall be complete with motor and drives. The blower shall be rated based on tests and procedures performed in accordance with AMCA (Air Movement and Control Association) Standard 211 and shall bear the AMCA seal. The blowers shall be designed to operate without conventional scroll housing. All blower wheels shall have tapered and spun wheel cones or shrouds providing stable flow and high rigidity. The wheels shall be non-overloading type. The blades shall be continuously welded, die-formed airfoil type, designed for maximum efficiency and quiet operation. Partial welding will not be acceptable on airfoil blades. All air ratings are based on delivery against the external static pressure specified with all optional equipment in place and operating. All blowers will be dynamically balanced on precision electronic vibration amplifying equipment to insure quiet, smooth running, trouble free operation. Flexible ducting shall be provided between blower inlet and unit casing.

- 5.2 Bearings shall be of heavy duty, precision anti-friction, self-aligning ball or roller bearing type. Bearings are to be selected for minimum average bearing life (AFBMA L-50) in excess of 200,000 hours when operating at maximum cataloged class conditions. All bearings shall be equipped with re-greaseable zerkl fittings or optional extended lube lines for relubrication.

TYPICAL SPECIFICATIONS

- 5.3 All blowers will have solid hot rolled steel accurately turned, ground, and polished shaft and shall be provided with key seats and keys for mounting wheel and fan pulley. The shaft shall be designed for a maximum operating speed not to exceed 75% of its first critical speed. Shaft shall be coated with rust inhibiting coating prior to shipment.
- 5.4 Blower shall be connected to motor by means of an approved v-belt drive with grooved pulleys sized with a capacity of 25% greater than the motor horsepower. Multiple belt applications will be matched sets. Motor pulley shall be adjustable pitch diameter type, through 7½ HP.
- 5.5 Blower motor shall be designed to suit the characteristics of the available electric service shown on drawings. Motor will be mounted on adjustable slide base motor mount with drawbolt adjustment for belt tension. Motor will be (standard open dripproof) (standard TEFC) (energy efficient open dripproof) (energy efficient TEFC). Equipment will be supplied with 1750 RPM motors.
- 5.6 Motor, adjustable motor base, and blower assembly shall be mounted on a common structural steel base under which vibration isolators shall be anchored to the floor. Vibration isolators shall be spring type with seismic restraint to restrict vertical and horizontal motion. The isolation base shall be complete with hold down bolts and wood blocking to maintain the isolation base in rigid position for shipping.

6.0 INDIRECT EVAPORATIVE COOLING SECTION

- 6.1 The indirect evaporative cooling section of the unit shall consist of an indirect cooling coil [A] and an integral cooling tower [B] as described below:

A. **INDIRECT COOLING COIL:** The indirect cooling coil in the unit shall be of the drainable, counterflow type. The coil's finning material shall be of corrugated type and mechanically bonded to the coil's tubing. The coil shall be equipped with both a drain and vent connection.

The header and the supply and return coil connection of the indirect coil shall be copper, located on one end of the coil and internally plumbed at the factory to the recirculating pump provided with the unit's integral cooling tower.

The unit's indirect coil drain connection or the chilled water supply line from the cooling tower in the unit, whichever has the lowest drain point, shall be plumbed to the exterior of the unit's housing and provided with a manually operated drain valve.

B. **INTEGRAL COOLING TOWER:** The unit's integral cooling tower shall be provided with the following factory pre-assembled components: 2" aluminum mesh, washable type intake air filters; welded stainless steel sump construction; stainless steel housing construction; propeller type, corrosion coated, direct or belt driven exhaust fan; evaporative cooling media; cooling tower cooling media water distribution header or headers; recirculating pump manifold assembly; factory set, calibrated butterfly or ball type brass water balancing valve, factory adjusted, brass lever control valve with a plastic float ball; sump drain connection; sump overflow connection; sump water fill and make-up line connection; adjustable brass water bleed valve with the copper bleed tubing plumbed to the cooling tower's overflow stand pipe; recirculating pump low sump water lever shutoff switch; submersible type recirculating pump.

7.0 DIRECT EVAPORATIVE SECTION (2A11 Series only)

- 7.1 The evaporative section(s) shall have a 5½" deep sump with welded seams and corners. The sump shall be constructed of 304 stainless steel and will be factory leak tested prior to shipment. The remainder of the direct evaporative cooling section shall also be constructed of 304 stainless steel.
- 7.2 The cooling media shall be 12" deep fluted cellulose, high efficiency evaporative media, impregnated with an insoluble antirrot chemical. The face velocity shall be equal to or less than that shown on the air handler schedule, in no case shall the face velocity exceed 500 FPM.
- 7.3 The evaporative cooling section shall include a submersible pump with U.L. listed, hermetically sealed, dielectric oil-filled motor and Buna-N seal. Horsepower rating of the pump shall not be less than 1/6 HP. Pump to be centrifugal type.
- 7.4 The water distribution system shall be constructed of PVC plumbing and include, but not be limited to, the following items: pump riser; factory installed water regulator valve to permit field adjustment of water flow over media; 1" drain connection; 1½" overflow line; ¾" water control valve; adjustable bleed valve to allow continuous bleed off, thus minimizing the build up of minerals and salts; cleanable water distribution header over the complete width of media.

8.0 OUTSIDE AIR INLET LOUVER

- 8.1 Louver frame and blades shall be galvanized steel with riveted or welded construction.
- 8.2 Louver shall include galvanized birdscreen.
- 8.3 Louver design shall be of the drainable type and be tested to AMCA Standard 500 and licensed to bear the AMCA seal.
- 8.4 Louver shall be hinged for service and filter access on all 100% outside air units.

9.0 FILTER SECTION

- 9.1 Flat filter rack shall be designed for 2" thick filters of size and quantity as shown on drawings. Filter rack shall be of the front access type. Filters shall be mounted in galvanized steel frames.
- 9.2 Filter media shall be nominal 2" thick, 30% efficient disposable type design. All filters shall be listed by Underwriters Laboratories as Class 2.

TYPICAL SPECIFICATIONS

10.0 GAS FIRED HEATING SECTION (OPTIONAL)

- 10.1 Only plenum fans shall be used with an indirect fired heating section to insure proper airflow across all areas of the heat exchanger. Housed centrifugal fans will not be accepted.
- 10.2 The gas-fired duct furnace shall be ETL listed for safe and efficient performance. The duct furnace shall be suitable for operation on natural gas or LP.
- 10.3 Heat exchanger shall consist of 16 gauge primary drum and 18 gauge secondary tubes. Complete heat exchanger material shall be type 409 stainless steel.
- 10.4 The burner will be a power type gas burner complete with integral combustion air blower and motor, and combustion air proving switch. The combustion air damper is interlocked with the gas control valve to insure a proper gas/air mixture throughout the complete range of operation.
- 10.5 A solid-state ignition control system which ignites the main burner on models through 320 MBH output, or ignites the pilot on models with 480 MBH output and above, is standard on all gas fired duct furnaces. The main flame and pilot flame (where applicable) are extinguished during each off cycle.
- 10.6 The venting system shall be an integral part of the air handler and shall not be altered in the field. Weatherproof enclosure shall include louvered panels sized to allow proper amount of combustion air.
- 10.7 The gas train and safety controls shall consist of not less than the following: high limit safety, control circuit transformer, low pressure regulator, motorized gas control valve, main manual test firing shut-off valve, main automatic shut-off valve(s), pilot manual shut-off valve (480 MBH output & larger), pilot pressure regulator (480 MBH output & larger), pilot automatic shut-off valve (480 MBH output & larger), pilot manual test firing shut-off valve (480 MBH output & larger), and electronic flame relay.
- 10.8 The gas-fired furnace controls shall be set for: (choose one)
 - a) MDT Control System
 - b) MRT Control System
 - c) MRT Pro Control System
 - d) MRT Expert Control System
 - e) VDT Expert Control System

BLOWER PERFORMANCE

The following blower performance data consists of measurements made during air chamber tests conducted in accordance with standard methods of performance testing established by the Air Movement and Control Association (A.M.C.A.). Blower performance is expressed by the relationship between static pressure and volume flow of air (CFM).

The following tables are presented to assist in the selection of the Aztec Indirect or Indirect/Direct Evaporative Cooling Unit best suited to the application.

EXAMPLE OF HOW TO USE THE BLOWER PERFORMANCE TABLES

Task: Select a blower that will provide 3000 CFM with a total static pressure of 1.75" at sea level and determine the RPM and MHP horsepower required.

Procedure: Find 3000 in CFM column of one of the tables on the following pages. Unit Model ASC-7 on page 16 satisfies this requirement. Follow the line for 3000 CFM horizontally to the 1.75" Static Pressure column.

Solution: The operating speed is 1071 RPM and the MHP is 1.62. In this example, a 2 horsepower motor would be recommended.



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