

Models ASFC/ASFE 1:1 Ratio w/o coil  
 Models ATFC/ATFE 2:1 Ratio w/o coil

Models ASWC/ASWE 1:1 Ratio w/Hot Water Coil  
 Models ATWC/ATWE 2:1 Ratio w/Hot Water Coil

Models ASEC/ASEE 1:1 Ratio w/Electric Coil  
 Models ATEC/ATEE 2:1 Ratio w/Electric Coil



The Carnes intermittent fan terminal unit provides constant air volume to the space for reheat applications while retaining a variable air volume system during normal cooling operation.

The primary air control assembly operates independently as a standard throttling control valve for cooling loads. As cooling loads diminish, the secondary air supply fan(s) is energized to induce warm ceiling plenum air. A wide variety of control sequences makes this fan powered unit compatible with the most energy efficient system design.

#### Typical Sequence of Operation

Central fan on — Day (occupied) operation.

When the central system fan is "on", the intermittent fan unit operates as a standard throttling control unit for cooling loads. As the cooling load diminishes and the control valve throttles to a minimum or closed position, the fan is energized by the P/E switch for pneumatic controls or an electric contactor for electronic controls to draw in warm plenum air or hydronically or electrically reheated air.

Central fan off — Night (unoccupied) operation.

When the central system fan is "off", the primary air supply valve is closed. The unit fan is then turned on and off by the P/E switch for pneumatic controls or an electric contactor for electronic controls on demands for heat and no heat respectively.

**Note:** For electronically controlled units, minimum CFM must be zero. A minimum setting other than zero may cause the damper to throttle open when central system is off.

#### Features Include:

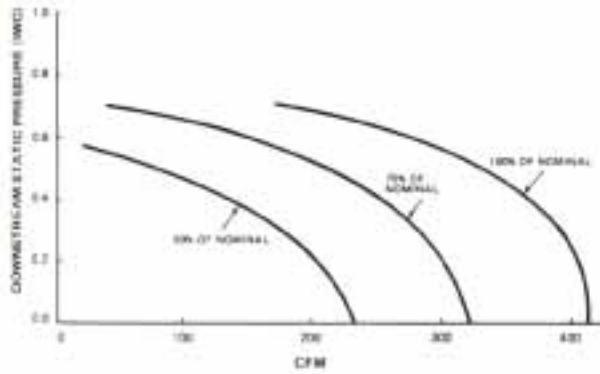
- Air flow capacities from full shut-off to 8000 CFM primary air and 3200 CFM secondary air.
- Two primary to secondary air ratio configurations are available.
- Access panel for internal fan and control components.
- Forward curved centrifugal type fan assembly(s).
- 115, 208 or 277 volt, single phase SCR speed controller.
- Permanent split capacitor type fractional horsepower motor(s).
- Fan/motor assemblies are isolated from the casing using rubber isolators to minimize vibration transmission.
- All units are equipped with pneumatic or electronic pressure independent controls.
- Field adjustable P/E switch with pneumatic controls.
- Insulation is 1½ lb. density fiberglass with surface treated to prevent erosion, meets NFPA 90A requirements.
- Velocity sensor and calibration chart for measuring air flow through the primary air damper.
- Optional ETL listing (Models ASFE/ATFE/ASWE/ATWE/ASEE/ATEE).
- Optional one or two row hot water coils (Models ASWC/ASWE/ATWC/ATWE). Coil is attached to primary air discharge.
- Optional one, two or three stage electric reheat coils (Models ASEC/ASEE/ATEC/ATEE). Coil is attached to primary air discharge.
- Optional filter rack.
- Optional quick release access panel.
- Optional fire rated tubing.
- Optional foil coated insulation (hospital, laboratory, etc. applications).

#### Available Modules:

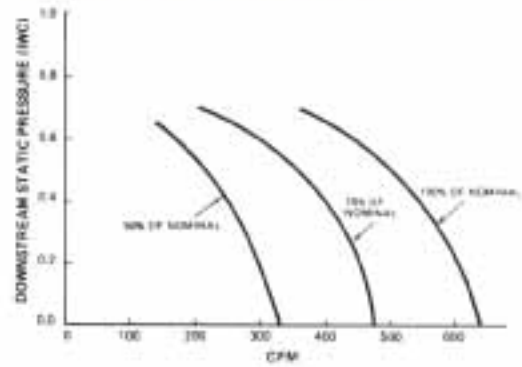
- Basic control unit—Models ASFC/ASFE/ATFC/ATFE.
- Basic control unit with hot water coil—Models ASWC/ASWE/ATWC/ATWE.
- Basic control unit with or without electric coil—Models ASEC/ASEE/ATEC/ATEE.
- Discharge sound attenuator—Model AXAA (See Section 5-Accessories).
- Multi-discharge adaptor—Model AXMA (See Section 5-Accessories).

# Performance Data—Models ASFC/ATFC/ASWC/ATWC/ASEC/ATEC ASFE/ATFE/ASWE/ATWE/ASEE/ATEE CFM vs External Static Pressure

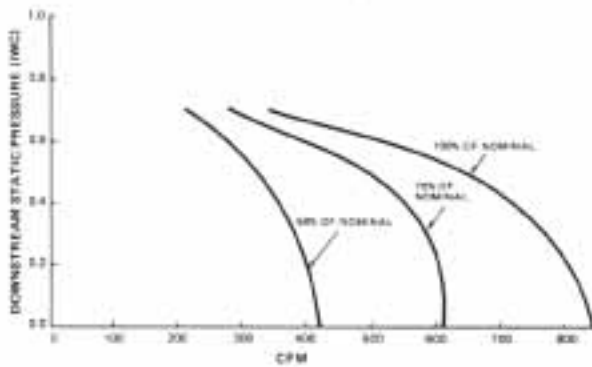
UNIT SIZE 04 1:1 and UNIT SIZE 08 2:1



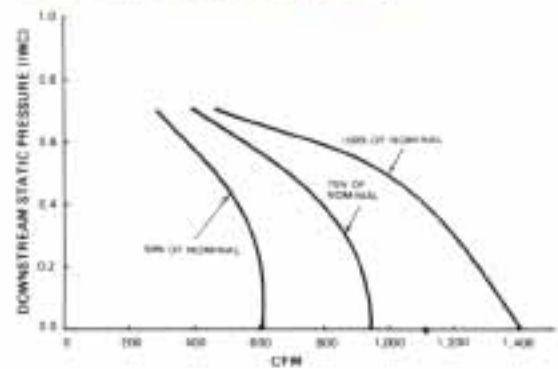
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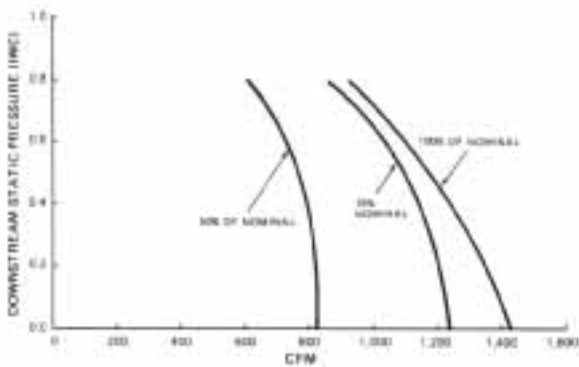
UNIT SIZE 08 1:1 and UNIT SIZE 16 2:1



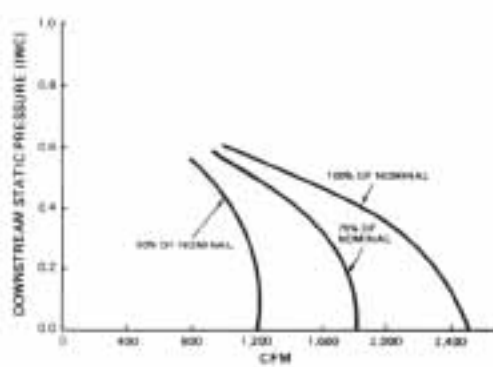
UNIT SIZE 12 1:1 and UNIT SIZE 24 2:1



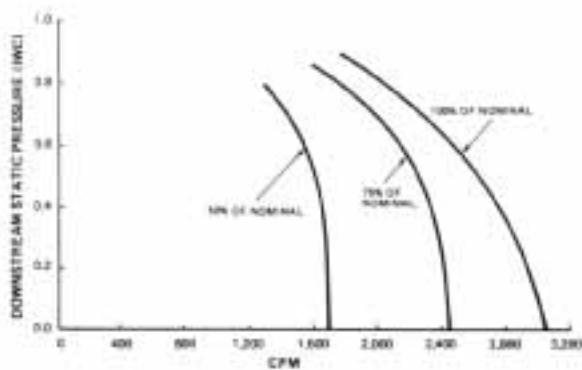
UNIT SIZE 16 1:1 and UNIT SIZE 32 2:1



UNIT SIZE 24 1:1 and UNIT SIZE 45 2:1



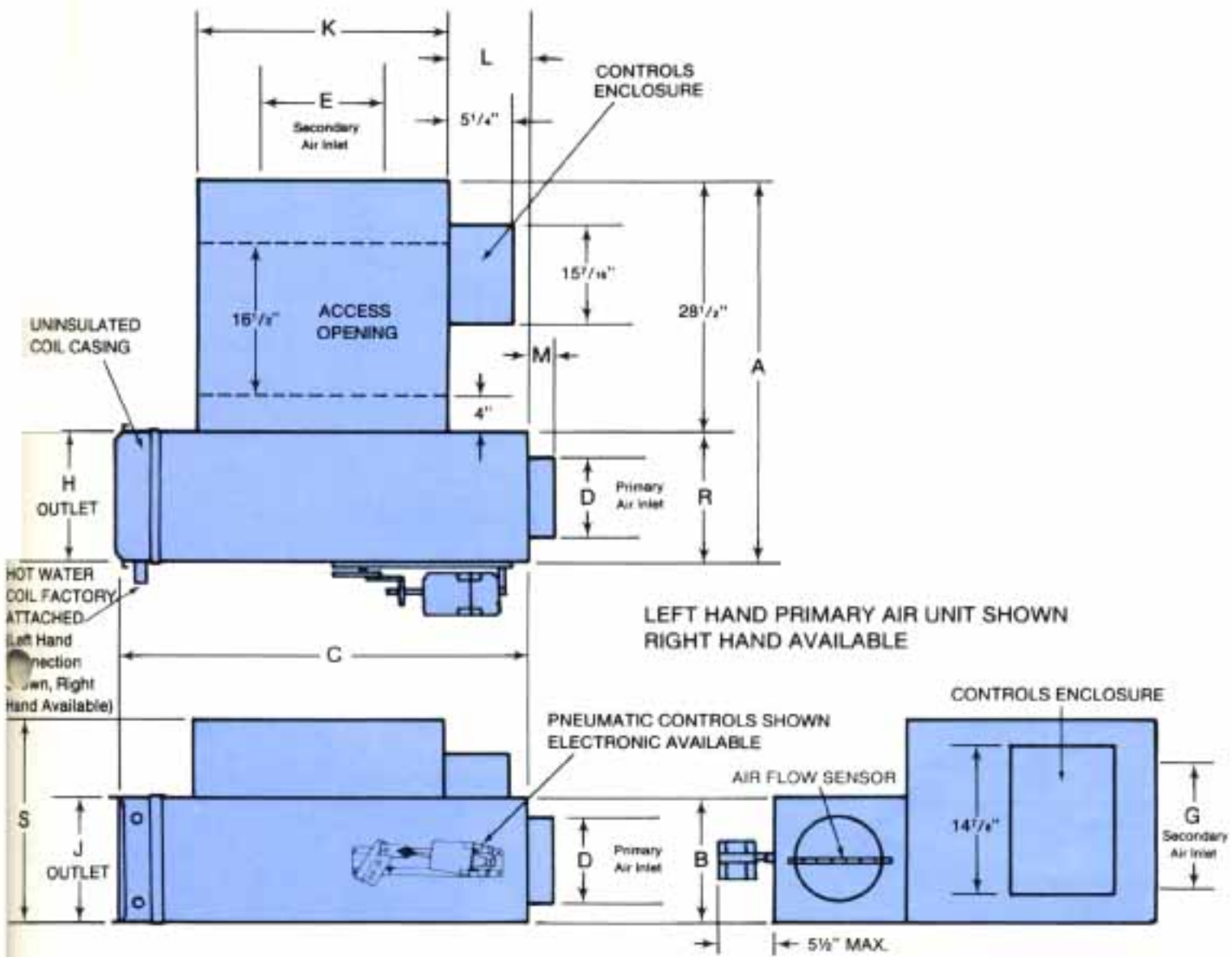
UNIT SIZE 32 1:1 and UNIT SIZE 60 2:1



MOTOR FULL LOAD AMPS

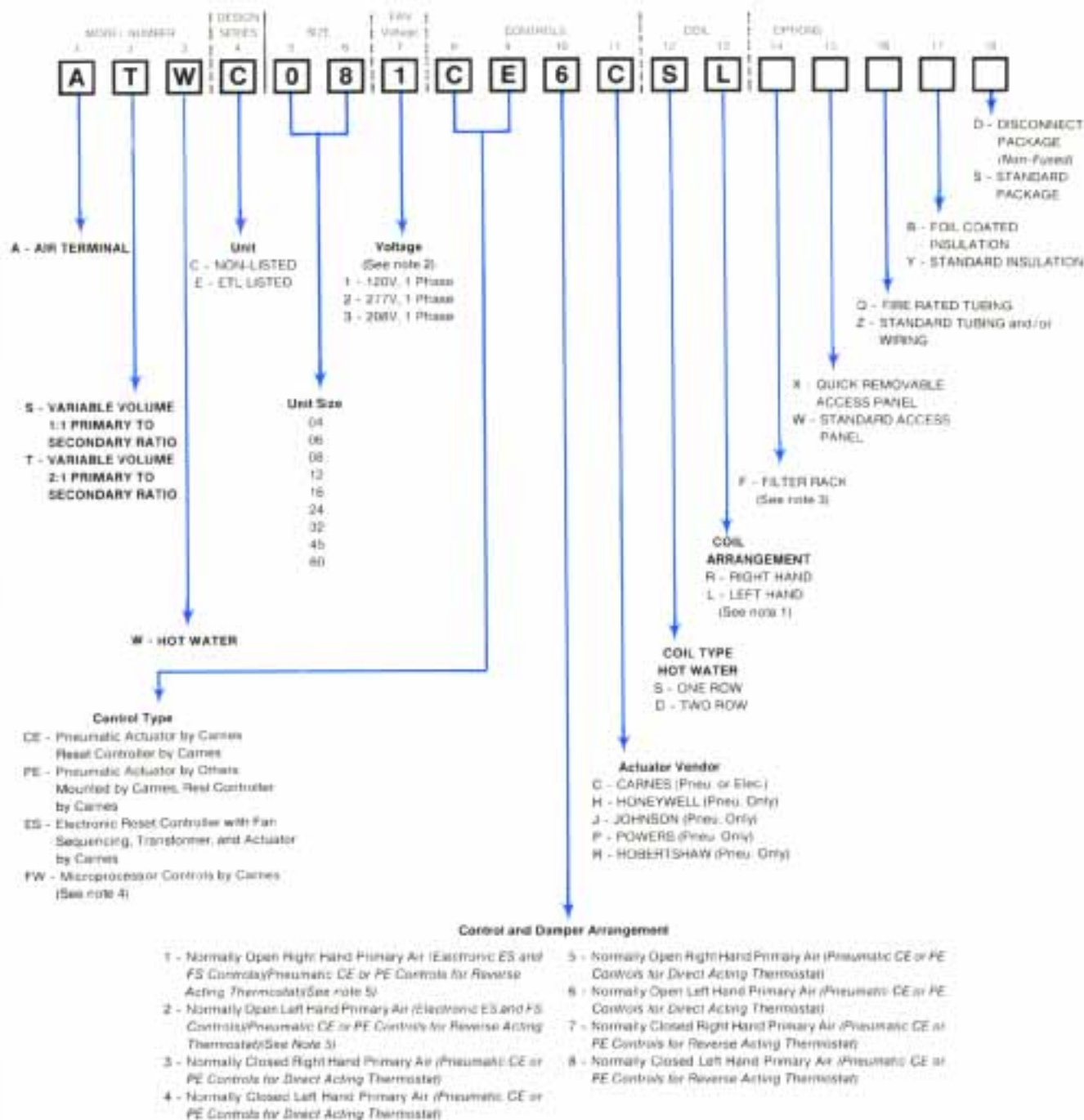
Unit Size 2:1	Unit Size 1:1	HP	Volts	Full Load Amps
08	04	1/8	115	2.1
			208/277	1.1
12	06	1/6	115	3.0
			208/277	1.5
16	08	1/4	115	4.2
			208/277	2.1
24	12	1/3	115	6.4
			208/277	3.2
32	16	1/2	115	8.2
			208/277	4.1
45	24	(2)1/3	115	12.8
			208/277	6.4
60	32	(2)1/2	115	16.4
			208/277	8.2

# Dimensional Data—Models ASWC/ATWC/ASWE/ATWE-Intermittent Volume Fan Powered Units with Hot Water Coil



DIMENSION IN INCHES																		
Unit Type	Unit Size	Prim. Nom. CFM	Sec. Nom. CFM	Fan H.P.	A	B	1 Row		D	Secondary Air Inlet		S & Drive Outlet		K	L	M	R	S
							C	C		E	G	H	J					
ASWC ASWE 1:1 Ratio	04	400	400	1/8	38 1/2	8	30 1/2	31 1/2	6	10	8	10	8	19 1/2	5 1/2	2 1/2	10	18
	06	600	600	1/8	40 1/2	10	33 1/2	34 1/2	7	12	10	12	10	24	5 1/2	2 1/2	12	18
	08	800	800	1/4	40 1/2	10	36 1/2	37 1/2	8	14	12	12	10	26	5 1/2	2 1/2	12	18
	12	1200	1200	1/2	42 1/2	12	42 1/2	44	10	16	14	14	12	31	6 1/2	2 1/2	14	18
	16	1600	1600	1/2	44 1/2	14	44 1/2	45 1/2	12	18	16	16	14	33 1/2	6 1/2	2 1/2	16	18
	24	2400	2400	(2) 1/2	46 1/2	16	60 1/2	61 1/2	14	20	18	18	16	42	13 1/2	2 1/2	18	18
TWC TWE 2:1 Ratio	32	3200	3200	(2) 1/2	48 1/2	18	62 1/2	63 1/2	16	24	18	20	18	46 1/2	12 1/2	2 1/2	20	20
	08	800	400	1/8	40 1/2	10	32	33 1/2	8	10	8	12	10	19 1/2	8	2 1/2	12	18
	12	1200	600	1/8	42 1/2	12	36 1/2	37 1/2	10	12	10	14	12	24	7 1/2	2 1/2	14	18
	16	1600	800	1/4	44 1/2	14	40	41 1/2	12	14	12	16	14	26	9 1/2	2 1/2	16	18
	24	2400	1200	1/2	46 1/2	16	46 1/2	47 1/2	14	16	14	18	16	31	10 1/2	2 1/2	18	18
	32	3200	1600	1/2	48 1/2	18	48 1/2	49 1/2	16	18	16	20	18	33 1/2	10 1/2	2 1/2	20	18
	45	4500	2400	(2) 1/2	52 1/2	18	62 1/2	63 1/2	18 x 16	20	18	24	18	42	15 1/2	3 1/2	24	18
	60	6000	3200	(2) 1/2	60 1/2	18	62 1/2	63 1/2	24 x 16	24	18	32	18	46 1/2	12 1/2	3 1/2	32	20

Refer to Section 3 of this catalog for additional hot water coil information.



- NOTES:**
- Hand is determined by facing the unit in the direction of air flow into the unit from supply duct.
  - Standard motor voltages for 1:1 unit type are 277 volts or 208 volts for sizes 04-32 and 115 volts for sizes 04-16. Standard motor voltages for 2:1 unit type are 277 volts or 208 volts for sizes 08-60 and 115 volts for sizes 08-32.
  - Filter not included with filter rack.
  - Microprocessor Controls includes controller with fan sequencing, actuator, transformer and inlet air flow sensor. (Not available with "E" design series.)
  - Electric/Electronic units do not fail open. "1" or "2" is used for model identification only. (Refer to controls section of this catalog for additional operating information.)