

The TCA packaged electric cooling units are available in basic cooling efficiency (036B, 048B and 060B) and standard cooling efficiency (024S, 030S, 036S, 048S, 060S and 072S). Cooling capacities range from 24,000 to 72,000 Btuh.

Optional electric heat is factory or field installed in TCA units. Electric heat operates in single stage depending on the kW input size. 7.5kW through 30 kW heat sections are available for the TCA unit.

Information contained in this manual is intended for use by qualified service technicians only. All specifications are subject to change. Procedures outlined in this manual are presented as a recommendation only and do not supersede or replace local or state codes.

If the unit must be lifted for service, rig unit by attaching four cables to the holes located in the unit base rail (two holes at each corner). Refer to the installation instructions for the proper rigging technique.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional installer or service agency.

⚠ IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFC's and HCFC's) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

⚠ WARNING



Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.



ELECTROSTATIC DISCHARGE (ESD) Precautions and Procedures

⚠ CAUTION

Electrostatic discharge can affect electronic components. Take precautions during unit installation and service to protect the unit's electronic controls. Precautions will help to avoid control exposure to electrostatic discharge by putting the furnace, the control and the technician at the same electrostatic potential. Neutralize electrostatic charge by touching hand and all tools on an unpainted unit surface, such as the gas valve or blower deck, before performing any service procedure.

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OPTIONS / ACCESSORIES

Item			Catalog No.	024	030	036	048	060	072
COOLING SYSTEM									
Condensate Drain Trap	PVC - LTACDKP03/07	37K69		x	x	x	x	x	x
	Copper - LTACDKC03/07	45K67		x	x	x	x	x	x
Corrosion Protection				○	○	○	○	○	○
Compressor Crankcase Heater	208/230V/1PH - T1CCHT01AN1P	95M07		x	x	x	x	x	x
	208/230V/3PH - T1CCHT01A-1Y	21W36				¹ x			
	460V/3PH - T1CCHT01A-1G	21W37				¹ x			
	460V/3PH - T1CCHT01AN1G	95M08				x	x	x	x
	575V/3PH - T1CCHT01AN1J	95M09				x	x	x	x
Low Ambient Kit	T1SNSR12AN1	95M05		x	x	x	x	x	x
Efficiency	Standard Basic			○	○	○	○	○	○
						○	○	○	
High Pressure Switch	T1SNSR11AN1	95M04		x	x	x	x	x	x
Refrigerant Type	R-22			○	○	○	○	○	○
Blower - SUPPLY AIR									
Motors	Direct Drive - 0.25 hp			○	○				
	Direct Drive - 0.5 hp					○	○		
	Direct Drive - 0.75 hp							○	
	Belt Drive - 1.5 hp Standard Efficiency					○	○	○	○
	Belt Drive - ² 2 hp Standard Efficiency					○	○	○	○
Drive Kits	Drive Kit # 1 - T1DRKT001-1 - 673-1010 rpm	20W81				⊗			
See Blower Data Tables for selection	Drive Kit # 2 - T1DRKT002-1 - 745-1117 rpm	20W82					⊗		
	Drive Kit # 3 - T1DRKT003-1 - 833-1250 rpm	20W83						⊗	
	Drive Kit # 4 - T1DRKT004-1 - 968-1340 rpm	20W84							⊗
	Drive Kit # 5 - T1DRKT005-1 - 897-1346 rpm	20W85				⊗			
	Drive Kit # 6 - T1DRKT006-1 - 1071-1429 rpm	20W86					⊗		
	Drive Kit # 7 - T1DRKT007-1 - 1212-1548 rpm	20W87						⊗	
	Drive Kit # 8 - T1DRKT008-1 - 1193-1591 rpm	20W88							⊗
CABINET									
Coil Guards	T1GARD20A-1	17W87		x	x	x	x	x	
	T1GARD20N-1	17W88							x
Hail Guards	T1GARD10A-1	17W89		x	x	x	x	x	
	T1GARD10N-1	17W90							x
Hinged Access Panels				○	○	○	○	○	○
CONTROLS									
Dirty Filter Switch	COSWCH00AE-1	30K48		x	x	x	x	x	x
Smoke Detector - Return	T1SNSR41AN1	94M18		x	x	x	x	x	x
ECONOMIZER									
Economizer									
Economizer, Single Enthalpy Control Order Outdoor Air Hood Separately	T1ECON30A-1	16W86		⊗	⊗	⊗	⊗	⊗	
	T1ECON30N-1	16W89							⊗
Horizontal Economizer Conversion Kit	T1HECK00AN1	17W45		x	x	x	x	x	x
Outdoor Air Hood	T1HOOD30A-1	16W87		⊗	⊗	⊗	⊗	⊗	
	T1HOOD30N-1	16W90							⊗
Economizer Controls									
Differential Enthalpy Sensor	T1SNSR60AN1	17W71		x	x	x	x	x	x
Single Temperature Control	TASEK10/15	76M37		x	x	x	x	x	x
Differential Temperature Control	Order 2 - TASEK10/15	76M37		x	x	x	x	x	x

NOTE - The model numbers that appear here are for ordering field installed accessories only.

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

¹ 036B models only

x - Field Installed

² 2 hp blower motor is not available for 208/230V-1ph applications.

OPTIONS / ACCESSORIES									
Item			Catalog No.	024	030	036	048	060	072
OUTDOOR AIR									
Outdoor Air Dampers									
Damper Section - Manual, Includes Outdoor Air Hood		T1DAMP11A-1	16W88	x	x	x	x	x	
		T1DAMP11N-1	16W91						x
Damper Motorized Kit - Order Manual Outdoor Air Damper Separately			16W92	x	x	x	x	x	x
T1DAMP21AN1									
Power Exhaust FAN									
Standard Static		208/230V - T1PWRE10A-1P	17W39			x	x	x	
		460V - T1PWRE10A-1G	17W40			x	x	x	
		575V - T1PWRE10A-1J	17W41			x	x	x	
		208/230V - T1PWRE10N-1P	17W42						x
		460V - T1PWRE10N-1G	17W43						x
		575V - T1PWRE10N-1J	17W44						x
ELECTRICAL									
Voltage 60 hz		208/230V - 1 phase		○	○	○	○	○	
		208/230V - 3 phase				○	○	○	○
		460V - 3 phase				○	○	○	○
		575V - 3 phase				○	○	○	○
Disconnect	See Electrical/Electric Heat Tables for selection			x	x	x	x	x	x
GFI Service Outlets		LTAGFIK10/15	74M70	x	x	x	x	x	x
ELECTRIC HEAT									
7.5 kW		208/230V-1ph - T1EH0075AN1P	14W32	x	x	x	x	x	x
		208/230V-3ph - T1EH0075AN1Y	14W35			x	x	x	x
		460V-3ph - T1EH0075AN1G	14W39			x	x	x	x
		575V-3ph - T1EH0075AN1J	14W43			x	x	x	x
10 kW		208/230V-1ph - T1EH0100A1P	30W26	x	x				
15 kW		208/230V-1ph - T1EH0150AN1P	14W33			x	x	x	x
		208/230V-3ph - T1EH0150AN1Y	14W36			x	x	x	x
		460V-3ph - T1EH0150AN1G	14W40			x	x	x	x
		575V-3ph - T1EH0150AN1J	14W44			x	x	x	x
22.5 kW		208/230V-1ph - T1EH0225AN1P	14W34					x	x
		208/230V-3ph - T1EH0225AN1Y	14W37					x	x
		460V-3ph - T1EH0225AN1G	14W41					x	x
		575V-3ph - T1EH0225AN1J	14W45					x	x
30 kW		208/230V-3ph - T1EH0300N-1Y	14W38						x
		460V-3ph - T1EH0300N-1G	14W42						x
		575V-3ph - T1EH0300N-1J	14W46						x
ELECTRIC HEAT ACCESSORIES/OPTIONS - See Electrical/Electric Heat Tables for selection									
Unit Fuse Block				⊗	⊗	⊗	⊗	⊗	⊗

NOTE - The catalog and part numbers that appear here are for ordering field installed accessories only.

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

X - Field Installed.

OPTIONS / ACCESSORIES							
Item	Catalog No.	024	030	036	048	060	072
Indoor Air Quality							
Indoor Air Quality (CO₂) Sensors							
Sensor - white case CO ₂ display	C0SNSR50AE1L 77N39	x	x	x	x	x	x
Sensor - duct mount, black case, no display	C0SNSR53AE1L 87N54	x	x	x	x	x	x
CO ₂ Sensor Duct Mounting Kit	LTIAQSDMK03/36 85L43	x	x	x	x	x	x
CEILING DIFFUSERS							
Step-Down - Order one	RTD9-65-R 27G87	x	x	x	x	x	
	RTD11-95 29G04						x
	(Canada Only) RTD11-95S 13K61						x
Flush - Order one	FD9-65-R 27G86	x	x	x	x	x	
	FD11-95 29G08						x
	(Canada Only) FD11-95S 13K56						x
Transitions (Supply and Return) - Order one	T1TRAN10AN1 17W53	x	x	x	x	x	
	T1TRAN20N-1 17W54						x
ROOF CURBS - Down-Flow							
Cliplock							
8 in. height	T1CURB23AN1 16W93	x	x	x	x	x	x
14 in. height	T1CURB20AN1 16W94	x	x	x	x	x	x
18 in. height	T1CURB21AN1 16W95	x	x	x	x	x	x
24 in. height	T1CURB22AN1 16W96	x	x	x	x	x	x
Standard							
14 in. height	T1CURB10AN1 13W27	x	x	x	x	x	x
Hinged							
8 in. height	T1CURB30AN1 17W46	x	x	x	x	x	x
18 in. height	T1CURB32AN1 17W47	x	x	x	x	x	x
24 in. height	T1CURB33AN1 17W48	x	x	x	x	x	x

NOTE - The model numbers that appear here are for ordering field installed accessories only.

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

✕ - Field Installed.

SPECIFICATIONS - DIRECT DRIVE BLOWER
2 - 2.5 TON

General Data		2 Ton	2.5 Ton
	Nominal Tonnage		
	Model No.	TCA024S2D	TCA030S2D
	Efficiency Type	Standard	Standard
Cooling Performance	Gross Cooling Capacity - Btuh	24,000	30,000
	¹ Net Cooling Capacity - Btuh	23,400	29,400
	ARI Rated Air Flow - cfm	840	1000
	² Sound Rating Number (dB)	75	75
	Total Unit Power - kW	2	2.5
	¹ SEER (Btuh/Watt)	13.5	13.5
	¹ EER (Btuh/Watt)	12	11.8
Refrigerant	Type	R-22	R-22
	Charge Furnished	7 lbs. 0 oz.	7 lbs. 0 oz.
Compressor Type (one per unit)		Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6
	Tube diameter - in.	3/8	3/8
	Number of rows	1	1
	Fins per inch	20	20
Outdoor Coil Fan	Motor HP	1/4	1/4
	Motor rpm	825	825
	Total motor watts	250	250
	Diameter - in. / No. of blades	24 - 3	24 - 3
	Total air volume - cfm	3700	3700
Indoor Coil	Net face area - sq. ft.	7.78	7.78
	Tube diameter - in.	3/8	3/8
	Number of rows	3	3
	Fins per inch	14	14
	Drain Connection (no. and size) - in.	(1) 3/4 npt	(1) 3/4 npt
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removeable power head	
Indoor Blower	Nominal Motor HP	.25	.25
	Wheel nominal diameter x width - in.	10 x 10	10 x 10
Filters	Type	Disposable	
	Number and size - in.	(4) 16 x 20 x 2	
Electrical Characteristics - 60 Hz		208/230V 1 phase	208/230V 1 phase

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

¹ Certified in accordance with the USE certification program, which is based on ARI Standard 210/240; 95° F outdoor air temperature and 80° F db/67° F wb entering evaporator air; minimum external duct static pressure.

² Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

SPECIFICATIONS - DIRECT DRIVE BLOWER
3 - 5 TON

General Data		3 Ton		4 Ton		5 Ton	
Nominal Tonnage		TCA036B2D	TCA036S2D	TCA048B2D	TCA048S2D	TCA060B2D	TCA060S2D
Model No.		Basic	Standard	Basic	Standard	Basic	Standard
Efficiency Type		Basic	Standard	Basic	Standard	Basic	Standard
Cooling Performance	Gross Cooling Capacity - Btuh	37,400	38,000	49,500	50,000	59,800	62,000
	¹ Net Cooling Capacity - Btuh	36,000	36,600	47,000	48,000	57,000	59,000
	ARI Rated Air Flow - cfm	1,200	1,200	1,750	1,600	1,850	1,800
	² Sound Rating Number (dB)	81	75	75	75	82	82
	Total Unit Power - kW	3.6	3.2	5.0	4.4	6.7	5.4
	¹ SEER (Btuh/Watt)	11.0	13.0	10.0	13.0	10.0	13.0
¹ EER (Btuh/Watt)		10.0	11.6	9.4	11.0	8.5	11.0
Refrigerant	Type	R-22	R-22	R-22	R-22	R-22	R-22
	Charge Furnished	6 lbs. 0 oz.	7 lbs. 12 oz.	6 lbs. 12 oz.	9 lbs. 12 oz.	6 lbs. 3 oz.	11 lbs. 5 oz.
Compressor Type (one per unit)		Reciprocating	Scroll	Scroll	Scroll	Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6	15.6	15.6	15.6	15.6
	Tube diameter - in.	3/8	3/8	3/8	3/8	3/8	3/8
	Number of rows	1.0	1.5	1.0	2.0	1.0	2.0
	Fins per inch	20	20	20	20	20	20
Outdoor Coil Fan	Motor HP	1/4	1/4	1/4	1/4	1/3	1/3
	Motor rpm	825	825	825	825	1075	1075
	Total motor watts	250	250	250	250	370	370
	Diameter - in. / No. of blades	24 - 3	24 - 3	24 - 3	24 - 3	24 - 3	24 - 3
	Total air volume - cfm	3,700	3,500	3,700	3,300	4,300	4,300
Indoor Coil	Net face area - sq. ft.	7.78	7.78	7.78	7.78	7.78	7.78
	Tube diameter - in.	3/8	3/8	3/8	3/8	3/8	3/8
	Number of rows	2	3	2	3	2	4
	Fins per inch	14	14	14	14	14	14
	Drain Connection (no. and size) - in.	(1) 3/4 npt	(1) 3/4 npt	(1) 3/4 npt	(1) 3/4 npt	(1) 3/4 npt	(1) 3/4 npt
Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head					
Indoor Blower	Nominal Motor HP	.5	.5	.5	.5	.75	.75
	Wheel nominal diameter x width - in.	10 x 10	10 x 10	10 x 10	10 x 10	11 x 10	11 x 10
Filters	Type	Disposable					
	Number and size - in.	(4) 16 x 20 x 2					
Electrical Characteristics - 60 Hz		208/230V & 460V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V & 460V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V & 460V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

¹ Certified in accordance with the USE certification program, which is based on ARI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

² Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

General Data		Nominal Tonnage	3 Ton		4 Ton	
		Model No.	TCA036B2B	TCA036S2B	TCA048B2B	TCA048S2B
		Efficiency Type	Basic	Standard	Basic	Standard
Cooling Performance	Gross Cooling Capacity - Btuh	37,400	38,000	49,500	50,000	
	¹ Net Cooling Capacity - Btuh	36,000	36,600	47,000	48,000	
	ARI Rated Air Flow - cfm	1,200	1,200	1,750	1,600	
	² Sound Rating Number (dB)	81	75	75	75	
	Total Unit Power - kW	3.6	3.2	5.0	4.4	
	¹ SEER (Btuh/Watt)	11.0	13.0	10.0	13.0	
	¹ EER (Btuh/Watt)	10.0	11.6	9.4	11.0	
Refrigerant	Type	R-22	R-22	R-22	R-22	
	Charge Furnished	6 lbs. 0 oz.	7 lbs. 12 oz.	6 lbs. 12 oz.	9 lbs. 12 oz.	
Compressor Type (one per unit)		Reciprocating	Scroll	Scroll	Scroll	
Outdoor Coil	Net face area - sq. ft.	15.6	15.6	15.6	15.6	
	Tube diameter - in.	3/8	3/8	3/8	3/8	
	Number of rows	1.0	1.5	1.0	2.0	
	Fins / inch	20	20	20	20	
Outdoor Coil Fan	Motor HP	1/4	1/4	1/4	1/4	
	Motor rpm	825	825	825	825	
	Total motor watts	250	250	250	250	
	Diameter - in. / No. of blades	24 - 3	24 - 3	24 - 3	24 - 3	
	Total air volume - cfm	3,700	3,500	3,700	3,300	
Indoor Coil	Net face area - sq. ft.	7.78	7.78	7.78	7.78	
	Tube diameter - in.	3/8	3/8	3/8	3/8	
	Number of rows	2	3	2	3	
	Fins per inch	14	14	14	14	
	Drain Connection (no.and size) - in.	(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT	
	Expansion device type	Balanced Port Thermostatic Expansion Valve, removeable power head				
³ Indoor Blower & Drive Selection	Nominal Motor HP	1.5 hp, 2 hp	1.5 hp, ⁴ 2 hp	1.5 hp, 2 hp	1.5 hp, ⁴ 2 hp	
	Maximum Usable Motor HP	1.72 hp, 2.3 hp	1.72 hp, 2.3 hp	1.72 hp, 2.3 hp	1.72 hp, 2.3 hp	
	Wheel nominal diameter x width - in.	10 x 10	10 x 10	10 x 10	10 x 10	
	Available Drive Kits	kit #1 - 673 - 1010 rpm kit #4 - 968 - 1340 rpm kit #7 - 1212 - 1548 rpm kit #2 - 745 - 1117 rpm kit #5 - 897 - 1346 rpm kit #8 - 1193 - 1591 rpm kit #3 - 833 - 1250 rpm kit #6 - 1071 - 1429 rpm				
Filters	Type	Disposable	Disposable	Disposable	Disposable	
	Number and size - in.	(4) 16 x 20 x 2	(4) 16 x 20 x 2	(4) 16 x 20 x 2	(4) 16 x 20 x 2	
Electrical Characteristics - 60 Hz		208/230V & 460V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V & 460V 3 phase	208/230V, 1 phase 208/230V 460V & 575V 3 phase	

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

¹ Certified in accordance with the USE certification program, which is based on ARI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

² Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

³ Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor hp required. Maximum usable hp of motors furnished are shown. In Canada, nominal motor hp is also maximum usable motor hp output. If motors of comparable hp are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

⁴ 2 hp blower motor is not available for 208/230V-1ph applications.

General Data		5 Ton		6 Ton
Nominal Tonnage				
Model No.		TCA060B2B	TCA060S2B	TCA072S2B
Efficiency Type		Basic	Standard	Standard
Cooling Performance	Gross Cooling Capacity - Btuh	59,800	62,000	75,000
	Net Cooling Capacity - Btuh	¹ 57,000	¹ 59,000	² 72,000
	ARI Rated Air Flow - cfm	1,850	2,000	2,250
	³ Sound Rating Number (dB)	82	82	82
	Total Unit Power - kW	6.7	5.4	7.0
	SEER (Btuh/Watt)	¹ 10.0	¹ 13.0	-
EER (Btuh/Watt)		¹ 8.5	¹ 11.0	² 10.3
Refrigerant	Type	R-22	R-22	R-22
	Charge Furnished	6 lbs. 3 oz.	11 lbs. 5 oz.	11 lbs. 3 oz.
Compressor Type (one per unit)		Scroll	Scroll	Scroll
Outdoor Coil	Net face area - sq. ft.	15.6	15.6	19.27
	Tube diameter - in.	3/8	3/8	3/8
	Number of rows	1.0	2.0	1.4
	Fins / inch	20	20	20
Outdoor Coil Fan	Motor HP	1/3	1/3	1/3
	Motor rpm	1075	1075	1075
	Total motor watts	370	370	405
	Diameter - in. / No. of blades	24 - 3	24 - 3	24 - 3
	Total air volume - cfm	4,300	4,300	4,800
Indoor Coil	Net face area - sq. ft.	7.78	7.78	9.7
	Tube diameter - in.	3/8	3/8	3/8
	Number of rows	2	4	3
	Fins per inch	14	14	14
Drain Connection (no. and size) - in.		(1) 3/4 NPT	(1) 3/4 NPT	(1) 3/4 NPT
Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head		
⁴ Indoor Blower & Drive Selection	Nominal Motor HP	1.5 hp, 2 hp	1.5 hp, ⁵ 2 hp	1.5 hp, 2 hp
	Maximum Usable Motor HP	1.72 hp, 2.3 hp	1.72 hp, 2.3 hp	1.72 hp, 2.3 hp
	Wheel nominal diameter x width - in.	10 x 10	10 x 10	10 x 10
	Available Drive Kits	kit #1 - 673 - 1010 rpm kit #2 - 745 - 1117 rpm kit #3 - 833 - 1250 rpm	kit #4 - 968 - 1340 rpm kit #5 - 897 - 1346 rpm kit #6 - 1071 - 1429 rpm	kit #7 - 1212 - 1548 rpm kit #8 - 1193 - 1591 rpm
Filters	Type	Disposable	Disposable	Disposable
	Number and size - in.	(4) 16 x 20 x 2	(4) 16 x 20 x 2	(4) 20 x 20 x 2
Electrical Characteristics - 60 Hz		208/230V & 460V 3 phase	208/230V 1 phase 208/230V, 460V & 575V 3 phase	208/230V, 460V & 575V 3 phase

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

¹ Certified in accordance with the USE certification program, which is based on ARI Standard 210/240; 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

² Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure.

³ Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

⁴ Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor hp required. Maximum usable hp of motors furnished are shown. In Canada, nominal motor hp is also maximum usable motor hp output. If motors of comparable hp are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

⁵ 2 hp blower motor is not available for 208/230V-1ph applications.

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (economizer, etc.)

2 - Any field installed accessories air resistance (electric heat, duct resistance, diffuser, etc.)

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds					
	208 VOLTS			230 VOLTS		
	High	Medium	Low	High	Medium	Low
2 and 2.5 Ton Standard Efficiency (Down-Flow)				TCA024S and TCA030S		
0.0	1230	975	845	1425	1125	910
0.1	1220	940	815	1395	1110	875
0.2	1205	910	775	1375	1085	845
0.3	1185	880	730	1350	1055	815
0.4	1155	845	680	1320	1010	780
0.5	1115	800	---	1280	955	740
0.6	1060	750	---	1225	895	690
0.7	985	685	---	1150	830	---
0.8	890	---	---	1050	755	---
0.9	770	---	---	920	680	---
1.0	---	---	---	760	---	---
2 and 2.5 Ton Standard Efficiency (Horizontal)				TCA024S and TCA030S		
0.0	1165	925	800	1350	1065	865
0.1	1155	895	770	1325	1055	830
0.2	1140	865	735	1300	1030	800
0.3	1125	835	695	1280	1000	770
0.4	1095	800	645	1250	955	740
0.5	1055	760	---	1215	905	700
0.6	1005	710	---	1160	850	655
0.7	935	650	---	1090	785	---
0.8	845	---	---	995	720	---
0.9	730	---	---	875	645	---
1.0	---	---	---	720	---	---

BLOWER DATA - DIRECT DRIVE**3-4 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds								
	208 VOLTS			230 VOLTS			460/575 VOLTS		
	High	Medium	Low	High	Medium	Low	High	Medium	Low
3 and 4 Ton Basic Efficiency (Down-Flow)					TCA036B and TCA048B				
0.0	2225	1844	1330	2025	1635	1145	2125	1750	1220
0.1	2140	1805	1325	1965	1605	1145	2075	1715	1215
0.2	2070	1770	1305	1910	1575	1135	2025	1680	1205
0.3	2010	1730	1275	1855	1545	1105	1975	1640	1185
0.4	1950	1680	1225	1800	1500	1055	1915	1595	1155
0.5	1885	1620	1165	1740	1445	995	1850	1540	1105
0.6	1805	1540	1085	1665	1370	910	1770	1475	1040
0.7	1705	1440	990	1575	1280	810	1680	1400	950
0.8	1580	1315	---	1460	1165	---	1570	1310	---
0.9	1425	1155	---	1325	1025	---	1445	1210	---
1.0	1230	---	---	1160	---	---	1300	---	---
3 and 4 Ton Basic Efficiency (Horizontal)					TCA036B and TCA048B				
0.0	2110	1760	1265	1920	1560	1090	2125	1770	1265
0.1	2025	1715	1255	1855	1525	1090	2055	1720	1245
0.2	1955	1675	1235	1805	1490	1075	1990	1675	1230
0.3	1900	1635	1205	1755	1455	1045	1930	1635	1210
0.4	1840	1585	1165	1700	1415	1000	1865	1590	1180
0.5	1775	1525	1100	1640	1355	940	1795	1535	1130
0.6	1690	1440	1020	1560	1280	855	1715	1465	1050
0.7	1580	1330	920	1455	1180	750	1620	1370	935
0.8	1435	1180	---	1325	1050	---	1500	1240	---
0.9	1245	995	---	1155	885	---	1365	1075	---
1.0	1000	---	---	940	---	---	1195	---	---
3 and 4 Ton Standard Efficiency (Down-Flow)					TCA036S and TCA048S				
0.0	2175	1825	1330	1990	1625	1145	2100	1735	1220
0.1	2100	1790	1320	1935	1595	1145	2050	1705	1215
0.2	2040	1755	1300	1885	1565	1130	2000	1665	1205
0.3	1980	1710	1265	1830	1530	1095	1945	1625	1180
0.4	1915	1660	1215	1775	1485	1050	1885	1575	1145
0.5	1850	1595	1150	1710	1425	980	1815	1520	1095
0.6	1765	1510	1070	1630	1350	900	1735	1450	1025
0.7	1660	1405	975	1540	1255	800	1640	1375	940
0.8	1535	1280	---	1425	1140	---	1530	1285	---
0.9	1375	1120	---	1285	1000	---	1405	1185	---
1.0	1180	---	---	1125	---	---	1260	---	---
3 and 4 Ton Standard Efficiency (Horizontal)					TCA036S and TCA048S				
0.0	2060	1740	1265	1890	1545	1090	2085	1745	1260
0.1	1990	1700	1255	1830	1515	1090	2020	1700	1240
0.2	1930	1660	1230	1780	1480	1070	1960	1660	1225
0.3	1870	1615	1200	1730	1445	1040	1900	1620	1205
0.4	1810	1565	1150	1675	1400	995	1835	1575	1170
0.5	1740	1500	1090	1610	1340	930	1760	1515	1115
0.6	1650	1410	1010	1530	1260	845	1680	1440	1035
0.7	1535	1295	905	1420	1160	745	1580	1340	915
0.8	1385	1150	---	1290	1025	---	1460	1210	---
0.9	1195	965	---	1120	865	---	1320	1045	---
1.0	960	---	---	910	---	---	1155	---	---

BLOWER DATA - DIRECT DRIVE**5 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

- 1 - Any factory installed options air resistance (electric heat, economizer, etc.)
- 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

External Static Pressure (in. w.g.)	Air Volume (cfm) at Various Blower Speeds					
	208 VOLTS		230 VOLTS		460/575 VOLTS	
	High	Low	High	Low	High	Low
5 Ton Basic Efficiency (Down-Flow)						TCA060B
0.0	2360	1970	2180	1670	2300	1745
0.1	2325	1935	2145	1655	2180	1710
0.2	2290	1910	2110	1650	2090	1690
0.3	2250	1880	2080	1640	2035	1680
0.4	2210	1855	2045	1630	1995	1670
0.5	2165	1825	2005	1610	1965	1655
0.6	2110	1785	1960	1580	1940	1635
0.7	2045	1735	1905	1540	1905	1600
0.8	1970	1670	1835	1480	1855	1545
0.9	1875	1590	1750	1405	1780	1465
1.0	1765	---	1645	---	1670	---
5 Ton Basic Efficiency (Horizontal)						TCA060B
0.0	2235	1890	2070	1600	2285	1800
0.1	2195	1870	2030	1600	2225	1800
0.2	2155	1845	1990	1595	2170	1790
0.3	2110	1815	1945	1580	2120	1775
0.4	2055	1775	1900	1555	2070	1745
0.5	2000	1725	1850	1525	2020	1710
0.6	1930	1670	1795	1480	1965	1660
0.7	1855	1610	1730	1425	1895	1600
0.8	1770	1535	1650	1360	1820	1525
0.9	1675	1450	1560	1280	1730	1440
1.0	1565	---	1460	---	1620	---
5 Ton Standard Efficiency (Down-Flow)						TCA060S
0.0	2315	1935	2140	1655	2155	1715
0.1	2280	1910	2110	1650	2085	1695
0.2	2245	1885	2080	1645	2035	1685
0.3	2205	1860	2045	1635	2000	1675
0.4	2160	1830	2005	1615	1970	1660
0.5	2105	1790	1965	1590	1940	1640
0.6	2045	1745	1910	1555	1905	1610
0.7	1970	1685	1845	1500	1855	1565
0.8	1885	1615	1765	1435	1790	1495
0.9	1785	1525	1675	1350	1700	1405
1.0	1665	---	1565	---	1580	---
5 Ton Standard Efficiency (Horizontal)						TCA060S
0.0	2190	1870	2030	1600	2215	1800
0.1	2150	1850	1990	1595	2165	1796
0.2	2105	1820	1950	1585	2120	1780
0.3	2055	1780	1905	1565	2070	1750
0.4	2000	1735	1860	1535	2020	1715
0.5	1935	1685	1805	1495	1965	1670
0.6	1865	1625	1740	1450	1900	1615
0.7	1785	1560	1670	1390	1830	1550
0.8	1695	1485	1590	1320	1750	1475
0.9	1600	1400	1500	1240	1650	1385
1.0	1485	---	1395	---	1535	---

BLOWER DATA - BELT DRIVE**3 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**3 Ton Basic Efficiency (Down-Flow)****TCA036B**

Air Volume (cfm)	External Static (in.w.g.)																
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
	Field Furnished				Low Static – Drive Kit #1												Drive Kit #5
900	480	0.10	590	0.15	690	0.25	780	0.30	860	0.40	935	0.55	1005	0.65	1065	0.75	
1000	510	0.10	610	0.20	705	0.25	790	0.35	870	0.45	945	0.55	1010	0.65	1075	0.80	
1100	540	0.15	635	0.20	720	0.30	805	0.35	880	0.45	955	0.60	1020	0.70	1085	0.85	
1200	570	0.15	660	0.25	740	0.30	820	0.40	895	0.50	965	0.60	1030	0.75	1095	0.85	
1300	605	0.20	685	0.25	765	0.35	840	0.45	910	0.55	980	0.65	1045	0.80	1105	0.90	
1400	640	0.25	715	0.30	790	0.40	860	0.50	930	0.60	995	0.70	1055	0.85	1115	0.95	
1500	675	0.30	745	0.35	815	0.45	880	0.55	950	0.65	1010	0.75	1070	0.90	1130	1.00	

0.90 to 1.60 in. w.g.**3 Ton Basic Efficiency (Down-Flow)****TCA036B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #5									Field Furnished						
900	1125	0.90	1185	1.00	1240	1.15	1290	1.30	1340	1.45	1390	1.60	1435	1.75	1480	1.95
1000	1135	0.90	1190	1.05	1245	1.20	1300	1.35	1350	1.50	1395	1.65	1440	1.80	1485	1.95
1100	1145	0.95	1200	1.10	1255	1.25	1305	1.40	1355	1.55	1405	1.70	1450	1.85	1495	2.05
1200	1155	1.00	1210	1.15	1265	1.30	1315	1.45	1365	1.60	1410	1.75	1460	1.95	1505	2.10
1300	1165	1.05	1220	1.20	1270	1.35	1325	1.50	1375	1.65	1420	1.80	1465	2.00	1510	2.15
1400	1175	1.10	1230	1.25	1280	1.40	1335	1.55	1380	1.70	1430	1.90	1475	2.05	1520	2.25
1500	1185	1.15	1240	1.30	1295	1.45	1345	1.60	1390	1.80	1440	1.95	1485	2.15	1530	2.30

0.10 to 0.80 in. w.g.**3 Ton Basic Efficiency (Horizontal)****TCA036B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #1									
900	475	0.10	565	0.15	650	0.20	725	0.30	800	0.35	870	0.45	930	0.55	990	0.65
1000	510	0.10	590	0.15	665	0.25	740	0.30	815	0.40	880	0.50	940	0.60	1000	0.70
1100	545	0.15	615	0.20	690	0.25	760	0.35	825	0.40	890	0.50	950	0.60	1010	0.75
1200	585	0.20	650	0.25	715	0.30	780	0.40	845	0.45	905	0.55	965	0.65	1020	0.75
1300	625	0.25	680	0.30	740	0.35	800	0.40	860	0.50	920	0.60	980	0.70	1030	0.80
1400	665	0.30	715	0.35	770	0.40	830	0.50	885	0.55	940	0.65	995	0.75	1045	0.85
1500	705	0.35	750	0.40	805	0.45	855	0.55	910	0.60	960	0.70	1010	0.80	1065	0.90

0.90 to 1.60 in. w.g.**3 Ton Basic Efficiency (Horizontal)****TCA036B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #5															Field
900	1045	0.75	1100	0.90	1150	1.00	1195	1.10	1240	1.25	1285	1.40	1325	1.50	1365	1.65
1000	1055	0.80	1105	0.90	1155	1.05	1205	1.15	1250	1.30	1295	1.45	1335	1.55	1375	1.70
1100	1065	0.85	1115	0.95	1165	1.10	1215	1.20	1260	1.35	1305	1.50	1345	1.60	1385	1.75
1200	1075	0.90	1125	1.00	1175	1.15	1220	1.25	1270	1.40	1310	1.55	1355	1.70	1395	1.80
1300	1085	0.90	1135	1.05	1185	1.20	1230	1.30	1275	1.45	1320	1.60	1365	1.75	1405	1.90
1400	1100	1.00	1150	1.10	1195	1.25	1240	1.35	1285	1.50	1330	1.65	1370	1.80	1415	1.95
1500	1115	1.05	1160	1.15	1210	1.30	1255	1.45	1295	1.55	1340	1.70	1380	1.85	1420	2.00

BLOWER DATA - BELT DRIVE**3 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**3 Ton Standard Efficiency (Down-Flow)****TCA036S**

Air Volume (cfm)	External Static (in.w.g.)																
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
	Field Furnished				Low Static – Drive Kit #1												Drive Kit #5
900	485	0.10	595	0.15	690	0.20	780	0.30	860	0.40	930	0.50	1000	0.60	1065	0.75	
1000	520	0.10	615	0.20	705	0.25	790	0.35	870	0.45	945	0.55	1010	0.65	1075	0.75	
1100	550	0.15	640	0.20	725	0.30	805	0.35	885	0.45	955	0.55	1020	0.70	1085	0.80	
1200	585	0.20	665	0.25	745	0.30	825	0.40	900	0.50	965	0.60	1030	0.70	1095	0.85	
1300	620	0.20	695	0.30	770	0.35	845	0.45	915	0.55	980	0.65	1045	0.75	1105	0.90	
1400	660	0.25	730	0.35	795	0.40	865	0.50	935	0.60	995	0.70	1060	0.80	1120	0.95	
1500	695	0.30	760	0.40	825	0.45	890	0.55	955	0.65	1015	0.75	1075	0.85	1135	1.00	

0.90 to 1.60 in. w.g.**3 Ton Standard Efficiency (Down-Flow)****TCA036S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #5										Field Furnished					
900	1125	0.85	1180	1.00	1230	1.10	1285	1.25	1330	1.35	1380	1.50	1425	1.65	1465	1.80
1000	1130	0.90	1190	1.00	1240	1.15	1295	1.30	1340	1.40	1390	1.60	1435	1.75	1475	1.85
1100	1140	0.90	1200	1.05	1250	1.20	1300	1.35	1350	1.50	1400	1.65	1445	1.80	1485	1.95
1200	1150	0.95	1210	1.10	1260	1.25	1310	1.40	1360	1.55	1410	1.70	1455	1.85	1495	2.00
1300	1165	1.00	1220	1.15	1270	1.30	1320	1.45	1370	1.60	1415	1.75	1465	1.90	1505	2.05
1400	1175	1.05	1230	1.20	1280	1.35	1330	1.50	1380	1.65	1425	1.80	1470	1.95	1515	2.15
1500	1190	1.15	1240	1.25	1295	1.40	1345	1.55	1390	1.70	1435	1.90	1480	2.05	1525	2.20

0.10 to 0.80 in. w.g.**3 Ton Standard Efficiency (Horizontal)****TCA036S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #1									
900	480	0.10	570	0.15	655	0.20	735	0.30	810	0.35	875	0.45	940	0.55	1000	0.65
1000	520	0.15	595	0.15	675	0.25	750	0.30	820	0.40	890	0.50	950	0.60	1010	0.70
1100	555	0.15	625	0.20	695	0.25	765	0.35	835	0.45	900	0.50	960	0.60	1020	0.75
1200	595	0.20	660	0.25	725	0.30	790	0.40	850	0.45	915	0.55	975	0.65	1030	0.75
1300	635	0.25	690	0.30	750	0.35	810	0.40	870	0.50	930	0.60	990	0.70	1045	0.80
1400	675	0.30	730	0.35	785	0.40	840	0.50	895	0.55	950	0.65	1005	0.75	1060	0.85
1500	720	0.35	765	0.40	815	0.45	870	0.55	920	0.60	970	0.70	1025	0.80	1075	0.95

0.90 to 1.60 in. w.g.**3 Ton Standard Efficiency (Horizontal)****TCA036S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #5															Field
900	1055	0.75	1105	0.90	1155	1.00	1200	1.10	1245	1.25	1285	1.35	1325	1.50	1365	1.60
1000	1065	0.80	1115	0.90	1165	1.05	1210	1.15	1255	1.30	1300	1.40	1340	1.55	1380	1.70
1100	1075	0.85	1125	0.95	1175	1.10	1220	1.20	1265	1.35	1310	1.50	1350	1.60	1395	1.75
1200	1085	0.90	1135	1.00	1185	1.15	1235	1.25	1280	1.40	1320	1.55	1365	1.70	1405	1.85
1300	1095	0.95	1145	1.05	1195	1.20	1245	1.30	1290	1.45	1330	1.60	1375	1.75	1415	1.90
1400	1110	1.00	1160	1.10	1210	1.25	1255	1.40	1300	1.50	1340	1.65	1385	1.80	1425	1.95
1500	1125	1.05	1175	1.15	1220	1.30	1265	1.45	1310	1.60	1355	1.75	1395	1.85	1435	2.05

BLOWER DATA - BELT DRIVE**4 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD: 1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**4 Ton Basic Efficiency (Down-Flow)****TCA048B**

Air Volume (cfm)	External Static (in.w.g.)											
	0.10		0.20		0.30		0.40		0.50		0.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static - Drive Kit #2					
1200	570	0.15	655	0.20	735	0.30	815	0.35	885	0.45	955	0.55
1300	605	0.20	680	0.25	760	0.30	830	0.40	900	0.50	965	0.60
1400	640	0.25	710	0.30	785	0.35	855	0.45	920	0.55	985	0.65
1500	675	0.25	740	0.35	810	0.40	875	0.50	940	0.60	1000	0.70
1600	710	0.30	775	0.40	835	0.45	900	0.55	960	0.65	1020	0.75
1700	745	0.40	805	0.45	865	0.50	925	0.60	985	0.70	1040	0.80
1800	785	0.45	840	0.50	895	0.60	955	0.70	1010	0.80	1065	0.90
1900	820	0.50	875	0.60	930	0.65	980	0.75	1035	0.85	1090	0.95
2000	860	0.60	910	0.65	960	0.75	1010	0.85	1065	0.95	1115	1.05

0.90 to 1.60 in. w.g.**4 Ton Basic Efficiency (Down-Flow)****TCA048B**

Air Volume (cfm)	External Static (in.w.g.)											
	0.90		1.0		1.10		1.20		1.30		1.40	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static - Drive Kit #6						Field Furnished					
1200	1135	0.85	1190	1.00	1240	1.10	1290	1.25	1340	1.35	1385	1.50
1300	1145	0.90	1200	1.05	1250	1.15	1300	1.30	1350	1.45	1395	1.55
1400	1160	0.95	1210	1.10	1260	1.20	1310	1.35	1360	1.50	1405	1.65
1500	1170	1.00	1225	1.15	1275	1.30	1325	1.40	1370	1.55	1415	1.70
1600	1185	1.10	1235	1.20	1285	1.35	1335	1.50	1380	1.60	1425	1.75
1700	1200	1.15	1255	1.30	1300	1.40	1350	1.55	1395	1.70	1440	1.85
1800	1220	1.25	1270	1.35	1315	1.50	1365	1.65	1410	1.80	1450	1.90
1900	1240	1.30	1285	1.45	1335	1.60	1380	1.75	1420	1.85	1465	2.00
2000	1260	1.40	1305	1.55	1350	1.70	1395	1.80	1440	2.00	1480	2.10

0.10 to 0.80 in. w.g.**4 Ton Basic Efficiency (Horizontal)****TCA048B**

Air Volume (cfm)	External Static (in.w.g.)											
	0.10		0.20		0.30		0.40		0.50		0.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static - Drive Kit #2					
1200	580	0.15	645	0.20	710	0.25	770	0.35	835	0.40	895	0.50
1300	620	0.20	675	0.25	735	0.30	795	0.35	855	0.45	910	0.50
1400	660	0.25	710	0.30	765	0.35	820	0.40	875	0.50	930	0.55
1500	700	0.30	745	0.35	800	0.40	850	0.50	900	0.55	950	0.60
1600	740	0.35	785	0.40	830	0.45	880	0.55	930	0.60	975	0.70
1700	780	0.45	820	0.50	865	0.55	910	0.60	955	0.70	1000	0.75
1800	820	0.50	860	0.55	900	0.60	945	0.70	985	0.75	1030	0.85
1900	860	0.60	900	0.65	940	0.70	980	0.80	1020	0.85	1060	0.95
2000	905	0.70	940	0.75	975	0.80	1015	0.90	1050	0.95	1090	1.05

0.90 to 1.60 in. w.g.**4 Ton Basic Efficiency (Horizontal)****TCA048B**

Air Volume (cfm)	External Static (in.w.g.)											
	0.90		1.0		1.10		1.20		1.30		1.40	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Drive Kit #2						High Static - Drive Kit #6					
1200	1060	0.75	1110	0.85	1155	0.95	1205	1.05	1245	1.15	1290	1.30
1300	1070	0.80	1120	0.90	1165	1.00	1210	1.10	1255	1.20	1300	1.35
1400	1085	0.85	1130	0.95	1180	1.05	1225	1.15	1265	1.25	1310	1.40
1500	1100	0.90	1145	1.00	1190	1.10	1235	1.20	1280	1.35	1320	1.45
1600	1115	0.95	1160	1.05	1205	1.15	1250	1.30	1290	1.40	1330	1.50
1700	1135	1.05	1180	1.15	1220	1.25	1265	1.35	1305	1.50	1345	1.60
1800	1155	1.10	1200	1.20	1240	1.35	1280	1.45	1320	1.55	1360	1.70
1900	1180	1.20	1220	1.30	1260	1.40	1300	1.55	1340	1.65	1375	1.75
2000	1205	1.30	1245	1.40	1280	1.50	1320	1.65	1355	1.75	1395	1.90

BLOWER DATA - BELT DRIVE**4 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**4 Ton Standard Efficiency (Down-Flow)****TCA048S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #2									
1200	580	0.15	660	0.20	740	0.30	815	0.35	885	0.45	955	0.55	1015	0.60	1075	0.70
1300	620	0.20	690	0.25	765	0.30	835	0.40	905	0.50	970	0.55	1030	0.65	1090	0.75
1400	655	0.25	720	0.30	790	0.35	855	0.45	925	0.55	985	0.60	1045	0.70	1105	0.85
1500	690	0.30	755	0.35	820	0.40	880	0.50	945	0.60	1005	0.65	1060	0.75	1120	0.90
1600	730	0.35	790	0.40	850	0.45	910	0.55	965	0.65	1025	0.75	1080	0.85	1135	0.95
1700	770	0.40	825	0.45	880	0.55	935	0.60	990	0.70	1045	0.80	1100	0.90	1155	1.00
1800	810	0.45	860	0.55	910	0.60	965	0.70	1020	0.80	1070	0.85	1125	1.00	1175	1.10
1900	845	0.55	895	0.60	945	0.70	995	0.75	1045	0.85	1095	0.95	1145	1.05	1195	1.15
2000	885	0.65	935	0.70	980	0.80	1030	0.85	1075	0.95	1125	1.05	1170	1.15	1220	1.25

0.90 to 1.60 in. w.g.**4 Ton Standard Efficiency (Down-Flow)****TCA048S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #6															Field
1200	1135	0.85	1185	0.95	1240	1.05	1285	1.15	1335	1.30	1380	1.45	1425	1.55	1465	1.70
1300	1145	0.90	1200	1.00	1250	1.10	1300	1.25	1345	1.35	1390	1.50	1435	1.60	1475	1.75
1400	1160	0.95	1210	1.05	1260	1.15	1310	1.30	1355	1.40	1400	1.55	1445	1.70	1490	1.85
1500	1170	1.00	1225	1.10	1275	1.25	1320	1.35	1370	1.50	1415	1.60	1455	1.75	1500	1.90
1600	1185	1.05	1240	1.20	1285	1.30	1335	1.40	1380	1.55	1425	1.70	1470	1.85	1510	1.95
1700	1205	1.10	1255	1.25	1300	1.35	1350	1.50	1395	1.65	1440	1.80	1480	1.90	1520	2.05
1800	1220	1.20	1270	1.30	1320	1.45	1365	1.60	1410	1.70	1450	1.85	1495	2.00	1535	2.15
1900	1240	1.30	1290	1.40	1335	1.55	1380	1.65	1425	1.80	1465	1.95	1510	2.10	1550	2.25
2000	1265	1.40	1310	1.50	1355	1.65	1395	1.75	1440	1.90	1480	2.05	1525	2.20	1565	2.35

0.10 to 0.80 in. w.g.**4 Ton Standard Efficiency (Horizontal)****TCA048S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #2									
1200	590	0.15	655	0.20	715	0.25	780	0.35	840	0.40	900	0.50	960	0.55	1015	0.65
1300	630	0.20	685	0.25	745	0.30	805	0.35	860	0.45	920	0.50	975	0.60	1030	0.70
1400	675	0.25	725	0.30	775	0.35	830	0.40	885	0.50	940	0.55	990	0.65	1045	0.75
1500	715	0.30	760	0.35	810	0.40	860	0.50	910	0.55	960	0.60	1010	0.70	1060	0.80
1600	755	0.40	800	0.45	845	0.50	890	0.55	940	0.60	985	0.70	1035	0.80	1080	0.85
1700	800	0.45	840	0.50	880	0.55	925	0.60	970	0.70	1015	0.75	1060	0.85	1100	0.95
1800	840	0.55	880	0.60	920	0.65	960	0.70	1000	0.75	1040	0.85	1085	0.95	1125	1.00
1900	885	0.60	920	0.65	955	0.75	995	0.80	1030	0.85	1070	0.95	1110	1.00	1150	1.10
2000	925	0.70	960	0.75	995	0.85	1030	0.90	1065	0.95	1105	1.05	1140	1.10	1180	1.20

0.90 to 1.60 in. w.g.**4 Ton Standard Efficiency (Horizontal)****TCA048S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Drive Kit #2		High Static – Drive Kit #6													
1200	1065	0.75	1115	0.85	1165	0.95	1210	1.05	1255	1.20	1295	1.30	1335	1.40	1375	1.50
1300	1080	0.80	1130	0.90	1175	1.00	1220	1.10	1265	1.25	1305	1.35	1345	1.45	1385	1.60
1400	1095	0.85	1140	0.95	1190	1.05	1235	1.15	1275	1.30	1320	1.40	1360	1.50	1400	1.65
1500	1110	0.90	1155	1.00	1200	1.10	1245	1.20	1290	1.35	1330	1.45	1370	1.60	1410	1.70
1600	1125	0.95	1170	1.05	1215	1.15	1260	1.30	1300	1.40	1345	1.55	1385	1.65	1420	1.80
1700	1145	1.05	1190	1.15	1235	1.25	1275	1.35	1315	1.45	1355	1.60	1395	1.70	1435	1.85
1800	1170	1.10	1210	1.20	1250	1.30	1290	1.45	1335	1.55	1370	1.70	1410	1.80	1450	1.95
1900	1190	1.20	1230	1.30	1270	1.40	1310	1.55	1350	1.65	1390	1.80	1425	1.90	1465	2.05
2000	1220	1.30	1255	1.40	1295	1.50	1330	1.65	1370	1.75	1405	1.85	1445	2.00	1480	2.15

BLOWER DATA - BELT DRIVE**5 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**5 Ton Basic Efficiency (Down-Flow)****TCA060B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #3									
1600	705	0.30	765	0.35	825	0.40	880	0.50	935	0.55	990	0.60	1040	0.70	1090	0.75
1700	740	0.35	800	0.40	855	0.50	910	0.55	960	0.60	1010	0.70	1060	0.75	1110	0.85
1800	780	0.40	835	0.50	885	0.55	940	0.60	990	0.70	1035	0.75	1085	0.85	1130	0.90
1900	815	0.50	870	0.55	920	0.60	970	0.70	1015	0.75	1065	0.85	1110	0.90	1155	1.00
2000	855	0.55	905	0.60	950	0.70	1000	0.75	1045	0.85	1090	0.90	1135	1.00	1180	1.10
2100	890	0.65	940	0.70	985	0.80	1030	0.85	1075	0.95	1120	1.00	1160	1.10	1205	1.20
2200	930	0.70	975	0.80	1020	0.85	1065	0.95	1105	1.05	1145	1.10	1190	1.20	1230	1.30
2300	970	0.80	1010	0.90	1055	0.95	1095	1.05	1135	1.15	1175	1.20	1215	1.30	1255	1.40
2400	1005	0.90	1050	1.00	1090	1.10	1130	1.15	1170	1.25	1210	1.35	1245	1.45	1285	1.55

0.90 to 1.60 in. w.g.**5 Ton Basic Efficiency (Down-Flow)****TCA060B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Low Static – Drive Kit #3				High Static – Drive Kit #7											
1600	1135	0.85	1185	0.95	1230	1.00	1275	1.10	1315	1.20	1355	1.30	1400	1.40	1440	1.50
1700	1155	0.90	1200	1.00	1245	1.10	1290	1.20	1330	1.30	1370	1.35	1410	1.45	1450	1.60
1800	1175	1.00	1220	1.10	1265	1.15	1305	1.25	1345	1.35	1385	1.45	1425	1.55	1465	1.65
1900	1200	1.10	1240	1.15	1280	1.25	1325	1.35	1365	1.45	1400	1.55	1440	1.65	1480	1.75
2000	1220	1.15	1260	1.25	1300	1.35	1340	1.45	1380	1.55	1420	1.65	1455	1.75	1495	1.85
2100	1245	1.25	1285	1.35	1325	1.45	1360	1.55	1400	1.65	1440	1.75	1475	1.85	1510	1.95
2200	1270	1.40	1310	1.50	1345	1.55	1385	1.65	1420	1.75	1460	1.90	1495	2.00	1530	2.10
2300	1295	1.50	1335	1.60	1370	1.70	1405	1.80	1445	1.90	1480	2.00	1515	2.10	1550	2.20
2400	1320	1.60	1360	1.70	1395	1.80	1430	1.90	1465	2.05	1500	2.15	1535	2.25	1570	2.35

0.10 to 0.80 in. w.g.**5 Ton Basic Efficiency (Horizontal)****TCA060B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished						Low Static – Drive Kit #3									
1600	735	0.35	780	0.40	825	0.45	875	0.50	925	0.55	975	0.65	1025	0.70	1070	0.80
1700	775	0.40	815	0.45	860	0.50	905	0.55	955	0.65	1000	0.70	1045	0.80	1090	0.85
1800	815	0.50	855	0.55	895	0.60	940	0.65	985	0.70	1025	0.80	1070	0.85	1115	0.95
1900	855	0.55	895	0.60	935	0.65	975	0.75	1015	0.80	1055	0.85	1095	0.95	1140	1.05
2000	895	0.65	935	0.70	970	0.75	1010	0.80	1045	0.90	1085	0.95	1125	1.05	1165	1.10
2100	940	0.75	970	0.80	1005	0.85	1045	0.90	1080	1.00	1115	1.05	1155	1.15	1190	1.20
2200	980	0.85	1010	0.90	1045	0.95	1080	1.05	1115	1.10	1150	1.20	1185	1.25	1220	1.35
2300	1020	0.95	1050	1.00	1085	1.10	1115	1.15	1150	1.20	1185	1.30	1215	1.35	1250	1.45
2400	1065	1.10	1095	1.15	1125	1.20	1155	1.30	1185	1.35	1215	1.45	1250	1.50	1280	1.60

0.90 to 1.60 in. w.g.**5 Ton Basic Efficiency (Horizontal)****TCA060B**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Low Static – Drive Kit #3						High Static – Drive Kit #7									
1600	1120	0.90	1165	1.00	1210	1.10	1255	1.20	1295	1.30	1340	1.40	1380	1.50	1420	1.65
1700	1135	0.95	1180	1.05	1225	1.15	1270	1.25	1310	1.35	1350	1.45	1390	1.60	1430	1.70
1800	1155	1.00	1200	1.10	1240	1.20	1285	1.30	1325	1.45	1365	1.55	1405	1.65	1440	1.75
1900	1180	1.10	1220	1.20	1260	1.30	1300	1.40	1340	1.50	1380	1.65	1415	1.75	1455	1.85
2000	1205	1.20	1245	1.30	1280	1.40	1320	1.50	1360	1.60	1395	1.70	1435	1.85	1470	1.95
2100	1230	1.30	1265	1.40	1305	1.50	1340	1.60	1380	1.70	1415	1.80	1450	1.95	1485	2.05
2200	1255	1.40	1290	1.50	1330	1.60	1365	1.70	1400	1.85	1435	1.95	1470	2.05	1505	2.15
2300	1285	1.55	1320	1.65	1355	1.75	1385	1.85	1420	1.95	1455	2.05	1490	2.20	1520	2.30
2400	1315	1.70	1345	1.75	1380	1.90	1415	2.00	1445	2.10	1480	2.20	1510	2.30	1545	2.45

BLOWER DATA - BELT DRIVE**5 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD: 1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**5 Ton Standard Efficiency (Down-Flow)****TCA060S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished				Low Static – Drive Kit #3											
1600	740	0.35	790	0.35	845	0.40	895	0.45	945	0.50	995	0.55	1040	0.65	1090	0.70
1700	780	0.40	830	0.45	880	0.50	925	0.55	975	0.60	1020	0.65	1065	0.70	1110	0.75
1800	820	0.45	865	0.50	915	0.55	960	0.60	1005	0.65	1050	0.70	1090	0.75	1135	0.85
1900	860	0.55	905	0.60	950	0.65	990	0.70	1035	0.75	1075	0.80	1120	0.85	1160	0.95
2000	905	0.60	945	0.65	985	0.70	1025	0.75	1065	0.85	1110	0.90	1150	0.95	1190	1.05
2100	945	0.70	985	0.75	1020	0.80	1060	0.85	1100	0.95	1140	1.00	1180	1.05	1215	1.10
2200	985	0.80	1025	0.85	1060	0.90	1100	1.00	1135	1.05	1170	1.10	1210	1.15	1245	1.25
2300	1025	0.90	1065	1.00	1100	1.05	1135	1.10	1170	1.15	1205	1.20	1240	1.30	1275	1.35
2400	1070	1.05	1105	1.10	1135	1.15	1170	1.20	1205	1.30	1240	1.35	1275	1.45	1310	1.50

0.90 to 1.60 in. w.g.**5 Ton Standard Efficiency (Down-Flow)****TCA060S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Low Static – Drive Kit #3				High Static – Drive Kit #7											
1600	1135	0.75	1180	0.85	1220	0.90	1265	0.95	1305	1.05	1345	1.15	1385	1.20	1425	1.30
1700	1155	0.85	1200	0.90	1240	0.95	1280	1.05	1320	1.10	1360	1.20	1400	1.30	1440	1.40
1800	1180	0.90	1220	1.00	1260	1.05	1300	1.10	1340	1.20	1380	1.30	1415	1.35	1455	1.45
1900	1200	1.00	1240	1.05	1280	1.15	1320	1.20	1360	1.30	1395	1.35	1435	1.45	1470	1.55
2000	1225	1.10	1265	1.15	1305	1.25	1340	1.30	1380	1.40	1415	1.45	1450	1.55	1485	1.65
2100	1255	1.20	1290	1.25	1330	1.35	1365	1.40	1400	1.50	1435	1.60	1470	1.65	1505	1.75
2200	1280	1.30	1320	1.40	1355	1.45	1390	1.55	1425	1.60	1460	1.70	1495	1.80	1525	1.85
2300	1310	1.45	1345	1.50	1380	1.60	1415	1.65	1450	1.75	1480	1.85	1515	1.90	1550	2.00
2400	1340	1.55	1375	1.65	1410	1.75	1440	1.80	1475	1.90	1505	1.95	1540	2.05	1570	2.15

0.10 to 0.80 in. w.g.**5 Ton Standard Efficiency (Horizontal)****TCA060S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished				Low Static – Drive Kit #3											
1600	760	0.35	805	0.40	850	0.45	900	0.50	950	0.55	1000	0.65	1050	0.70	1100	0.80
1700	805	0.45	845	0.50	885	0.50	930	0.55	980	0.65	1025	0.70	1075	0.80	1120	0.85
1800	845	0.50	885	0.55	925	0.60	965	0.65	1010	0.70	1055	0.80	1100	0.85	1145	0.95
1900	890	0.60	925	0.65	965	0.70	1000	0.75	1040	0.80	1085	0.90	1125	0.95	1170	1.05
2000	935	0.70	965	0.75	1000	0.80	1040	0.85	1075	0.90	1115	0.95	1155	1.05	1195	1.15
2100	975	0.80	1010	0.85	1040	0.90	1075	0.95	1110	1.00	1145	1.05	1185	1.15	1225	1.25
2200	1020	0.90	1050	0.95	1080	1.00	1115	1.05	1145	1.15	1180	1.20	1215	1.25	1250	1.35
2300	1065	1.05	1095	1.10	1120	1.15	1155	1.20	1185	1.25	1215	1.30	1250	1.40	1285	1.50
2400	1110	1.20	1135	1.25	1165	1.30	1190	1.35	1220	1.40	1255	1.45	1285	1.55	1315	1.60

0.90 to 1.60 in. w.g.**5 Ton Standard Efficiency (Horizontal)****TCA060S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Low Static – Drive Kit #3				High Static – Drive Kit #7											
1600	1150	0.90	1195	1.00	1240	1.10	1285	1.20	1330	1.30	1370	1.40	1410	1.50	1445	1.60
1700	1170	0.95	1215	1.05	1260	1.15	1300	1.25	1345	1.35	1385	1.50	1425	1.60	1460	1.70
1800	1190	1.05	1230	1.15	1275	1.25	1320	1.35	1360	1.45	1400	1.55	1440	1.65	1475	1.80
1900	1210	1.10	1255	1.20	1295	1.30	1335	1.40	1375	1.55	1415	1.65	1455	1.75	1495	1.90
2000	1235	1.20	1275	1.30	1315	1.40	1355	1.50	1395	1.60	1435	1.75	1470	1.85	1510	2.00
2100	1260	1.30	1300	1.40	1340	1.50	1375	1.60	1415	1.75	1450	1.85	1490	1.95	1525	2.10
2200	1290	1.45	1325	1.55	1360	1.60	1400	1.75	1435	1.85	1470	1.95	1510	2.10	1545	2.20
2300	1320	1.55	1355	1.65	1390	1.75	1425	1.85	1460	1.95	1495	2.10	1530	2.20	1565	2.30
2400	1350	1.70	1380	1.80	1415	1.90	1450	2.00	1485	2.10	1515	2.20	1550	2.35	1585	2.45

BLOWER DATA - BELT DRIVE**6 TON**

Blower tables include resistance for base unit with wet indoor coil & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**6 Ton Standard Efficiency (Down-Flow)****TCA072S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished										Low Static – Drive Kit #4					
1900	760	0.45	810	0.50	860	0.55	905	0.60	955	0.70	1000	0.75	1050	0.85	1095	0.90
2000	795	0.50	845	0.60	890	0.65	935	0.70	980	0.75	1025	0.85	1070	0.90	1115	1.00
2100	835	0.60	875	0.65	920	0.70	965	0.80	1005	0.85	1050	0.90	1095	1.00	1135	1.10
2200	870	0.70	910	0.75	950	0.80	995	0.90	1035	0.95	1075	1.00	1115	1.10	1160	1.20
2300	905	0.80	945	0.85	985	0.90	1025	0.95	1065	1.05	1105	1.10	1145	1.20	1180	1.30
2400	940	0.90	980	0.95	1015	1.00	1055	1.10	1090	1.15	1130	1.25	1170	1.30	1205	1.40
2500	975	1.00	1010	1.05	1050	1.10	1085	1.20	1120	1.25	1160	1.35	1195	1.45	1230	1.50
2600	1010	1.10	1045	1.15	1080	1.25	1115	1.30	1155	1.40	1190	1.50	1225	1.55	1260	1.65
2700	1050	1.25	1080	1.30	1115	1.35	1150	1.45	1185	1.55	1220	1.60	1250	1.70	1285	1.80
2800	1085	1.35	1115	1.45	1150	1.50	1180	1.60	1215	1.65	1250	1.75	1280	1.85	1315	1.95
2900	1120	1.50	1155	1.60	1185	1.65	1215	1.75	1245	1.80	1280	1.90	1310	2.00	1340	2.10

0.90 to 1.60 in. w.g.**6 Ton Standard Efficiency (Down-Flow)****TCA072S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Low Static – Drive Kit #4				High Static – Drive Kit #8											
1900	1140	1.00	1180	1.10	1225	1.20	1265	1.25	1305	1.35	1345	1.45	1385	1.55	1420	1.65
2000	1155	1.10	1200	1.15	1240	1.25	1280	1.35	1320	1.45	1360	1.55	1395	1.65	1435	1.75
2100	1175	1.15	1220	1.25	1260	1.35	1300	1.45	1335	1.55	1375	1.65	1410	1.75	1450	1.85
2200	1200	1.25	1240	1.35	1275	1.45	1315	1.55	1355	1.65	1390	1.75	1425	1.85	1460	1.95
2300	1220	1.35	1260	1.45	1295	1.55	1335	1.65	1370	1.75	1405	1.85	1445	2.00	1480	2.10
2400	1245	1.50	1280	1.55	1320	1.70	1355	1.80	1390	1.90	1425	2.00	1460	2.10	1495	2.20
2500	1270	1.60	1305	1.70	1340	1.80	1375	1.90	1410	2.00	1445	2.10	1480	2.20	1510	2.30
2600	1295	1.75	1330	1.85	1365	1.95	1395	2.05	1430	2.15	1465	2.25	1495	2.35	1530	2.45
2700	1320	1.90	1355	2.00	1385	2.05	1420	2.20	1455	2.30	1485	2.40	1520	2.50	1550	2.60
2800	1345	2.00	1380	2.15	1410	2.20	1445	2.35	1475	2.45	1505	2.55	1540	2.65	1570	2.80
2900	1375	2.20	1405	2.30	1435	2.40	1470	2.50	1500	2.60	1530	2.70	1560	2.85	1590	2.95

BLOWER DATA - BELT DRIVE**6 TON**

Blower tables include resistance for base unit with wet indoor coil, & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (electric heat, economizer, etc.)

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.)

Then determine from table the blower motor output and drive required.

0.10 to 0.80 in. w.g.**6 Ton Standard Efficiency (Horizontal)****TCA072S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	Field Furnished				Low Static – Drive Kit #4											
1900	890	0.55	940	0.60	990	0.70	1035	0.75	1080	0.80	1125	0.90	1165	0.95	1205	1.00
2000	930	0.65	980	0.70	1025	0.80	1070	0.85	1115	0.90	1155	1.00	1195	1.05	1235	1.10
2100	975	0.75	1020	0.80	1065	0.90	1110	0.95	1150	1.00	1190	1.10	1230	1.15	1265	1.25
2200	1015	0.85	1060	0.90	1105	1.00	1145	1.05	1185	1.15	1225	1.20	1260	1.30	1300	1.35
2300	1060	0.95	1100	1.05	1140	1.10	1180	1.20	1220	1.25	1260	1.35	1295	1.40	1330	1.50
2400	1100	1.10	1140	1.15	1180	1.25	1220	1.30	1260	1.40	1295	1.50	1330	1.55	1365	1.65
2500	1140	1.20	1180	1.30	1220	1.40	1260	1.45	1295	1.55	1330	1.65	1365	1.70	1400	1.80
2600	1185	1.35	1225	1.45	1260	1.55	1295	1.60	1335	1.70	1365	1.80	1400	1.90	1435	1.95
2700	1225	1.50	1265	1.60	1300	1.70	1335	1.80	1370	1.90	1405	1.95	1435	2.05	1470	2.15
2800	1270	1.70	1305	1.80	1340	1.85	1375	1.95	1410	2.05	1440	2.15	1475	2.25	1505	2.35
2900	1315	1.90	1350	1.95	1380	2.05	1415	2.15	1450	2.25	1480	2.35	1510	2.45	1540	2.55

0.90 to 1.60 in. w.g.**6 Ton Standard Efficiency (Horizontal)****TCA072S**

Air Volume (cfm)	External Static (in.w.g.)															
	0.90		1.0		1.10		1.20		1.30		1.40		1.50		1.60	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static – Drive Kit #8															
1900	1245	1.10	1285	1.15	1320	1.20	1355	1.30	1395	1.35	1430	1.45	1465	1.55	1495	1.60
2000	1275	1.20	1310	1.25	1345	1.35	1385	1.40	1420	1.50	1455	1.55	1485	1.65	1520	1.70
2100	1305	1.30	1340	1.40	1375	1.45	1410	1.55	1445	1.60	1480	1.70	1510	1.75	1545	1.85
2200	1335	1.45	1370	1.50	1405	1.60	1440	1.65	1470	1.75	1505	1.85	1535	1.90	1570	2.00
2300	1365	1.55	1400	1.65	1435	1.75	1470	1.80	1500	1.90	1530	1.95	1565	2.05	1595	2.15
2400	1400	1.70	1435	1.80	1465	1.90	1500	1.95	1530	2.05	1560	2.15	1590	2.20	1620	2.30
2500	1435	1.90	1465	1.95	1495	2.05	1530	2.15	1560	2.20	1590	2.30	1620	2.40	1650	2.50
2600	1465	2.05	1500	2.15	1530	2.25	1560	2.30	1590	2.40	1620	2.50	1650	2.60	1680	2.70
2700	1500	2.25	1530	2.30	1565	2.40	1595	2.50	1620	2.60	1650	2.70	1680	2.80	1710	2.90
2800	1535	2.45	1565	2.50	1595	2.60	1625	2.70	1655	2.80	1685	2.90	1710	3.00	1740	3.10
2900	1570	2.65	1600	2.75	1630	2.85	1660	2.95	1685	3.00	1715	3.10	1745	3.25	1770	3.30

Note - **BOLD** - to operate in this range, 3 hp blower motor is required.**FACTORY INSTALLED BELT DRIVE KIT SPECIFICATIONS**

Motor hp		RPM Range							
Nominal	Maximum	Drive 1	Drive 2	Drive 3	Drive 4	Drive 5	Drive 6	Drive 7	Drive 8
1.5	1.7	673 - 1010	745 - 1117	833 - 1250	968 - 1340	897 - 1346	1071 - 1429	1212 - 1548	1193 - 1591
2	2.3								

*Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor hp required. Maximum usable hp of motors furnished are shown. In Canada, nominal motor hp is also maximum usable motor hp. If motors of comparable hp are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

MINIMUM AIR FLOW WITH ELECTRIC HEAT UNITS

Kw	CFM	
	Downflow	Horizontal
30	2250	2050
22.5	1750	1800
15	1250	1350
7.5	1050	1200

BLOWER DATA

POWER EXHAUST FANS PERFORMANCE

Return Air System Static Pressure in. w.g.	Air Volume Exhausted - cfm											
	T1PWRE10A						T1PWRE10N					
	208V			230V, 460V and 575V			208V			230V, 460V and 575V		
	Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
0	1290	1300	1320	1300	1305	1295	3545	3915	4230	3880	4135	4340
0.1	1045	1055	1055	1040	1050	1055	2880	3215	3580	3255	3550	3755
0.2	805	805	815	805	810	810	2290	2665	3055	2710	3010	3240
0.3	580	580	600	595	590	585	1735	2175	2605	2200	2500	2770
0.4	390	405	400	405	400	410	1165	1660	2175	1685	2010	2325
0.5	245	315	215	240	255	300	530	1045	1710	1120	1510	1885
0.6	155	340	35	90	165	290	---	250	1160	470	990	1420
0.7	145	515	---	---	140	400	---	---	470	---	430	915

OPTIONS / ACCESSORIES AIR RESISTANCE - in. w.g.

Air Volume cfm	Economizer	Electric Heat
800	0.04	0.01
1000	0.04	0.03
1200	0.04	0.06
1400	0.04	0.09
1600	0.04	0.12
1800	0.05	0.15
2000	0.05	0.18
2200	0.05	0.20
2400	0.05	0.22
2600	0.06	0.24
2800	0.06	0.26
3000	0.06	0.28

CEILING DIFFUSER AIR THROW DATA

Air Volume - cfm Model No.	¹ Effective Throw - ft.	
	RTD9-65	FD9-65
800	10 - 17	14 - 18
1000	10 - 17	15 - 20
1200	11 - 18	16 - 22
1400	12 - 19	17 - 24
1600	12 - 20	18 - 25
1800	13 - 21	20 - 28
2000	14 - 23	21 - 29
2200	16 - 25	22 - 30
Model No.	RTD11-95	FD11-95
2600	24 - 29	19 - 24
2800	25 - 30	20 - 28
3000	27 - 33	21 - 29

¹ Effective throw based on terminal velocities of 75 ft. per minute.

CEILING DIFFUSERS AIR RESISTANCE (in. w.g.)

Air Volume cfm	RTD9-65 Step-Down Diffuser			FD9-65 Flush Diffuser	RTD11-95 Step-Down Diffuser			FD11-95 Flush Diffuser
	2 Ends Open	1 Side & 2 Ends Open	All Ends & Sides Open		2 Ends Open	1 Side & 2 Ends Open	All Ends & Sides Open	
800	0.15	0.13	0.11	0.11	---	---	---	---
1000	0.19	0.16	0.14	0.14	---	---	---	---
1200	0.25	0.20	0.17	0.17	---	---	---	---
1400	0.33	0.26	0.20	0.20	---	---	---	---
1600	0.43	0.32	0.20	0.24	---	---	---	---
1800	0.56	0.40	0.30	0.30	0.13	0.11	0.09	0.09
2000	0.73	0.50	0.36	0.36	0.15	0.13	0.11	0.10
2200	0.95	0.63	0.44	0.44	0.18	0.15	0.12	0.12
2400	---	----	---	---	0.21	0.18	0.15	0.14
2600	---	----	---	---	0.24	0.21	0.18	0.17
2800	---	----	---	---	0.27	0.24	0.21	0.20
3000	---	----	---	---	0.32	0.29	0.25	0.25

2 AND 2.5 TON STANDARD EFFICIENCY		TCA024S	TCA030S
Voltage - 60hz		208/230V-1ph	208/230V-1ph
Compressor	Rated Load Amps	10.4	14.1
	Locked Rotor Amps	54	68
Outdoor Fan Motor	Full Load Amps	1.7	1.7
	Locked Rotor Amps	3.1	3.1
Service Outlet 115V GFI		15	15
Indoor Blower Motor	Horsepower	.25	.25
	Rated Load Amps	1.7	1.7
	Locked Rotor Amps	2.2	2.2
¹ Maximum Overcurrent Protection	Unit Only	25	35
	7.5 kW	45	45
	10 kW	60	60
² Minimum Circuit Ampacity	Unit Only	17	22
	7.5 kW	42	42
	10 kW	55	55
Unit Fuse Block		28W68	17W94
Disconnect Kit	Hinged - 0-10 kW	20W21	20W21
	Standard Access - 0-10 kW	20W15	20W15

3 TON BASIC EFFICIENCY

TCA036B

Voltage - 60hz		208/230V - 3ph			460V-3ph		
Compressor	Rated Load Amps	10.3			4.3		
	Locked Rotor Amps	75.0			40.0		
Outdoor Fan Motor	Full Load Amps	1.7			1.1		
	Locked Rotor Amps	3.1			2.2		
Power Exhaust Fan	Horsepower	.75			.75		
	Full Load Amps	5.0			2.2		
	Locked Rotor Amps	7.8			3.4		
Indoor Blower Motor	Horsepower	.5	1.5	2	.5	1.5	2
	Rated Load Amps	3.1	5.7	7.5	1.5	2.8	3.4
	Locked Rotor Amps	6.8	40	46.9	3.8	20	20.4
Service Outlet 115V GFI (amp rating)		15			15		
¹ Maximum Overcurrent Protection	Unit Only	25	30	30	15	15	15
	with power	0 kW	30	35	35	15	15
	exhaust	7.5 kW	35	40	40	20	20
		15 kW	60	60	70	30	30
² Minimum Circuit Ampacity	Unit Only	18	21	23	8	10	10
	with power	0 kW	23	26	28	11	12
	exhaust	7.5 kW	33	36	39	16	18
		15 kW	56	59	61	28	29
Unit Fuse Block	Unit Only	18W00	18W01	18W01	18W06	18W06	18W06
	with power exhaust	18W01	18W02	18W02	18W06	18W06	18W06
Disconnect 0-15 kW	Hinged Door	20W21	20W21	20W21	20W21	20W21	20W21
	Standard Access Door	20W15	20W15	20W15	20W15	20W15	20W15

3 TON STANDARD EFFICIENCY

TCA036S

Voltage - 60hz		208/230V-1ph		208/230V-3ph			460V-3ph			575V-3ph		
Compressor	Rated Load Amps	14.4		9.6			5.8			4.0		
	Locked Rotor Amps	77.0		73.0			38.0			28.0		
Outdoor Fan Motor	Full Load Amps	1.7		1.7			1.1			0.7		
	Locked Rotor Amps	3.1		3.1			2.2			1.3		
Power Exhaust Fan	Horsepower	.75		.75			.75			.75		
	Full Load Amps	5.0		5.0			2.2			1.5		
	Locked Rotor Amps	7.8		7.8			3.4			2.9		
Service Outlet 115V GFI (amp rating)		15		15			15			15		
Indoor Blower Motor	Horsepower	.5	1.5	.5	1.5	2	.5	1.5	2	.5	1.5	2
	Rated Load Amps	3.1	11.5	3.1	5.7	7.5	1.5	2.8	3.4	1.5	2.4	2.7
	Locked Rotor Amps	6.8	55	6.8	40	46.9	3.8	20	20.4	3.8	15	16.2
¹ Maximum Overcurrent Protection	Unit Only	35	45	25	25	30	15	15	15	15	15	15
	with power	0 kW	40	50	30	30	35	15	15	15	15	15
	exhaust	7.5 kW	50	60	35	40	40	20	20	20	15	15
		15 kW	90	100	60	60	70	30	30	30	25	25
² Minimum Circuit Ampacity	Unit Only	23	32	17	20	22	10	12	12	8	8	9
	with power	0 kW	28	37	22	25	27	13	14	14	9	10
	exhaust	7.5 kW	50	60	33	36	39	16	18	19	13	14
		15 kW	89	99	56	59	61	28	29	30	22	23
Unit Fuse Block	Unit Only	17W94	17W96	18W00	18W00	18W01	18W06	18W06	18W06	18W06	18W06	18W06
	with power exhaust	17W95	17W97	18W01	18W01	18W02	18W06	18W06	18W06	18W06	18W06	18W06
Disconnect	Hinged - 0-7.5 kW	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21
	15 kW	20W22	20W22	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21
	Standard Access - 0-7.5 kW	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15
	15 kW	20W16	20W16	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

¹ HACR type breaker or fuse.² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

4 TON BASIC EFFICIENCY

TCA048B

Voltage - 60hz		208/230V - 3ph			460V-3ph		
Compressor	Rated Load Amps	12.8			6.4		
	Locked Rotor Amps	91.0			46.0		
Outdoor Fan Motor	Full Load Amps	1.7			1.1		
	Locked Rotor Amps	3.1			2.2		
Power Exhaust Fan	Horsepower	.75			.75		
	Full Load Amps	5.0			2.2		
	Locked Rotor Amps	7.8			3.4		
Service Outlet 115V GFI (amp rating)		15			15		
Indoor Blower Motor	Horsepower	.5	1.5	2	.5	1.5	2
	Rated Load Amps	3.1	5.7	7.5	1.5	2.8	3.4
	Locked Rotor Amps	6.8	40	46.9	3.8	20.	20.4
¹ Maximum Overcurrent Protection	Unit Only	30	35	35	15	15	15
	with power exhaust 0 kW	35	40	40	15	20	20
	7.5 kW	35	40	40	20	20	20
	15 kW	60	60	70	30	30	30
² Minimum Circuit Ampacity	Unit Only	21	24	26	11	12	13
	with power exhaust 0 kW	26	29	31	13	15	15
	7.5 kW	33	36	39	16	18	19
	15 kW	56	59	61	28	29	30
Unit Fuse Block	Unit Only	18W01	18W02	18W02	18W06	18W06	18W06
	with power exhaust	18W02	18W03	18W03	18W06	18W07	18W07
Disconnect	Standard Access	20W15	20W15	20W15	20W15	20W15	20W15
	Hinged Access	20W21	20W21	20W21	20W21	20W21	20W21

4 TON STANDARD EFFICIENCY

TCA048S

Voltage - 60hz		208/230V-1ph		208/230V-3ph			460V-3ph			575V-3ph		
Compressor	Rated Load Amps	20.2		12.2			6.1			4.2		
	Locked Rotor Amps	137.0		83.1			41.0			33.0		
Outdoor Fan Motor	Full Load Amps	1.7		1.7			1.1			0.7		
	Locked Rotor Amps	3.1		3.1			2.2			1.3		
Power Exhaust Fan	Horsepower	.75		.75			.75			.75		
	Full Load Amps	5.0		5.0			2.2			1.5		
	Locked Rotor Amps	7.8		7.8			3.4			2.9		
Service Outlet 115V GFI (amp rating)		15		15			15			15		
Indoor Blower Motor	Horsepower	.5	1.5	.5	1.5	2	.5	1.5	2	.5	1.5	2
	Rated Load Amps	3.1	11.5	3.1	5.7	7.5	1.5	2.8	3.4	1.5	2.4	2.7
	Locked Rotor Amps	6.8	55	6.8	40	46.9	3.8	20	20.4	3.8	15	16.2
¹ Maximum Overcurrent Protection	Unit Only	50	50	30	30	35	15	15	15	15	15	15
	with power exhaust 0 kW	50	60	35	35	40	15	15	20	15	15	15
	7.5 kW	50	60	35	40	40	20	20	20	15	15	15
	15 kW	90	100	60	60	70	30	30	30	25	25	25
² Minimum Circuit Ampacity	Unit Only	31	39	21	23	25	11	12	13	8	9	9
	with power exhaust 0 kW	36	44	26	28	30	13	14	15	9	10	11
	7.5 kW	50	60	33	36	39	16	18	19	13	14	15
	15 kW	89	99	56	59	66	28	29	30	22	23	24
Unit Fuse Block	Unit Only	17W97	17W97	18W01	18W01	18W02	18W06	18W06	18W06	18W06	18W06	18W06
	with power exhaust	17W97	17W98	18W02	18W02	18W03	18W06	18W06	18W07	18W06	18W06	18W06
Disconnect	Standard Access 0-7.5 kW	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15
	15 kW	20W16	20W16	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15
	Hinged 0-7.5 kW	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21
	15 kW	20W22	20W22	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

¹ HACR type breaker or fuse.² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

5 TON BASIC EFFICIENCY

TCA060B

Voltage - 60hz		208/230V - 3ph			460V-3ph		
Compressor	Rated Load Amps	18.6			9.0		
	Locked Rotor Amps	128.0			63.0		
Outdoor Fan Motor	Full Load Amps	2.4			1.3		
	Locked Rotor Amps	4.7			2.4		
Power Exhaust Fan	Horsepower	.75			.75		
	Full Load Amps	5.0			2.2		
	Locked Rotor Amps	7.8			3.4		
Service Outlet 115V GFI (amp rating)		15			15		
Indoor Blower Motor	Horsepower	.75	1.5	2	.75	1.5	2
	Rated Load Amps	4.2	5.7	7.5	2.2	2.8	3.4
	Locked Rotor Amps	9.6	40	46.9	5.2	20	20.4
¹ Maximum Overcurrent Protection	Unit Only	45	45	50	20	20	20
	with power exhaust 0 kW	50	50	50	25	25	25
	7.5 kW	50	50	50	25	25	25
	15 kW	60	60	70	30	30	30
	22.5 kW	80	90	90	40	45	45
² Minimum Circuit Ampacity	Unit Only	30	32	34	15	16	16
	with power exhaust 0 kW	35	37	39	17	18	19
	7.5 kW	35	37	39	17	18	19
	15 kW	57	59	61	28	29	30
	22.5 kW	80	81	84	40	41	41
Unit Fuse Block	Unit Only	18W04	18W04	18W05	18W07	18W07	18W07
	with power exhaust	18W05	18W05	18W05	18W08	18W08	18W08
Disconnect	Standard Access	20W15	20W15	20W15	20W15	20W15	20W15
	Hinged Access	20W21	20W21	20W21	20W21	20W21	20W21

5 TON STANDARD EFFICIENCY

TCA060S

Voltage - 60hz		208/230V-1ph		208/230V-3ph			460V-3ph			575V-3ph		
Compressor	Rated Load Amps	25.3		15.4			7.1			5.3		
	Locked Rotor Amps	141.0		110.0			52.0			38.9		
Outdoor Fan Motor	Full Load Amps	2.4		2.4			1.3			1.0		
	Locked Rotor Amps	4.7		4.7			2.4			1.9		
Power Exhaust Fan	Horsepower	.75		.75			.75			.75		
	Full Load Amps	5.0		5.0			2.2			1.5		
	Locked Rotor Amps	7.8		7.8			3.4			2.9		
Service Outlet 115V GFI (amp rating)		15		15			15			15		
Indoor Blower Motor	Horsepower	.75	1.5	.75	1.5	2	.75	1.5	2	.75	1.5	2
	Rated Load Amps	4.2	11.5	4.2	5.7	7.5	2.2	2.8	3.4	2.2	2.4	2.7
	Locked Rotor Amps	9.6	55	9.6	40	46.9	5.2	20	20.4	5.2	15	16.2
¹ Maximum Overcurrent Protection	Unit Only	60	70	40	40	40	15	20	20	15	15	15
	with power exhaust 0 kW	60	70	45	45	45	20	20	20	15	15	15
	7.5 kW	60	70	45	45	45	20	20	20	15	15	15
	15 kW	90	100	60	60	70	30	30	30	25	25	25
	22.5 kW	150	150	80	90	90	40	45	45	35	35	35
² Minimum Circuit Ampacity	Unit Only	44	51	31	33	35	15	16	16	12	12	12
	with power exhaust 0 kW	44	51	31	35	37	15	15	16	12	13	13
	7.5 kW	51	60	34	36	39	17	18	19	14	14	15
	15 kW	90	99	57	59	61	28	29	30	23	23	24
	22.5 kW	129	138	80	81	84	40	41	41	32	32	33
Unit Fuse Block	Unit Only	17W98	17W99	18W03	18W03	18W03	18W06	18W07	18W07	18W06	18W06	18W06
	with power exhaust	17W98	17W99	18W04	18W04	18W04	18W07	18W07	18W07	18W06	18W06	18W06
Disconnect	Standard Access 0-7.5 kW	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15
	15-22.5 kW	20W16	20W16	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15	20W15
	Hinged Access 0-7.5 kW	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21
	15-22.5 kW	20W22	20W22	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21	20W21

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

¹ HACR type breaker or fuse.² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

6 TON STANDARD EFFICIENCY

TCA072S

Voltage - 60hz		208/230V-3ph		460V-3ph		575V-3ph	
Compressor	Rated Load Amps	18.6		9.0		7.4	
	Locked Rotor Amps	156.0		75.0		54.0	
Outdoor Fan Motor	Full Load Amps	2.4		1.3		1.0	
	Locked Rotor Amps	4.7		2.4		1.9	
Power Exhaust Fan	Horsepower	.75		.75		.75	
	Full Load Amps	5.0		2.2		1.5	
	Locked Rotor Amps	7.8		3.4		2.9	
Service Outlet 115V GFI (amp rating)		15		15		15	
Indoor Blower Motor	Horsepower	1.5	2	1.5	2	1.5	2
	Rated Load Amps	5.7	7.5	2.8	3.4	2.4	2.7
	Locked Rotor Amps	40	46.9	20	20.4	15	16.2
¹ Maximum Overcurrent Protection	Unit Only	50	50	20	25	20	20
	with power exhaust 0 kW	50	50	25	25	20	20
	7.5 kW	50	50	25	25	20	20
	15 kW	60	60	30	30	25	25
	22.5 kW	80	90	40	45	35	35
	30 kW	110	110	60	60	45	45
² Minimum Circuit Ampacity	Unit Only	32	34	16	16	13	13
	with power exhaust 0 kW	37	39	18	19	15	15
	7.5 kW	37	39	18	19	15	15
	15 kW	58	60	29	29	23	23
	22.5 kW	80	82	40	41	32	32
	30 kW	103	105	51	52	41	41
Unit Fuse Block	Unit Only	18W05	18W05	18W07	18W08	18W07	18W07
	with power exhaust	18W05	18W05	18W08	18W08	18W07	18W07
Disconnect	Standard Access Panel 0-22.5 kW	20W18	20W18	20W18	20W18	20W18	20W18
	30 kW	20W19	20W19	20W18	20W18	20W18	20W18
	Hinged Access 0-22.5 kW	20W24	20W24	20W24	20W24	20W24	20W24
	30 kW	20W25	20W25	20W24	20W24	20W24	20W24

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

¹ HACR type breaker or fuse.² Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRIC HEAT CAPACITIES

Input Voltage	7.5 kW			10 kW			15 kW			22.5 kW			30 kW		
	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output
208	1	5.6	19,200	1	7.5	25,600	1	11.2	38,200	1	16.9	57,700	1	22.5	76,800
220	1	6.3	21,500	1	8.4	28,700	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
230	1	6.9	23,500	1	9.2	31,400	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
240	1	7.5	25,600	1	10.0	34,200	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400
440	1	6.3	21,500	---	---	---	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
460	1	6.9	23,500	---	---	---	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
480	1	7.5	25,600	---	---	---	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400
550	1	6.3	21,500	---	---	---	1	12.6	43,000	1	18.9	64,500	1	25.2	86,000
575	1	6.9	23,500	---	---	---	1	13.8	47,000	1	20.7	70,700	1	27.5	93,900
600	1	7.5	25,600	---	---	---	1	15.0	51,200	1	22.5	76,800	1	30.0	102,400

TCA PARTS ARRANGEMENT

FILTERS (4)

024, 030, 036, 048, 060: 16 X 20 X 2"
072: 20 X 20 X 2"

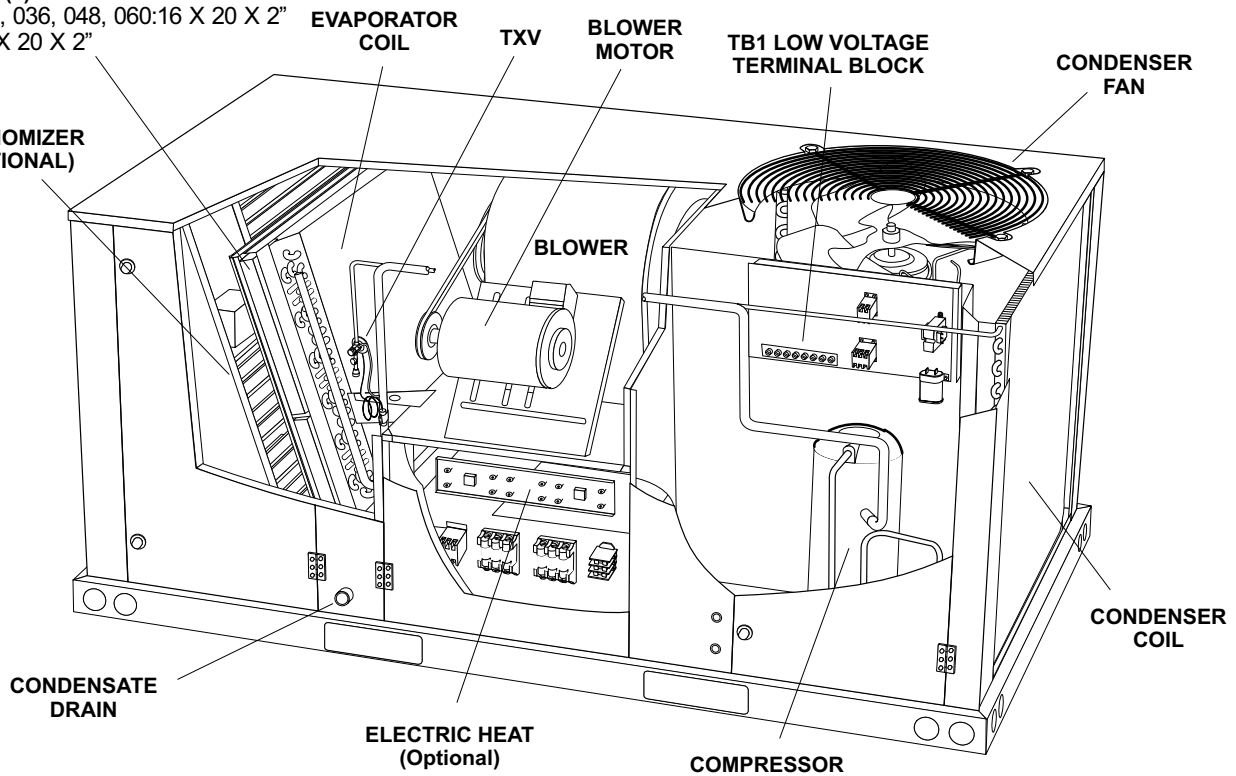


FIGURE 1

TCA CONTROL BOX

FAN RELAY
K10



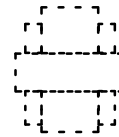
BLOWER CONTACTOR
K3



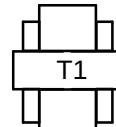
CONTACTOR
K1



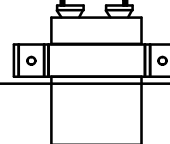
TRANSFORMER
T4



TRANSFORMER
T1



CAPACITOR C1
or C12



TERMINAL BLOCK TB1

FIGURE 2

I-UNIT COMPONENTS

All 2 through 6 ton (7 through 21 kW) units are build to order units (BTO). The TCA unit components are shown in figure 1. All units come standard with removable unit panels. All L1, L2, and L3 wiring is color coded; L1 is red, L2 is yellow, and L3 is blue.

A-Control Box Components

TCA control box components are shown in figure 2. The control box is located in the upper right portion of the compressor compartment.

1-Control Transformer T1

All use a single line voltage to 24VAC transformer mounted in the control box. Transformer supplies power to control circuits in the unit. The transformer is rated at 70VA and is protected by a 3.5 amp circuit breaker (CB8). The 208/230 (Y) voltage transformers use two

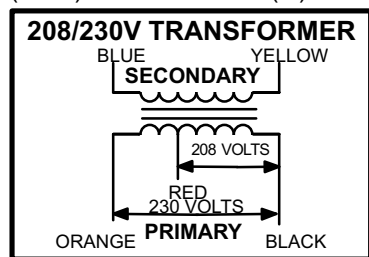


FIGURE 3

primary voltage taps as shown in figure 3, while 460 (G) and 575 (J) voltage transformers use a single primary voltage tap.

2-Transformer T4 (J voltage)

All (J) 575 voltage direct drive units use transformer T4 mounted in the control box. T4 is a line voltage to 460V to power the indoor blower. It is connected to line voltage and is powered at all times.

3-Terminal Strip TB1

All indoor thermostat connections will be to TB1 located in the control box. For thermostats without “occupied “ and “unoccupied” modes, a factory installed jumper across terminals R and OC should be in place.

4-Fan Capacitor C1 (three phase)

Fan capacitors C1 is used to assist in the start up of condenser fan B4. Ratings will be on side of capacitor or outdoor fan motor nameplate.

5-Dual Capacitor C12 (single phase)

A single dual capacitor is used for both the outdoor fan and compressor (see unit diagram). The fan side and the compressor side have different MF ratings. See side of capacitor for ratings,.

6-Compressor Contactor K1

In all TCA units, K1 energizes compressors B1 in response to thermostat demand. Three-phase units use three-pole double-break contactors with a 24 volt coil. Single-phase units use single-pole double-break contactors with a 24 volt coil.

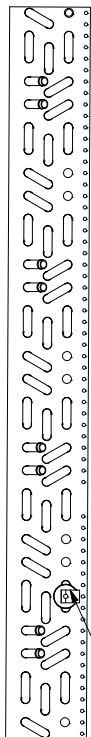
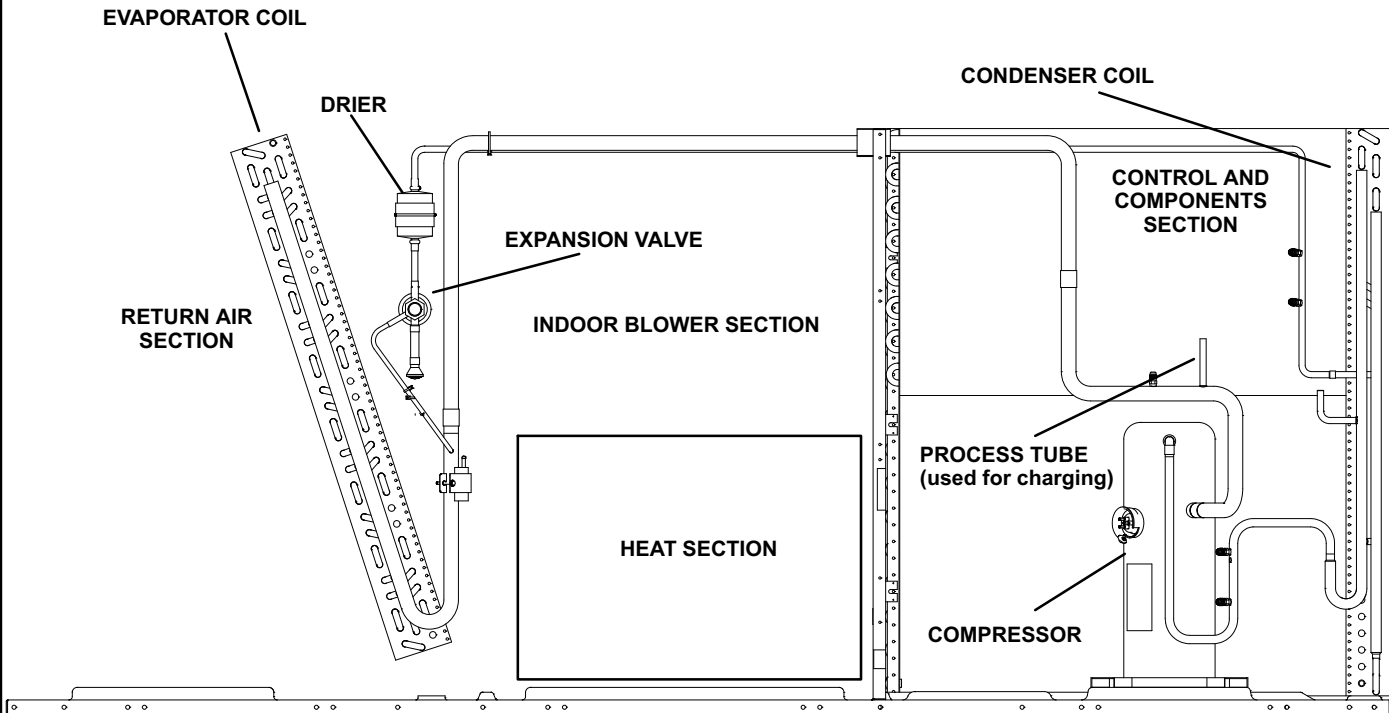
7-Blower Contactor K3

On three phase TCA blower motors, K3 is a two-pole double-break contactor with a 24VAC coil and on single-phase blower motors K3 is a single-pole double-break contactor with a 24 volt coil. K3 energizes the indoor blower motor B3 in response to blower demand.

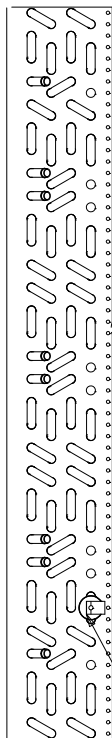
8-Condenser Fan Relay K10 (G, J voltage)

Outdoor fan relay K10 is a DPDT relay with a 24VAC coil. K10 energizes condenser fan B4. K10 is used with a low ambient kit only.

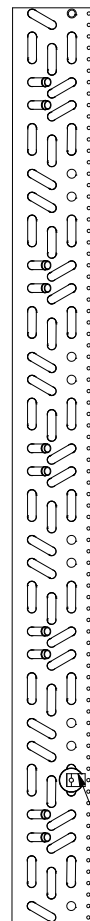
TCA036, 048, 060, 072 PLUMBING and COMPRESSOR



TCA024S, 030S, 036S, 048S



TCA060S



TCA072S



TCA036B, 048B, 060B

FIGURE 4

B-Cooling Components

TCA units use one cooling circuits consisting of a compressor, condenser coil and evaporator coil. See figure 4. One draw-through type condenser fan is used in TCA024/072 units. Units are equipped with belt-drive or direct drive blowers which draw air across the evaporator during unit operation.

Cooling may be supplemented by a factory- or field-installed economizer. The evaporators are slab type and use thermostatic expansion valve as the primary refrigerant metering device. Each evaporator is also equipped with enhanced fins and rifled tubing. In all units each compressor is protected by a freezestat (figure 4) on each evaporator coil. A low ambient switch (S11) and high pressure switch (S4) is available as a field accessory for additional compressor protection.

1-Compressor B1

All TCA024/072 units (except TCA036B) use one scroll compressor. See "SPECIFICATIONS" and "ELECTRICAL DATA" (table of contents) or compressor nameplate for compressor specifications. The 036B is equipped with a reciprocating compressor.

WARNING

Electrical shock hazard. Compressor must be grounded. Do not operate without protective cover over terminals. Disconnect power before removing protective cover. Discharge capacitors before servicing unit. Failure to follow these precautions could cause electrical shock resulting in injury or death.

Each compressor is energized by a corresponding compressor contactor.

NOTE-Refer to the wiring diagram section for specific unit operation.

2-Freezestat S49

Each unit is equipped with a low temperature switch (freezestat) located on a return bend of each evaporator coil.

The freezestat is wired in series with the compressor contactor K1. The freezestat is a SPST N.C. auto-reset switch which opens at $29^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($-1.7^{\circ}\text{C} \pm 1.7^{\circ}\text{C}$) on a temperature drop and closes at $58^{\circ}\text{F} \pm 4^{\circ}\text{F}$ ($14.4^{\circ}\text{C} \pm 2.2^{\circ}\text{C}$) on a temperature rise. To prevent coil icing, freezestats open during compressor operation to temporarily disable the respective compressor until the coil temperature rises.

If the freezestats are tripping frequently due to coil icing, check the airflow / filters, economizer position and unit charge before allowing unit back in operation. Make sure to eliminate conditions which might promote evaporator ice buildup.

3-High Pressure Switch S4 (optional)

The high pressure switch is a manual reset SPST N.C. switch which opens on a pressure rise.

S4 is located in the compressor discharge line and wired in series with the compressor contactor coil.

When discharge pressure rises to 450 ± 10 psig (3103 ± 69 kPa) (indicating a problem in the system) the switch opens and the respective compressor is de-energized (the economizer can continue to operate).

4-Low Ambient Switches S11 (optional)

The low ambient switch is an auto-reset SPST N.O. pressure switch which allows for mechanical cooling operation at low outdoor temperatures. In all models the switch is located in each liquid line prior to the indoor coil section and is wired in parallel with outdoor fan B4. When S11 opens B4 is de-energized.

In G, J and M voltage units, S11 is wired in series with outdoor fan relay K10 coil and when opened breaks 24 volts to the coil, de-energizing outdoor fan B4.

When liquid pressure rises to 275 ± 10 psig (1896 ± 69 kPa), the switch closes and the condenser fan is energized. When discharge pressure in drops to 150 ± 10 psig (1034 ± 69 kPa), the switch opens and the condenser fan is de-energized. This intermittent fan operation results in higher evaporating temperature allowing the system to operate without icing the evaporator coil and losing capacity.

5-Low Temperature Switch S3 (optional) (compressor monitor)

S3 is a SPST bimetal thermostat which opens on temperature drop. It is wired in line with the 24VAC compressor contactor. When outdoor temperature drops below 40°F (4.5°C) the switch opens and de-energizes the compressor. When the compressor is de-energized the cooling demand is handled by the economizer. The switch automatically resets when outdoor temperature rises to 50°F (10°C).

C-Blower Compartment

TCA 036,048 and 060 units are equipped with either direct drive or belt drive blowers. The TCA024 and 030 are equipped with direct drive blowers only and the TCA072 is available with belt drive blowers only. See unit nameplate for blower type. The blower compartment in all TCA024/072 units is located between the evaporator coil and the compressor compartment.

1-Blower Wheels

All belt drive units use $10'' \times 10''$ (254 mm x 254 mm) blower wheels. The TCA024, 030, 036 and 048 direct drive units use $10'' \times 10''$ (254 mm x 254 mm) blower wheels also. The TCA060 direct drive units use $11'' \times 10''$ (279 mm x 254 mm) blower wheels.

2-Indoor Blower Motor Capacitor C4

All single phase blower motors are PSC and requires a run capacitor. Ratings may vary from each motor. See motor nameplate for capacitor ratings.

3-Indoor Blower Motor B3

All direct drive units use single phase PSC motors. Belt drive units use single or three phase motors (same as supply voltage). CFM adjustments on belt drive units are made by adjusting the motor pulley (sheave). CFM adjustments on direct drive units are made by changing speed taps. Motors are equipped with sealed ball bearings. All motor specifications are listed in the SPECIFICATIONS (table of contents) in the front of this manual. Units may be equipped with motors manufactured by various manufacturers, therefore electrical FLA and LRA specifications will vary. See unit rating plate for information specific to your unit.

! IMPORTANT

Three phase scroll compressors must be phased sequentially for correct compressor and blower rotation. Follow "COOLING START-UP" section of installation instructions to ensure proper compressor and blower operation.

A-Blower Operation

Initiate blower demand at thermostat according to instructions provided with thermostat. Unit will cycle on thermostat demand. The following steps apply to applications using a typical electro-mechanical thermostat.

- 1- Blower operation is manually set at the thermostat sub-base fan switch. With fan switch in **ON** position, blowers will operate continuously.
- 2- With fan switch in **AUTO** position, the blowers will cycle with demand. Blowers and entire unit will be off when system switch is in **OFF** position.

B-Determining Unit CFM - Direct Drive Blowers

- 1- The following measurements must be made with air filters in place and no cooling demand.
- 2- With all access panels in place, measure static pressure external to unit (from supply to return). Add any additional air resistance for options and accessories shown in air resistance table on Page 20.
- 3- Use figure 5 to determine the factory set blower speed.

BLOWER SPEED FACTORY SETTINGS					
036 Units		024, 030, 048 Units		060 Units	
☐	1 Com	☐	1 Com	☐	1 Com
☐	2 Hi	☐	2 Hi	☐	2 Hi
☐	3 Med	☐	3 Med*	☐	3 Low*
☐	4 Low*	☐	4 Low	☐	4 Unused
*Factory Setting					

FIGURE 5

- 4- Use the blower tables starting on Page 9, the measured static pressure, and the factory-set blower speed to determine CFM. If CFM is lower than the design specified CFM, move the lead from speed tap 3 or 4 to speed tap 2. See figure 6.

Note - Speed tap 3 can be used on 036 units if speed tap 2 delivers more CFM than required by design specification.

For 460/575V units, remove the isolation lead from speed tap 2 before moving the wire to speed tap 2. Tape the exposed end of the isolation lead and secure away from other components.

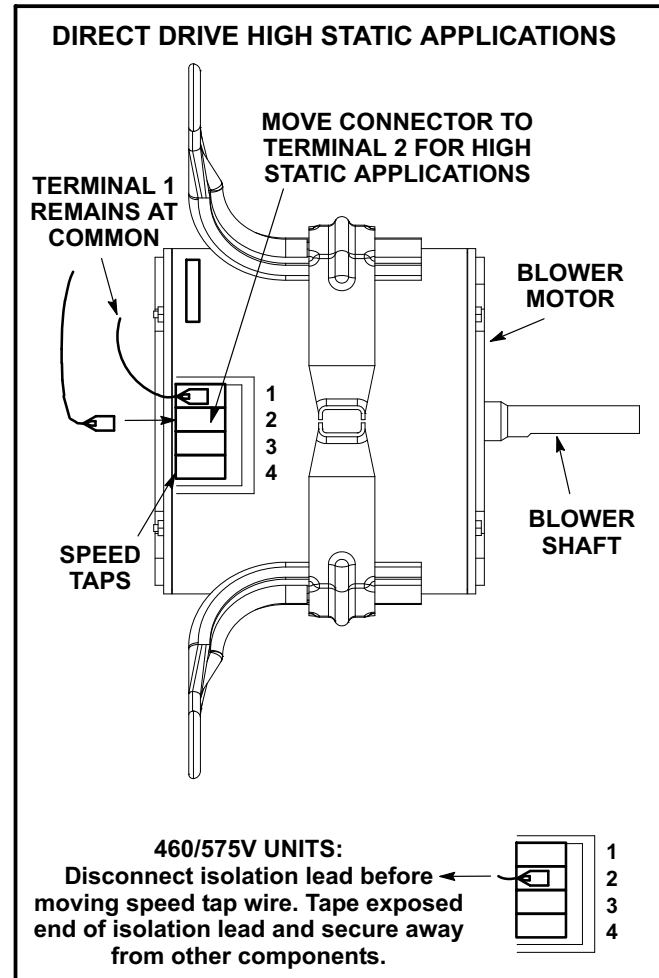


FIGURE 6

C-Determining Unit CFM - Belt Drive Blowers

- 1- The following measurements must be made with air filters in place and no cooling demand.
- 2- With all access panels in place, measure static pressure external to unit (from supply to return).
- 3- Measure the indoor blower wheel RPM.
- 4- Referring to the blower tables starting on Page 12 use static pressure and RPM readings to determine unit CFM. Use air resistance table when installing units with any of the options or accessories listed.
- 5- The blower RPM can be adjusted at the motor pulley. Loosen Allen screw and turn adjustable pulley clockwise to increase CFM. Turn counterclockwise to decrease CFM. See figure 9. Do not exceed minimum and maximum number of pulley turns as shown in table 1.

TABLE 1
MINIMUM AND MAXIMUM PULLEY ADJUSTMENT

Belt	Min. Turns Open	Max. Turns Open
A Section	No minimum	5

D-Blower Belt Adjustment

Maximum life and wear can be obtained from belts only if proper pulley alignment and belt tension are maintained. Tension new belts after a 24-48 hour period of operation. This will allow belt to stretch and seat grooves. Make sure blower and motor pulley are aligned as shown in figure 7.

- 1- Loosen four bolts securing motor base to mounting frame. See figure 9.
- 2- *To increase belt tension* - Slide blower motor downward to tighten the belt. This increases the distance between the blower motor and the blower housing.
- 3- *To loosen belt tension* - Slide blower motor upward to loosen the belt. This decreases the distance between the blower motor and the blower housing.
- 4- Tighten four bolts securing motor base to the mounting frame.
- 5- Check and adjust belt alignment as needed. See figure 7.

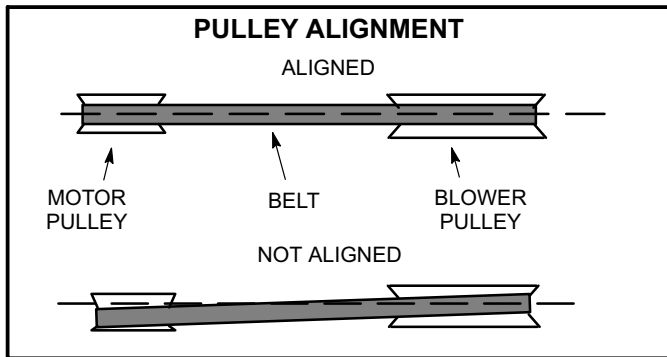


FIGURE 7

E-Check Belt Tension

Overtensioning belts shortens belt and bearing life. Check belt tension as follows:

- 1- Measure span length X. See figure 8.
- 2- Apply perpendicular force to center of span (X) with enough pressure to deflect belt 1/64" for every inch of span length or 1.5mm per 100mm of span length.

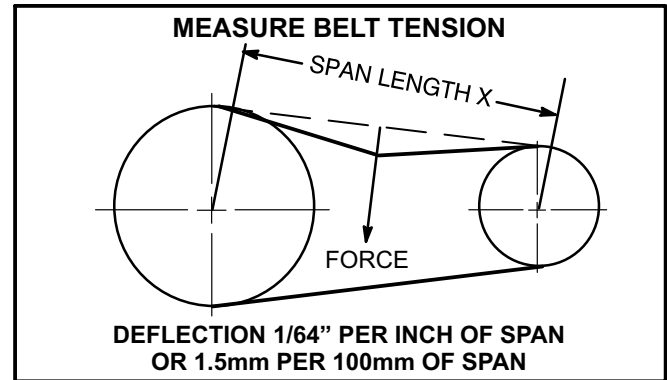


FIGURE 8

Example: Deflection distance of a 40" span would be 40/64" or 5/8".

Example: Deflection distance of a 400mm span would be 6mm.

- 3- Measure belt deflection force. For a used belt, the deflection force should be 5 lbs. (35kPa). A new belt deflection force should be 7 lbs. (48kPa).

A force below these values indicates an undertensioned belt. A force above these values indicates an overtensioned belt.

F-Field-Furnished Blower Drives

See blower data tables for field-furnished blower drives to determine BHP and RPM required. See drive kit table on Page 19 to determine the drive kit number

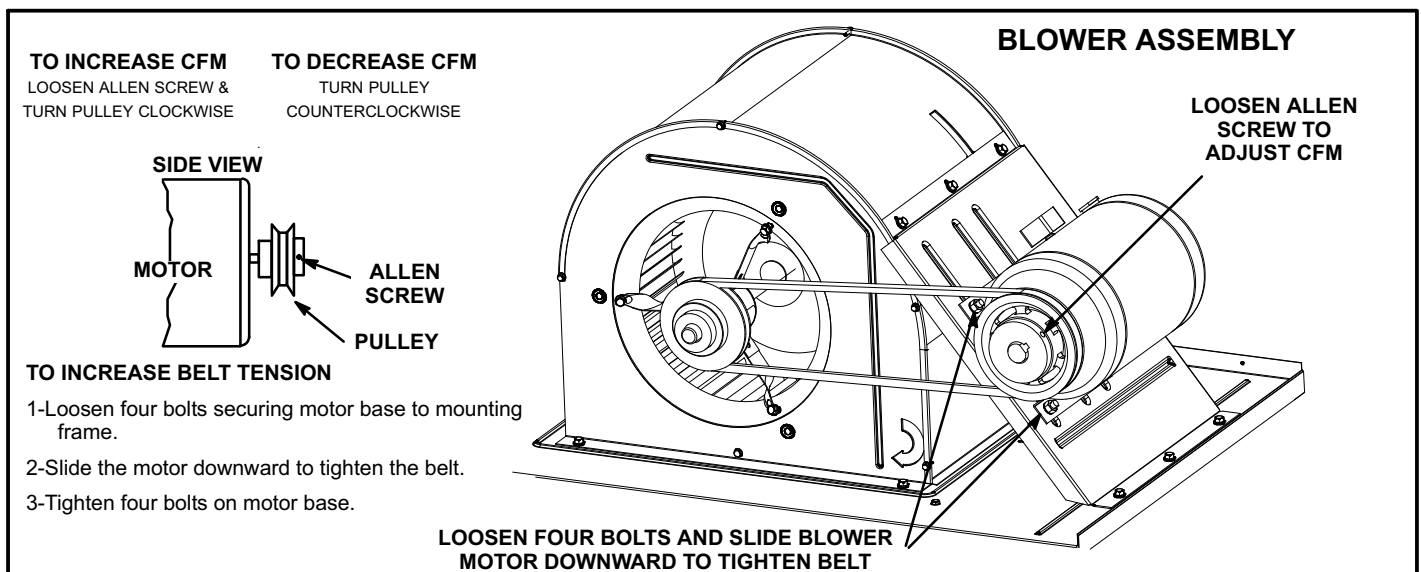


FIGURE 9

D-ELECTRIC HEAT COMPONENTS

Electric heat matchups are found in the ELECTRICAL DATA tables. See table of contents.

All electric heat sections consist of electric heating elements exposed directly to the airstream. See figure 10. See figure 11 for vestibule parts arrangement.

1-Contactors K15, K16

All contactors are double break and either single, double or three pole (see diagram) and equipped with a 24VAC coil. The coils in the K15 and K16 contactors are energized by the indoor thermostat. In all units K15 energizes the heating elements, while in the 22.5 kW units, K15 and K16 energize the heating elements simultaneously.

2-High Temperature Limits S15 (Primary)

S15 is a SPST N.C. auto-reset thermostat located on the back panel of the electric heat section above the heating elements. S15 is the high temperature limit for the electric heat section. When S15 opens, indicating a problem in the system, contactor K15 is de-energized (including K16 in 22.5 kW units). When K15 is de-energized, all stages of heat are de-energized. See table 2 for S15 set points. Set points are factory set and not adjustable.

TABLE 2

Unit kW (Voltage)	S15 Opens ° F	S15 Closes ° F
7.5 (Y, G, J, P)	160	120
10 (P)	170	130
15 (Y)	170	130
15 (G, J, P)	160	120
22.5 (Y, G, J)	160	120
22.5 (P)	150	110
30 (Y, G, J)	150	110

3-High Temperature Limit S20 and S157 (Secondary)

S20 and S157 are SPST N.C. manual-reset thermostats. S20 and S157 are wired in series with the heating elements. See T1EH wiring diagrams. When either limit opens K15 and K16 are de-energized. When the contactors are de-energized, all stages of heat are de-energized. The thermostat is factory set to open at $220^{\circ}\text{F} \pm 6^{\circ}\text{F}$ ($104^{\circ}\text{C} \pm 3.3^{\circ}\text{C}$) on a temperature rise and can be manually reset when temperature falls below 160°F (71.0°C). See figure 11 for location.

4-Terminal Strip TB2

Terminal strip TB2 is used for single point power installations only. TB2 distributes power to TB3. Units with multi-point power connections will not use TB2.

5-Terminal Strip TB3

P and Y voltage units are equipped with terminal strip TB3. Electric heat line voltage connections are made to TB3, which distributes power to the electric heat components and is located on the vestibule. See figure NO TAG.

6-Heating Elements HE1 through HE6

Heating elements are composed of helix wound bare nichrome wire exposed directly to the airstream. Three elements are connected in a three-phase arrangement. The elements in 208/230V units are connected in a "Delta" arrangement. Elements in 460 and 575V units are connected in "Wye" arrangement. Each stage is energized independently by the corresponding contactors located on the electric heat vestibule panel. Once energized, heat transfer is instantaneous. High temperature protection is provided by primary and redundant high temperature limits and overcurrent protection is provided by fuses.

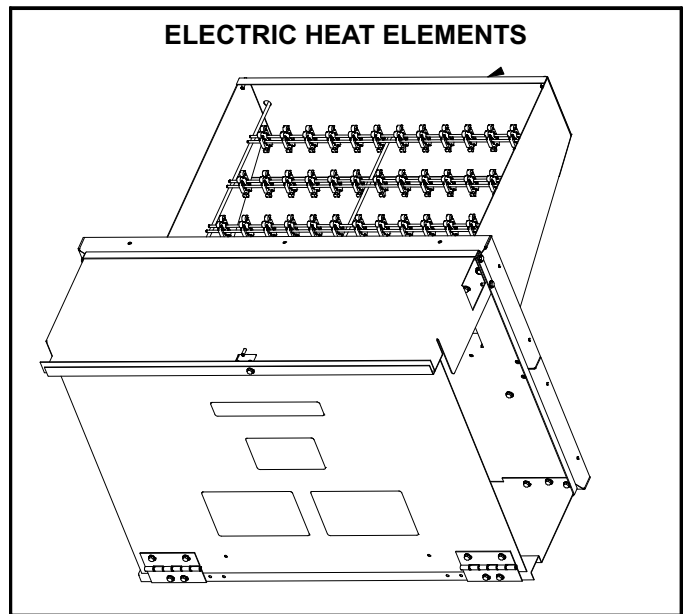


FIGURE 10

7-Fuse F3 and F42

Fuse F3 and F42 are housed in a fuse block which holds two or three fuses. Each F3 fuse is connected in series with each leg of electric heat. Figure 11 and table 3 show the fuses used with each electric heat section.

8-Unit Fuse Block & Fuse F4

Three line voltage fuses F4 provide short circuit and ground fault protection to all cooling components in the TCA units with electric heat. The fuses are rated in accordance with the amperage of the cooling components. The F4 fuse block is located inside a sheetmetal enclosure.

9-Electric Heat Relay K9

K9 is a N.O. SPDT pilot relay intended to electrically isolate the unit's 24V circuit from the electric heat 24V circuit. K9 is energized by the indoor thermostat. K9-1 closes, energizing contactor K15.

TABLE 3

Unit	Voltage-Phase	FUSE		Qty each	Qty total
		F3	F42		
T1EH0075	208/230V-1P	40 A-250V	----	2	2
	208/230V-3P	25 A-250V	----	3	3
	460V-3P	15 A-600V	----	3	3
	575V-3P	15 A-600V	----	3	3
T1EH0010	208/230V-1P	30 A-250V	30A-250V	2	2
T1EH0015	208/230V-1P	40 A-250V	40A-250V	2	4
	208/230V-3P	50 A-250V	----	3	3
	460V	25 A-600V	----	3	3
	575V	20 A-600V	----	3	3
T1EH00225	208/230V-1P	40 A-250V	40A-250V	3	6
	208/230V-3P	45 A-250V	45A-250V	3	6
	460V-3P	35 A-600V	----	3	3
	575V-3P	30 A-600V	----	3	3
T1EH0300	208/230V-3P	60 A-250V	60A-250V	3	6
	460V-3P	50 A-600V	----	3	3
	575V-3P	40 A-600V	----	3	3

ELECTRIC HEAT VESTIBULE PARTS ARRANGEMENT

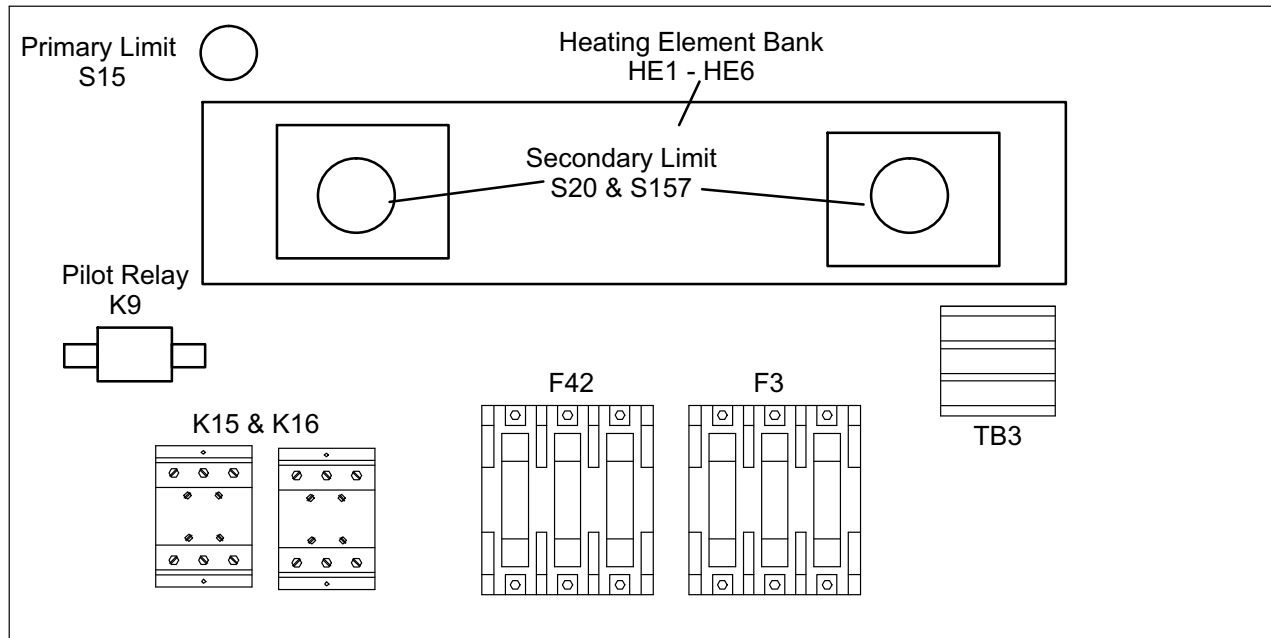


FIGURE 11

II-PLACEMENT AND INSTALLATION

Make sure the unit is installed in accordance with the installation instructions and all applicable codes. See accessories section for conditions requiring use of the optional roof mounting frame.

III-START UP - OPERATION

A-Preliminary and Seasonal Checks

- 1- Inspect all electrical wiring, both field and factory installed for loose connections. Tighten as required. Refer to unit diagram located on inside of unit compressor access panel.
- 2- Check to ensure that refrigerant lines are in good condition and do not rub against the cabinet or other refrigerant lines.
- 3- Check voltage at the disconnect switch. Voltage must be within the range listed on the nameplate. If not, consult the power company and have the voltage corrected before starting the unit.
- 4- Recheck voltage and amp draw with unit running. If voltage is not within range listed on unit nameplate, stop unit and consult power company. Refer to unit nameplate for maximum rated load amps.
- 5- Inspect and adjust blower belt (see section on Blower Compartment - Blower Belt Adjustment).

B-Cooling Start Up

Operation

- 1- Initiate first and second stage cooling demands according to instructions provided with thermostat.
- 2- *No Economizer Installed in Unit* -
A first-stage cooling demand (Y1) will energize compressor 1 and the condenser fan. An increased cooling demand (Y2) will not change operation.
Units Equipped With Economizer -
When outdoor air is acceptable, a first-stage cooling demand (Y1) will energize the economizer. An increased cooling demand (Y2) will energize compressor 1 and the condenser fan. When outdoor air is not acceptable unit will operate as though no economizer is installed.
- 3- Units contain one refrigerant circuit or stage.
- 4- Unit is charged with HCFC-22 refrigerant. See unit rating plate for correct amount of charge.
- 5- Refer to Cooling Operation and Adjustment section for proper method to check refrigerant charge.

Three Phase Scroll Compressor Voltage Phasing

Three phase scroll compressors must be phased sequentially to ensure correct compressor and blower rotation and operation. Compressor and blower are wired in phase at the factory. Power wires are color-coded as follows: line 1-red, line 2-yellow, line 3-blue.

- 1- Observe suction and discharge pressures and blower rotation on unit start-up.
- 2- Suction pressure must drop, discharge pressure must rise, and blower rotation must match rotation marking.

If pressure differential is not observed or blower rotation is not correct:

- 3- Disconnect all remote electrical power supplies.
- 4- Reverse any two field-installed wires connected to the line side of K1 contactor. Do not reverse wires at blower contactor.
- 5- Make sure the connections are tight.

Discharge and suction pressures should operate at their normal start-up ranges.

C-Safety or Emergency Shutdown

Turn off power to unit.

IV-CHARGING

WARNING-Do not exceed nameplate charge under any condition.

This unit is factory charged and should require no further adjustment. If the system requires charge, reclaim the charge, evacuate the system, and add required nameplate charge.

NOTE - System charging is not recommended below 60°F (15°C). In temperatures below 60°F (15°C), the charge must be weighed into the system.

If weighing facilities are not available, or to check the charge, use the following procedure:

- 1- Attach gauge manifolds and operate unit in cooling mode until system stabilizes (approximately five minutes). Make sure outdoor air dampers are closed.
- 2- Use a thermometer to accurately measure the outdoor ambient temperature.
- 3- Apply the outdoor temperature to tables 4 through 12 to determine normal operating pressures.
- 4- Compare the normal operating pressures to the pressures obtained from the gauges. Minor variations in these pressures may be expected due to differences in installations. Significant differences could mean that the system is not properly charged or that a problem exists with some component in the system. **Correct any system problems before proceeding.**
- 5- If discharge pressure is high, remove refrigerant from the system. If discharge pressure is low, add refrigerant to the system.
 - Add or remove charge in increments.
 - Allow the system to stabilize each time refrigerant is added or removed.
- 6- Use the following approach method along with the normal operating pressures to confirm readings.

D-Charge Verification - Approach Method

- 7- Using the same thermometer, compare liquid temperature to outdoor ambient temperature.

Approach Temperature = Liquid temperature minus ambient temperature.

- 8- Approach temperature should match values in table 13. An approach temperature greater than value shown indicates an undercharge. An approach temperature less than value shown indicates an overcharge.

TABLE 4
TCA024S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Discharge ±10 psig	Suction ± 5 psig
65°F	148	83
75°F	172	85
85°F	198	86
95°F	230	88
105°F	265	89
115°F	304	91

TABLE 5
TCA030S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Discharge ±10 psig	Suction ± 5 psig
65°F	157	85
75°F	182	86
85°F	210	87
95°F	241	88
105°F	275	90
115°F	311	91

TABLE 6
TCA036B R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	168	73
75° F	196	75
85° F	225	78
95° F	257	81
105° F	290	84
115° F	327	87

TABLE 7
TCA036S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65°F	161	79
75°F	187	82
85°F	214	84
95°F	244	86
105°F	277	87
115°F	313	89

TABLE 8
TCA048B R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	199	76
75° F	223	77
85° F	253	78
95° F	287	79
105° F	323	81
115° F	363	83

TABLE 9
TCA048S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	163	78
75° F	189	81
85° F	217	83
95° F	248	84
105° F	284	86
115° F	319	87

TABLE 10
TCA060B R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	197	68
75° F	224	70
85° F	253	71
95° F	286	73
105° F	321	76
115° F	359	78

TABLE 11
TCA060S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	169	78
75° F	194	81
85° F	221	82
95° F	250	84
105° F	283	85
115° F	318	87

TABLE 12
TCA 072S R22 NORMAL OPERATING PRESSURES

Outdoor Coil Entering Air Temp	Dis. ± 10 psig	Suct. ±5 psig
65° F	195	75
75° F	222	77
85° F	253	78
95° F	287	79
105° F	323	81
115° F	365	82

9- Do not use the approach method if system pressures do not match pressures in tables 4 through 12. The approach method is not valid for grossly over or under-charged systems.

TABLE 13
APPROACH TEMPERATURE

Unit	Liquid Temp. Minus Ambient Temp.
024S	5°F ± 1 (2.8°C ± 0.5)
030S	6°F ± 1 (3.3°C ± 0.5)
036B	14°F ± 1 (7.8°C ± 0.5)
036S, 048S	7°F ± 1 (3.9°C ± 0.5)
048B	8°F ± 1 (4.4°C ± 0.5)
060B	16°F ± 1 (8.9°C ± 0.5)
060S	9°F ± 1 (5.0°C ± 0.5)
072S	10°F ± 1 (5.6°C ± 0.5)

V- SYSTEMS SERVICE CHECKS

A-Cooling System Service Checks

TCA units are factory charged and require no further adjustment; however, charge should be checked periodically using the approach method. The approach method compares actual liquid temperature with the outdoor ambient temperature. See section IV- CHARGING.

NOTE-When unit is properly charged discharge line pressures should approximate those in tables 4 through 12.

VI-MAINTENANCE

The unit should be inspected once a year by a qualified service technician.

! WARNING



Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

! CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

! WARNING

Product contains fiberglass wool. Disturbing the insulation in this product during installation, maintenance, or repair will expose you to fiberglass wool. Breathing this may cause lung cancer. (Fiberglass wool is known to the State of California to cause cancer.) Fiberglass wool may also cause respiratory, skin, and eye irritation. To reduce exposure to this substance or for further information, consult material safety data sheets available from address shown on unit nameplate or contact your supervisor.

A-Filters

Units are equipped with temporary filters which must be replaced prior to building occupation. See table 14 for correct filter size. Refer to local codes or appropriate jurisdiction for approved filters.

**TABLE 14
UNIT FILTERS**

Unit	Qty	Filter Size - inches (mm)
024, 030, 036, 048, 060	4	16 X 20 X 2 (406 X 508 X 51)
072	4	20 X 20 X 2 (508 X 508 X 51)

NOTE-Filters must be U.L.C. certified or equivalent for use in Canada.

B-Supply Blower Wheel

Annually inspect supply air blower wheel for accumulated dirt or dust. Turn off power before attempting to remove access panel or to clean blower wheel.

C-Lubrication

All motors are lubricated at the factory. No further lubrication is required.

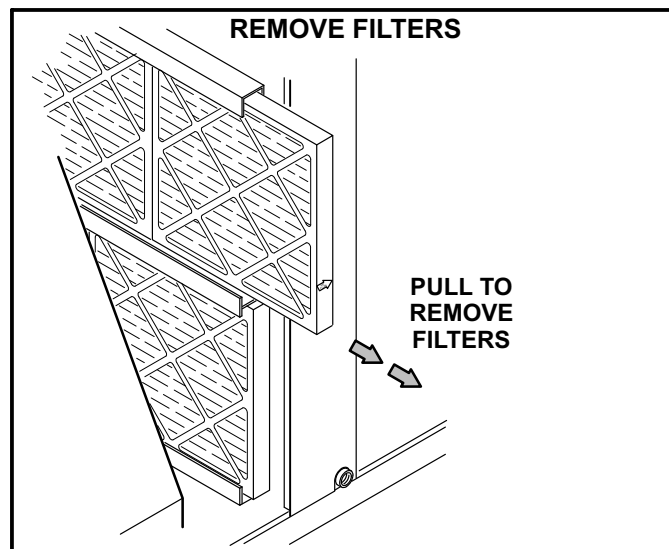


FIGURE 12

D-Evaporator Coil

Inspect and clean coil at beginning of each cooling season. Clean using mild detergent or commercial coil cleanser. Flush coil and condensate drain with water taking care not to get insulation, filters and return air ducts wet.

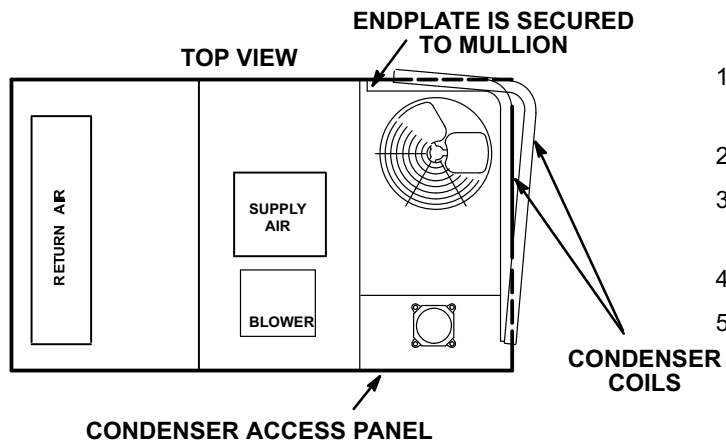
E-Condenser Coil

Clean condenser coil annually with detergent or commercial coil cleaner and inspect monthly during the cooling season.

Condenser coils are made of single and two formed slabs. On units with two slabs, dirt and debris may become trapped between the slabs. To clean between slabs, carefully separate coil slabs and wash them thoroughly. See figure 13. Flush coils with water following cleaning.

Note - Remove all screws and gaskets prior to cleaning procedure and replace upon completion.

CLEAN CONDENSER COIL



- 1- Remove unit top panel and condenser section access panel.
- 2- Remove screws securing coil end plate to mullion.
- 3- Remove clips connecting coils slabs and separate slabs 3-4" (76-102mm).
- 4- Clean coils with detergent or commercial coil cleaner.
- 5- Rinse thoroughly with water and reassemble.

FIGURE 13

VII-ACCESSORIES

The accessories section describes the application of most of the optional accessories which can be factory or field installed to the TCA units.

A-T1CURB

When installing either the TCA units on a combustible surface for downflow discharge applications, the T1CURB 8 inch, 14-inch, 18 inch or 24-inch height roof mounting frame is used. The roof mounting frames are recommended in all other applications but not required. If the TCA units are not mounted on a flat (roof) surface, they **MUST** be supported under all edges and under the middle of the unit to prevent sagging. The units **MUST** be mounted level within 1/16" per linear foot or 5mm per meter in any direction.

The assembled mounting frame is shown in figure 14. Refer to the roof mounting frame installation instructions for details of proper assembly and mounting. The roof mounting frame **MUST** be squared to the roof and level before mounting. Plenum system **MUST** be installed before the unit is set on the mounting frame. Typical roof curbing and flashing is shown in figure 15. Refer to the roof mounting frame installation instructions for proper plenum construction and attachment.

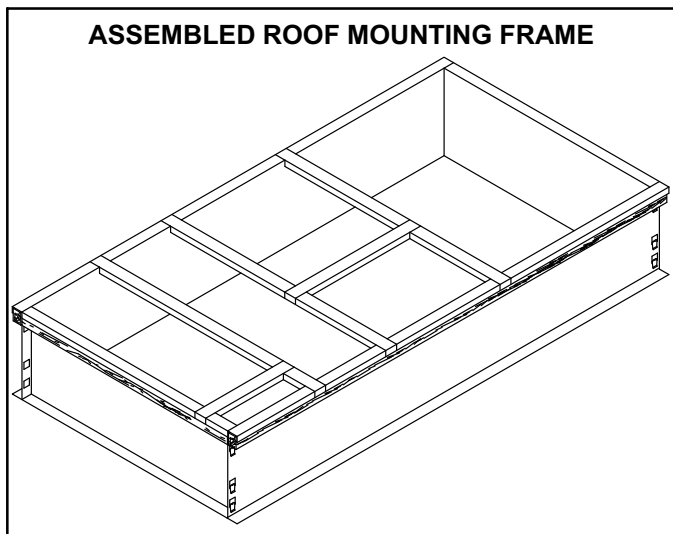


FIGURE 14

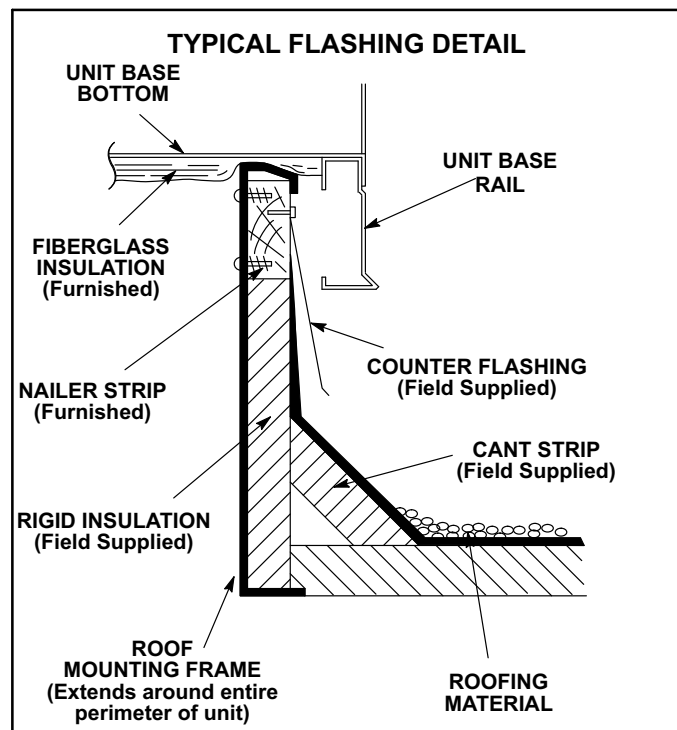


FIGURE 15

B-Transitions

Optional supply/return transitions T1TRAN10AN1 is available for use with the TCA 2, 2.5, 3, 4 and 5 units and the T1TRAN20N-1 is available for the 6 ton units utilizing optional T1CURB roof mounting frames. Transition must be installed in the roof mounting frame before mounting the unit to the frame. Refer to the manufacturer's instructions included with the transition for detailed installation procedures.

C-Outdoor Air Dampers

T1DAMP11A-1 is available for TCA 2, 2.5, 3, 4 and 5 ton unit and T1DAMP11N-1 is available for the TCA 6 ton units. Both sets include the outdoor air hood. A motorized kit (T1DAMP21AN1) can be ordered separately for all TCA unit sizes. The dampers may be manually or motor (M) operated to allow up to 25 percent outside air into the system at all times (see figure 16). Washable filter supplied with the outdoor air dampers can be cleaned with water and a mild detergent. It should be sprayed with Filter Handicoater when dry prior to reinstallation. Filter Handicoater is R.P. Products coating no. 418.

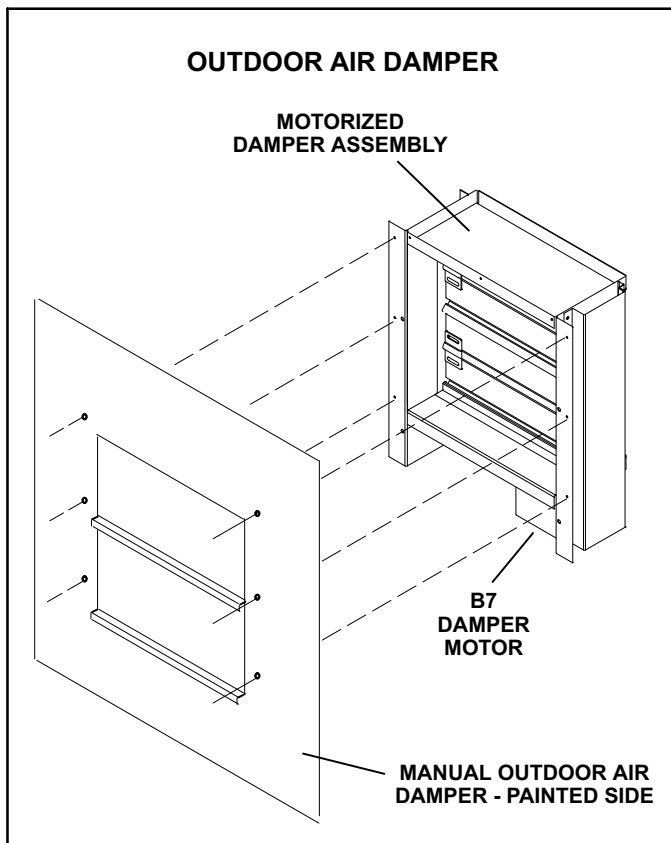


FIGURE 16

D-Supply and Return Diffusers (all units)

Optional flush mount diffuser/return FD9-65 and FD11-95 and extended mount diffuser/return RTD9-65 and RTD11-95 are available for use with all TCA units. Refer to manufacturer's instructions included with transition for detailed installation procedures.

E-Economizer

(Field or Factory Installed)

Unit may contain an optional factory-installed economizer equipped with an A6 enthalpy control and an A7 outdoor enthalpy sensor. The modulating economizer opens fully to use outdoor air for free cooling when temperature is suitable and opens to minimum position during the occupied time period.

The A6 enthalpy control is located in the economizer access area. See figure 17. The A7 enthalpy sensor is located on the division panel between horizontal supply and return air sections.

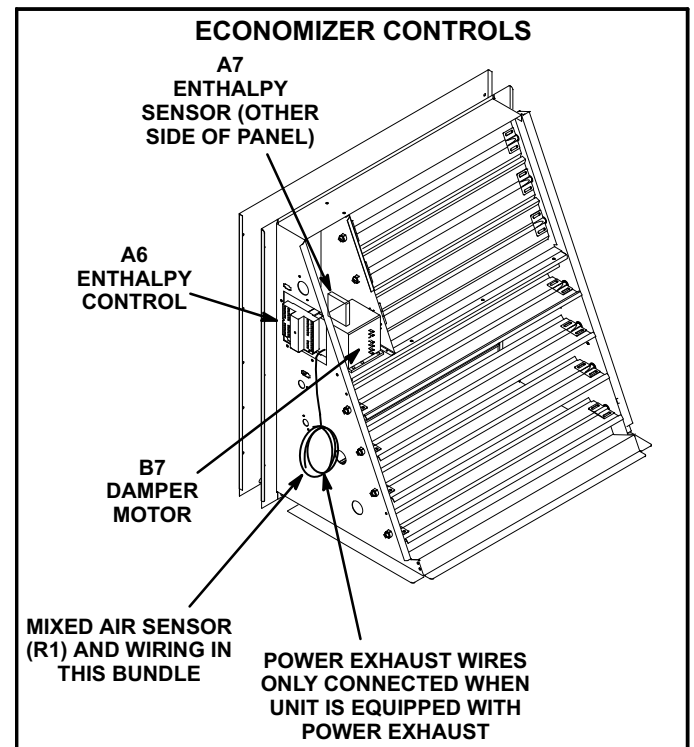


FIGURE 17

Optional Sensors

An optional differential sensor (A62) may be used with the A7 outdoor sensor to compare outdoor air enthalpy to return air enthalpy. When the outdoor air enthalpy is below the return air temperature, outdoor air is used for free cooling.

Mixed air sensor (R1) is used to modulate dampers to 55°F (13°C) discharge air.

An optional IAQ sensor (A63) may be used to lower operating costs by controlling outdoor air based on CO₂ level or room occupancy (also called demand control ventilation or DCV). Damper minimum position can be set lower than traditional minimum air requirements; dampers open to traditional ventilation requirements when CO₂ level reaches DCV (IAQ) setpoint.

Refer to instructions provided with sensors for installation.

A6 Enthalpy Control LED's

A steady green Free Cool LED indicates that outdoor air is suitable for free cooling.

When an optional IAQ sensor is installed, a steady green DCV LED indicates that the IAQ reading is higher than set-point requiring more fresh air. See figure 18.

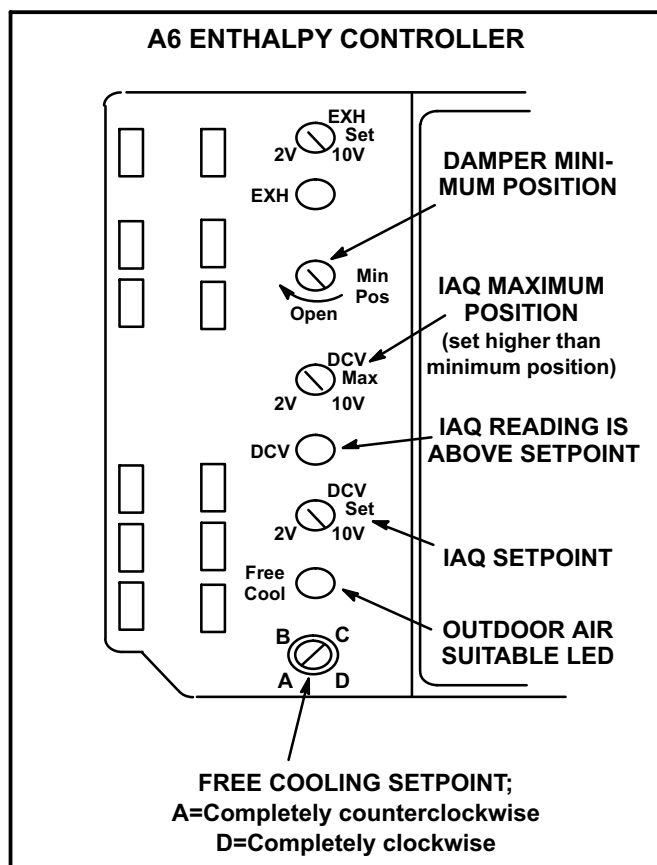


FIGURE 18

Free Cooling Setpoint

Outdoor air is considered suitable when temperature and humidity are less than the free cooling setpoints shown in table 15. Setting A is recommended. See figure 18. At setting A, free cooling will be energized when outdoor air is approximately 73°F (23°C) and 50% relative humidity. If indoor air is too warm or humid, lower the setpoint to B. At setting B, free cooling will be energized at 70°F (21°C) and 50% relative humidity.

When an optional A62 differential sensor is installed, turn A6 enthalpy control free cooling setpoint potentiometer completely clockwise to position “D”.

**TABLE 15
ENTHALPY CONTROL SETPOINTS**

Control Setting	Free Cooling Setpoint At 50% RH
A	73° F (23° C)
B	70° F (21° C)
C	67° F (19° C)
D	63° F (17° C)

Damper Minimum Position

NOTE - A jumper is factory-installed between TB1 A1 and A2 terminals to maintain occupied status (allowing minimum fresh air). When using an electronic thermostat or energy management system with an occupied/unoccupied feature, remove jumper.

- 1- Set thermostat to occupied mode if the feature is available. Make sure jumper is in place between A45 control board TB1 terminals A1 and A2 if using a thermostat which does not have the feature.
- 2- Rotate MIN POS SET potentiometer to approximate desired fresh air percentage.

Note - Damper minimum position can be set lower than traditional minimum air requirements when an IAQ sensor is specified. Dampers will open to DCV MAX setting (if CO₂ is above setpoint) to meet traditional ventilation requirements.

- 3- Measure outdoor air temperature. Mark the point on the bottom line of chart 1 and label the point “A” (40°F, 4°C shown).
- 4- Measure return air temperature. Mark that point on the top line of chart 1 and label the point “B” (74°F, 23°C shown).
- 5- Measure mixed air (outdoor and return air) temperature. Mark that point on the top line of chart 1 and label point “C” (70°F, 21°C shown).
- 6- Draw a straight line between points A and B.
- 7- Draw a vertical line through point C.
- 8- Draw a horizontal line where the two lines meet. Read the percent of fresh air intake on the side.
- 9- If fresh air percentage is less than desired, adjust MIN POS SET potentiometer higher. If fresh air percentage is more than desired, adjust MIN POS SET potentiometer lower. Repeat steps 3 through 8 until calculation reads desired fresh air percentage.

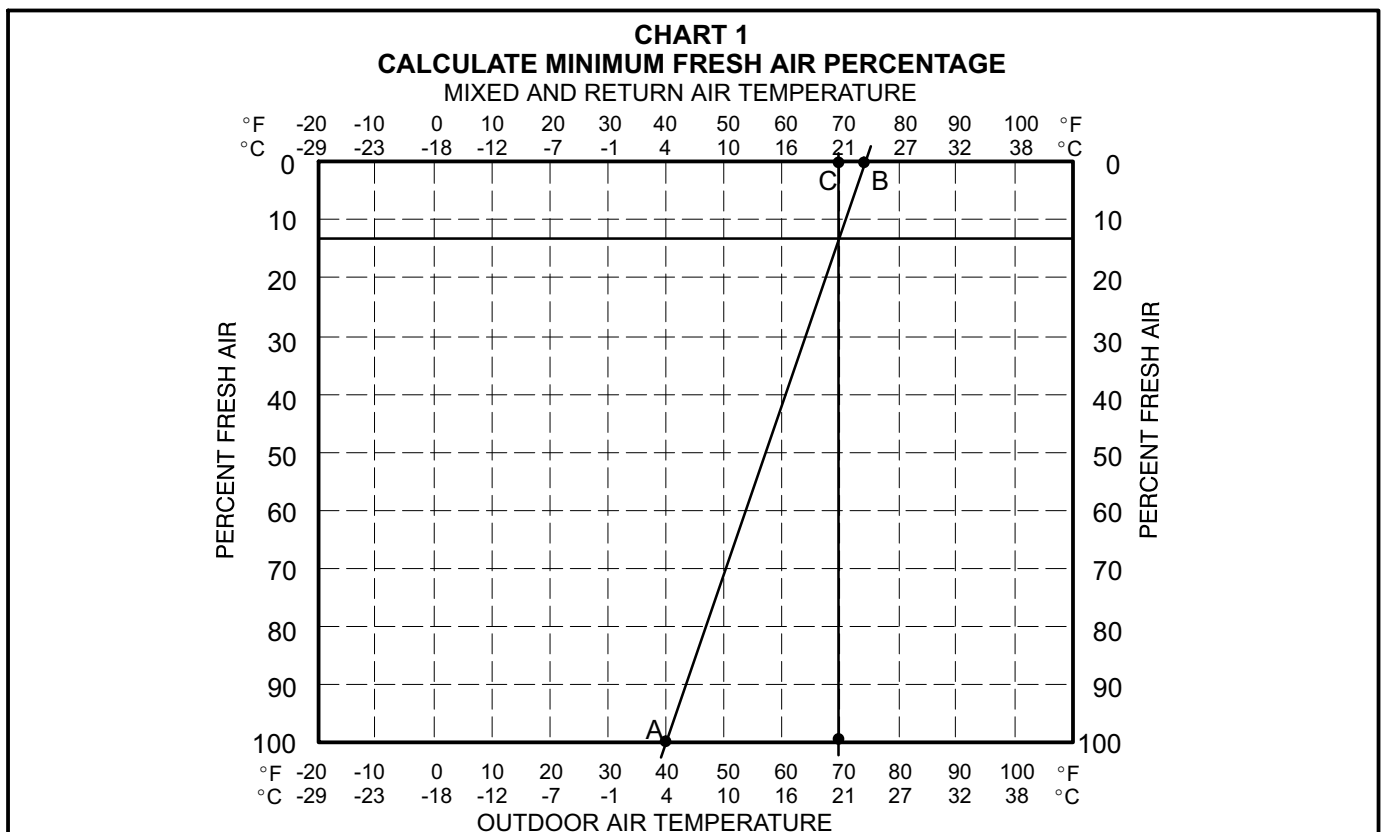
DCV Set and Max Settings

Adjust settings when an optional IAQ sensor is installed.

The DCV SET potentiometer is factory-set at approximately 50% of the potentiometer range. Using a standard 1-2000ppm CO₂ sensor, dampers will start to open when the IAQ sensor reads approximately 1000ppm. Adjust the DCV SET potentiometer to the approximate setting specified by the controls contractor. Refer to figure 18.

The DCV MAX potentiometer is factory-set at approximately 50% of the potentiometer range or 6VDC. Dampers will open approximately half way when CO₂ rises above setpoint. Adjust the DCV MAX potentiometer to the approximate setting specified by the controls contractor. Refer to figure 18.

Note - DCV Max must be set higher than economizer minimum position setting for proper demand control ventilation.



Economizer Operation

The occupied time period is determined by the thermostat or energy management system.

Outdoor Air Not Suitable:

During the unoccupied time period dampers are closed.

During the occupied time period a cooling demand will open dampers to minimum position and mechanical cooling functions normally.

During the occupied time period dampers will open to DCV MAX when IAQ reading is above setpoint (regardless of thermostat demand or outdoor air suitability).

Outdoor Air Suitable:

See table 16 for economizer operation with a standard two-stage thermostat.

During the occupied period, dampers will open to DCV MAX when IAQ reading is above setpoint (regardless of thermostat demand or outdoor air suitability). DCV MAX will NOT override damper full-open position. When an R1 mixed air sensor for modulating dampers is installed, DCV MAX may override damper free cooling position when occupancy is high and outdoor air temperatures are low. If R1 senses discharge air temperature below 45°F (7°C), dampers will move to minimum position until discharge air temperature rises to 48°F (9°C).

B-Outdoor Air Dampers

Optional manual and motorized outdoor air dampers provide fresh outdoor air. The motorized damper assembly opens to minimum position during the occupied time period and remains closed during the unoccupied period. Manual damper assembly is set at installation and remains in that position.

Set damper minimum position in the same manner as economizer minimum position. Adjust motorized damper position using the thumbwheel on the damper motor. See figure 19. Manual damper fresh air intake percentage can be determined in the same manner.

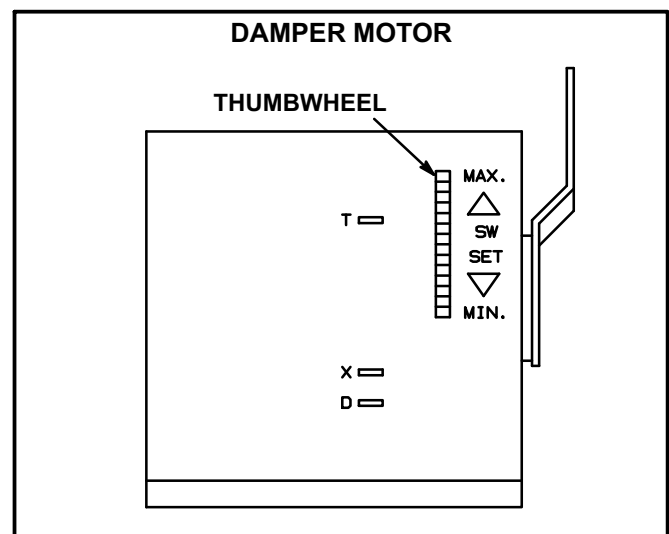


FIGURE 19

TABLE 16
ECONOMIZER OPERATION

OUTDOOR AIR IS SUITABLE FOR FREE COOLING – FREE COOL LED “ON”

THERMOSTAT DEMAND	DAMPER POSITION		MECHANICAL COOLING
	UNOCCUPIED	OCCUPIED	
OFF	CLOSED	CLOSED	NO
G	CLOSED	MINIMUM	NO
Y1	OPEN*	OPEN*	NO
Y2	OPEN*	OPEN*	STAGE 1

*Dampers will modulate to maintain 55°F (13°C) supply air when an R1 mixed air sensor is installed.

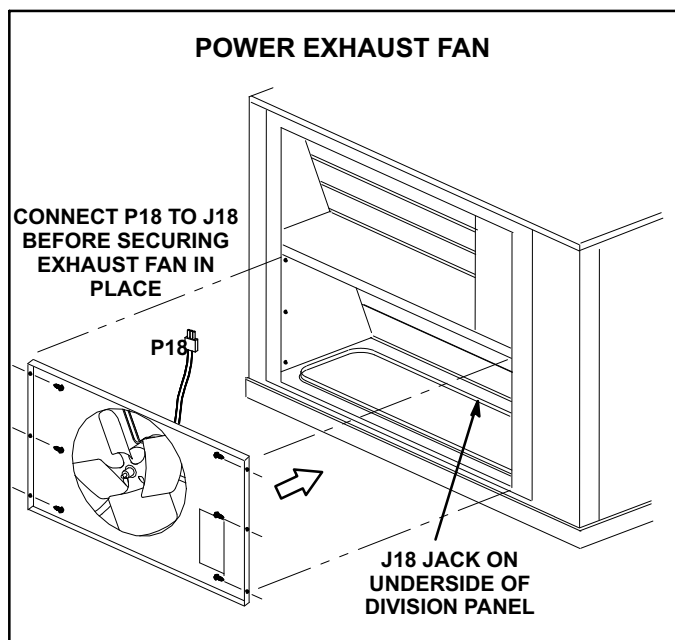


FIGURE 20

F-Power Exhaust Fans

T1PWRE10A available for TCA 3, 4 and 5 ton units and T1PWRE10N available for 6 ton units, provide exhaust air pressure relief and also run when return air dampers are closed and supply air blowers are operating. See figure 20 and installation instructions for more detail.

G-Power Exhaust Relay K65 (power exhaust units)

Power exhaust relay K65 is a DPDT relay with a 24VAC coil. K65 is used in all TCA units equipped with the optional power exhaust dampers. K65 is energized by the economizer enthalpy control A6, after the economizer dampers reach 50% open (adjustable) When K65 closes, exhaust fan B10 is energized.

H-Dirty Filter Switch S27

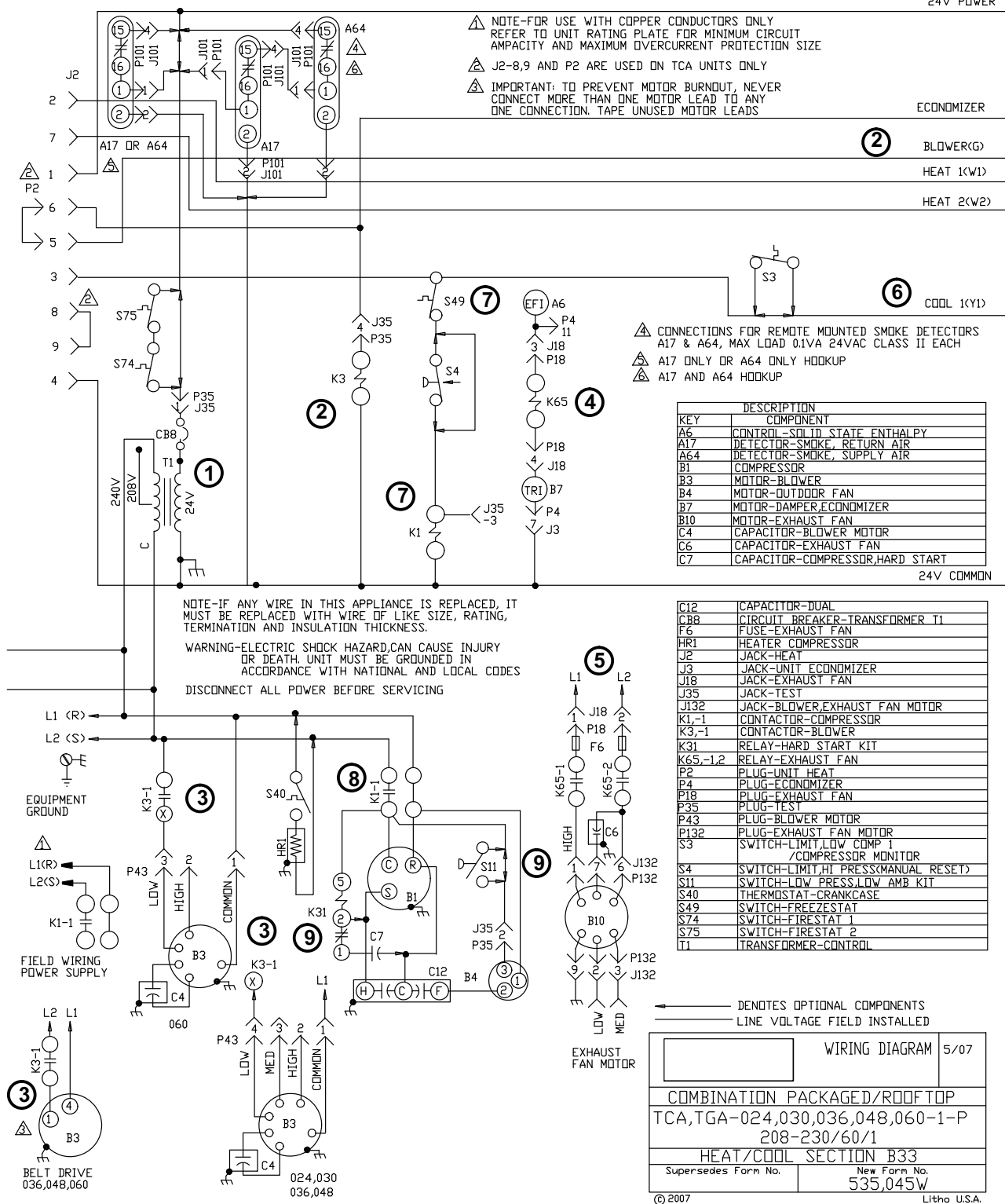
The dirty filter switch senses static pressure increase indicating a dirty filter condition. The switch is N.O. and closes at 1" W.C. (248.6 Pa) The switch is mounted in the filter section on the left unit mullion.

I-Indoor Air Quality (CO₂) Sensor A63

The indoor air quality sensor monitors CO₂ levels and reports the levels to the economizer enthalpy control A6. Controller A6 adjusts the economizer dampers according to the CO₂ levels. The sensor is mounted next to the indoor thermostat or in the return air duct. Refer to the indoor air quality sensor installation instructions for proper adjustment.

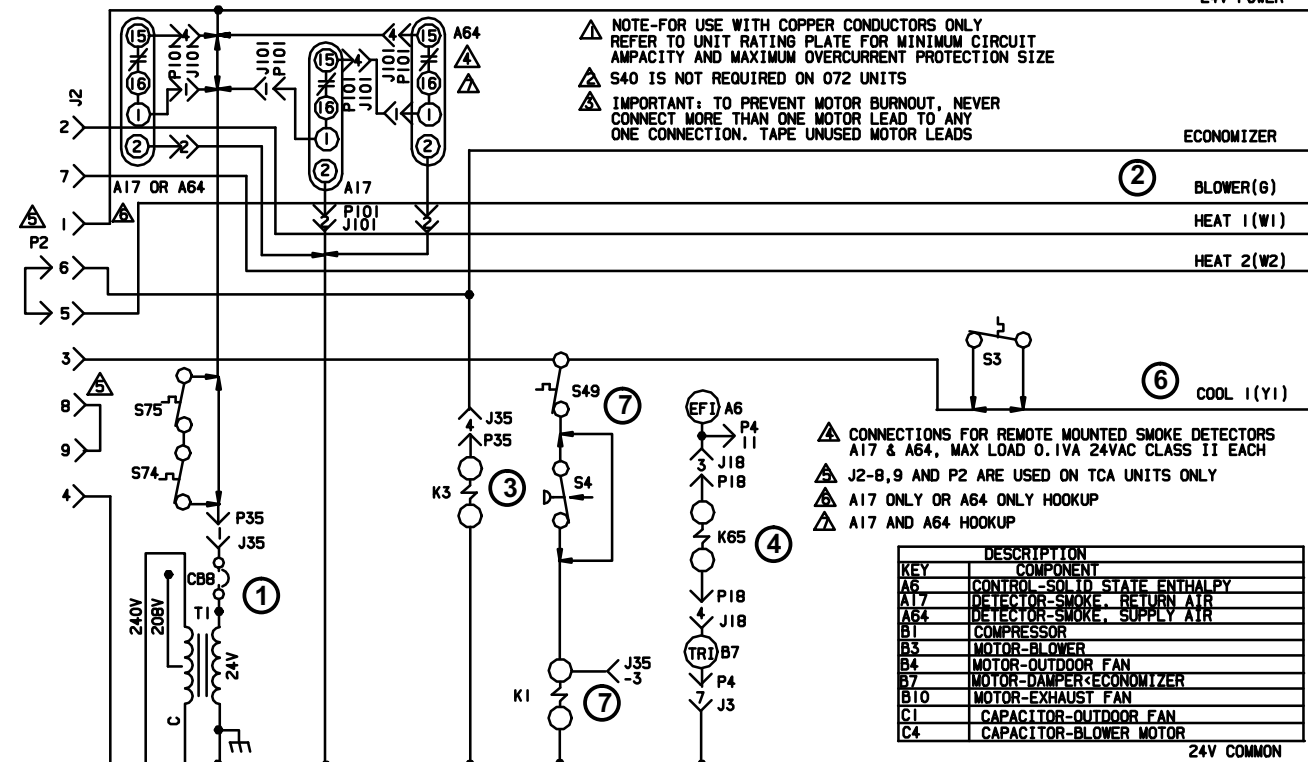
TCA024/060 P VOLTAGE UNIT DIAGRAM

24V POWER



TCA036/072 Y VOLTAGE UNIT DIAGRAM

24V POWER



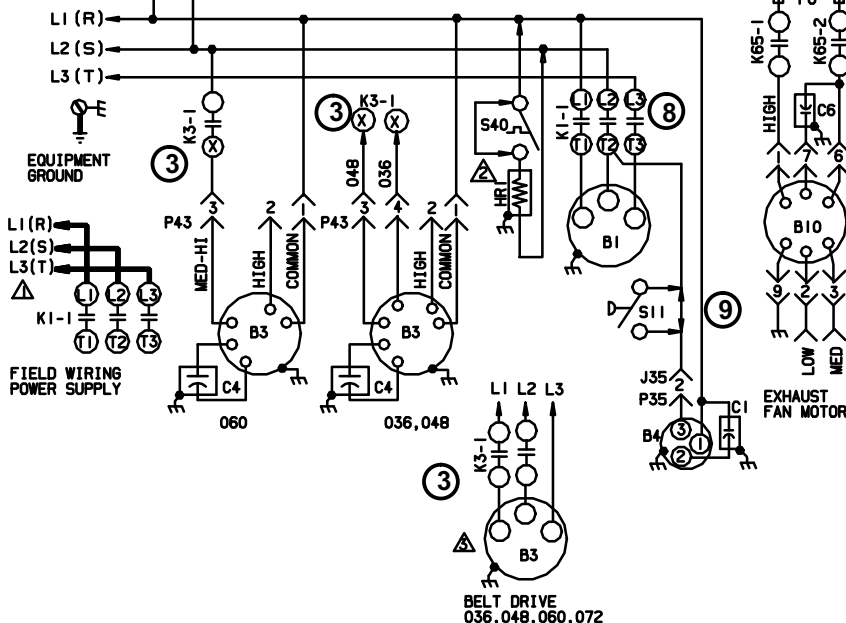
NOTE-IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT
 MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING,
 TERMINATION AND INSULATION THICKNESS.

WARNING-ELECTRIC SHOCK HAZARD,CAN CAUSE INJURY
 OR DEATH. UNIT MUST BE GROUNDED IN
 ACCORDANCE WITH NATIONAL AND LOCAL CODES

DISCONNECT ALL POWER BEFORE SERVICING

KEY	DESCRIPTION
C6	CAPACITOR-EXHAUST FAN
CB8	CIRCUIT BREAKER-TRANSFORMER T1
F6	FUSE-EXHAUST FAN
HRI	HEATER COMPRESSOR
J2	JACK-HEAT
J3	JACK-UNIT ECONOMIZER
J18	JACK-EXHAUST FAN
J35	JACK-TEST
J132	JACK-BLOWER,EXHAUST FAN MOTOR
K1-1	CONTACTOR-COMPRESSOR
K3-1	CONTACTOR-BLOWER
K65-1,2	RELAY-EXHAUST FAN
P2	PLUG-UNIT HEAT
P4	PLUG-ECONOMIZER
P18	PLUG-EXHAUST FAN
P35	PLUG-TEST
P43	PLUG-BLOWER MOTOR
P132	PLUG-EXHAUST FAN MOTOR
S3	SWITCH-LIMIT,LOW COMP 1
S4	SWITCH-LIMIT,H1 PRESS(MANUAL RESET)
S11	SWITCH-LOW PRESS,LOW AMB KIT
S40	THERMOSTAT-CRANKCASE
S49	SWITCH-FREEZESTAT
S74	SWITCH-FIRESTAT 1
S75	SWITCH-FIRESTAT 2
T1	TRANSFORMER-CONTROL

← DENOTES OPTIONAL COMPONENTS
 — LINE VOLTAGE FIELD INSTALLED



WIRING DIAGRAM	1/06
COMBINATION PACKAGED/ROOFTOP	
TCA, TGA-036, 048, 060, 072-1-Y	
208-230/60/3	
HEAT/COOL SECTION B33	
Supersedes Form No.	New Form No.
	535, 046W

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24V POWER



▲ S40 IS NOT REQUIRED ON 072 UNITS

ECONOMIZER

② BLOWER (G)

HEAT 1 (WI)

HEAT 2(W2)

⚠ IMPORTANT: TO PREVENT MOTOR BURNOUT, NEVER CONNECT MORE THAN ONE MOTOR LEAD TO ANY ONE CONNECTION. TAPE UNUSED MOTOR LEADS

⑥ COOL 1(YI)

**4 CONNECTIONS FOR REMOTE MOUNTED SMOKE DETECTORS
A17 & A64. MAX LOAD 0.1VA 24VAC CLASS II EACH**

5 J2-8.9 AND P2 ARE USED ON TCA UNITS ONLY

△ 6 A17 ONLY OR A64 ONLY HOOKUP

A17 AND A64 HOOKUP

KEY	DESCRIPTION
A6	CONTROL-SOLID STATE ENTHALPY
A17	DETECTOR-SMOKE, RETURN AIR
A64	DETECTOR-SMOKE, SUPPLY AIR
B1	COMPRESSOR
B3	MOTOR-BLOWER
B4	MOTOR-OUTDOOR FAN
B7	MOTOR-DAMPER ECONOMIZER
B10	MOTOR-EXHAUST FAN

24V COMMON

NOTE-IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, TERMINATION AND INSULATION THICKNESS.

WARNING-ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES

DISCONNECT ALL POWER BEFORE SERVICING

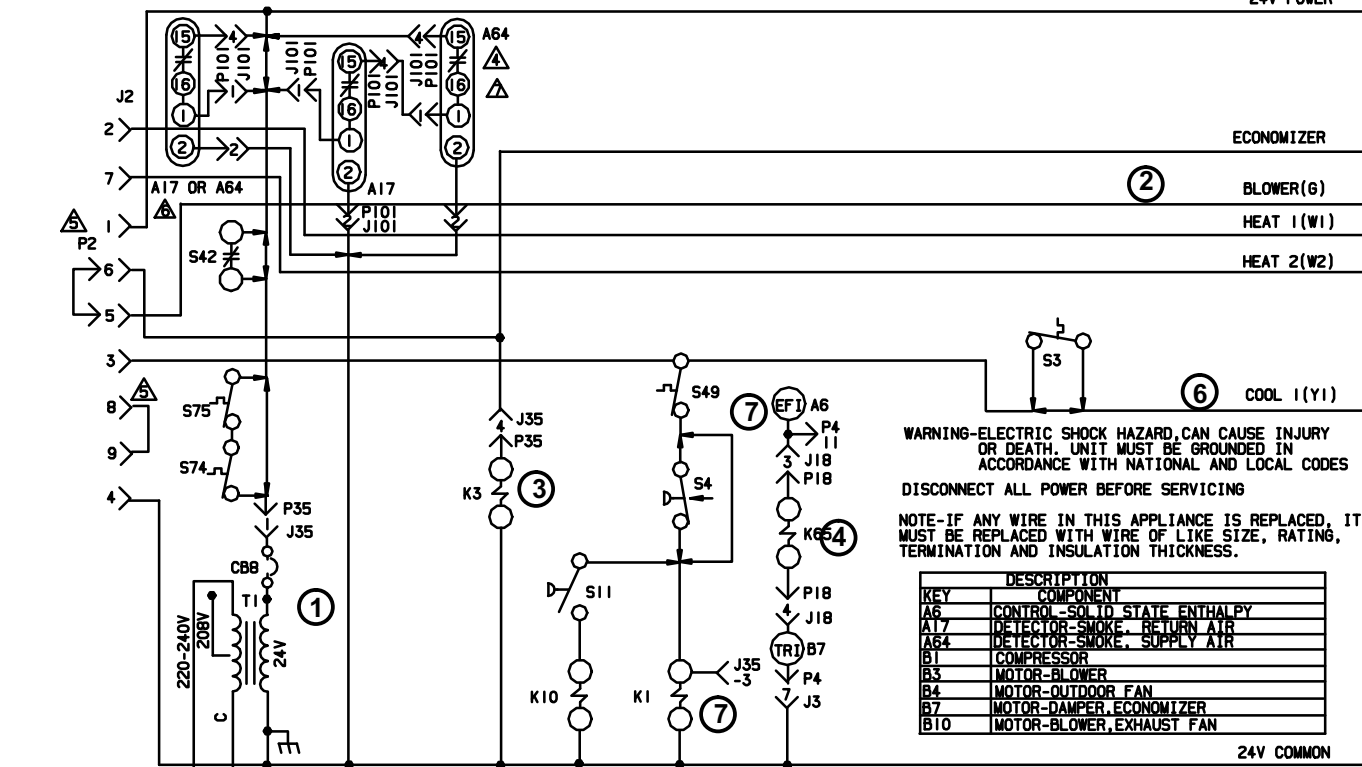
C1	CAPACITOR-OUTDOOR FAN
C4	CAPACITOR-BLOWER MOTOR
C6	CAPACITOR-EXHAUST FAN
CBB	CIRCUIT BREAKER-TRANSFORMER T1
F6	FUSE-EXHAUST FAN
HRI	HEATER COMPRESSOR
J2	JACK-HEAT
J3	JACK-UNIT,ECONOMIZER
J18	JACK-EXHAUST FAN
J35	JACK-TEST
J132	JACK-BLOWER,EXHAUST FAN MOTOR
K1.-1	CONTACTOR-COMPRESSOR
K3.-1	CONTACTOR-BLOWER
K10.-1	RELAY-OUTDOOR FAN 1
K65.-1,2	RELAY-EXHAUST FAN
P2	PLUG-UNIT HEAT
P4	PLUG-ECONOMIZER
P18	PLUG-EXHAUST FAN
P35	PLUG-TEST
P43	PLUG-BLOWER MOTOR
P132	PLUG-EXHAUST FAN MOTOR
S3	SWITCH-LIMIT,LOW COMP 1 /COMPRESSOR MONITOR
S4	SWITCH-LIMIT HI PRESS(MANUAL RESET)
S11	SWITCH-LOW PRESS,LOW AMB KIT
S40	THERMOSTAT-CRANKCASE
S49	SWITCH-FREEZESTAT
S74	SWITCH-FIRESTAT 1
S75	SWITCH-FIRESTAT 2
T1	TRANSFORMER-CONTROL
T4	TRANSFORMER-BLOWER MOTOR

— DENOTES OPTIONAL COMPONENTS
= LINE VOLTAGE FIELD INSTALLED

WIRING DIAGRAM		1/06
COMBINATION PACKAGED/ROOF TOP		
TCA, TGA-036, 048, 060, 072-1-G, J		
HEAT/COOL SECTION B33		
Supersedes Form No.	New Form No. 535, 043W	

TCA036/072 M VOLTAGE UNIT DIAGRAM

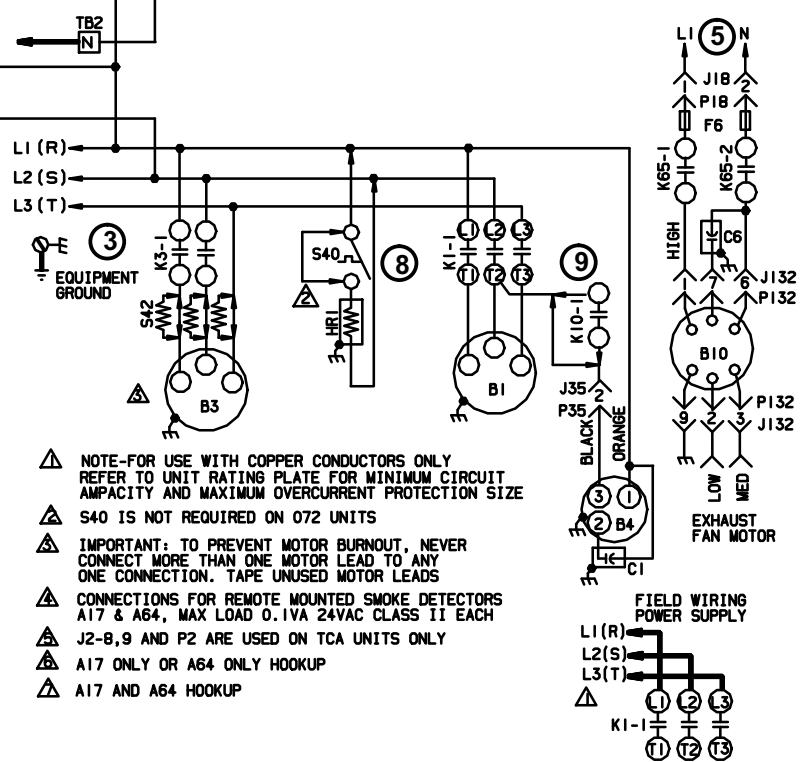
24V POWER



WARNING-ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES
DISCONNECT ALL POWER BEFORE SERVICING
NOTE-IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, TERMINATION AND INSULATION THICKNESS.

KEY	DESCRIPTION
A6	CONTROL-SOLID STATE ENTHALPY
A17	DETECTOR-SMOKE-RETURN AIR
A64	DETECTOR-SMOKE-SUPPLY AIR
B1	COMPRESSOR
B3	MOTOR-BLOWER
B4	MOTOR-OUTDOOR FAN
B7	MOTOR-DAMPER-ECONOMIZER
B10	MOTOR-BLOWER, EXHAUST FAN

24V COMMON



KEY	DESCRIPTION
C1	CAPACITOR-OUTDOOR FAN
C6	CAPACITOR-EXHAUST FAN
CB8	CIRCUIT BREAKER-TRANSFORMER T1
F6	FUSE-EXHAUST FAN
HRI	HEATER COMPRESSOR
J2	JACK-HEAT
J3	JACK-UNIT ECONOMIZER
J18	JACK-TEST
J101	JACK-EXHAUST FAN
J132	JACK-BLOWER EXHAUST FAN MOTOR
K1	CONTACTOR-COMPRESSOR
K3	CONTACTOR-BLOWER
K10	RELAY-OUTDOOR FAN 1
K65	RELAY-EXHAUST FAN
P2	PLUG-UNIT HEAT
P4	PLUG-ECONOMIZER
P18	PLUG-EXHAUST FAN
P35	PLUG-TEST
P132	PLUG-EXHAUST FAN MOTOR
S3	SWITCH-LIMIT, LOW COMP 1 /COMPRESSOR MONITOR
S4	SWITCH-LIMIT, HI PRESS (MANUAL RESET)
S11	SWITCH-LOW PRESS, LOW AMB KIT
S40	THERMOSTAT-CRANKCASE
S42	SWITCH-OVERLOAD, RELAY, BLWR MTR
S49	SWITCH-FREEZESTAT
S74	SWITCH-FIRESTAT 1
S75	SWITCH-FIRESTAT 2
T1	TRANSFORMER-CONTROL
TB2	TERMINAL STRIP-UNIT

— DENOTES OPTIONAL COMPONENTS
— LINE VOLTAGE FIELD INSTALLED

WIRING DIAGRAM	
COMBINATION PACKAGED/ROOFTOP	1/06
TCA, TGA-036, 048, 060, 072-1-M	
380-420/50/3	
HEAT/COOL SECTION B33	
Supersedes Form No.	New Form No.
	535,044W

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TCA024/072 P, Y, G, J & M Voltage Sequence of Operation

Power:

1. Line voltage from unit disconnect energizes transformer T1. T1 provides 24VAC power to terminal strip TB1. TB1 provides 24VAC to the unit cooling, heating and blower controls.

Blower Operation:

2. Indoor thermostat terminal G energizes blower contactor K3 with 24VAC.
3. N.O. K3 closes, energizing blower B3.

Economizer Operation:

4. The economizer control module receives a demand and energizes exhaust fan relay K65 with 24VAC at 50% outside air damper open (adjustable).
5. N.O. K65-1 and N.O. K65-2 both close, energizing exhaust fan motor B10.

Cooling Demand

6. First stage cooling demand Y1 and G is energized by the thermostat. G energizes blower.
7. 24VAC is routed through TB1 to N.C. freezestat S49, and optional N.C. high pressure switch S4. Compressor contactor K1 is energized.
8. N.O. K1-1 close energizing compressor B1.

9. *Single Phase P Voltage Units*

Discharge line pressure rises to 275 psig closing optional N.O. low ambient switch S1 1 energizing condenser fan B4. Optional start relay K31 is energized to help in start up of compressor B1.

Three Phase Y Voltage Units

Discharge line pressure rises to 275 psig closing optional N.O. low ambient switch S11, energizing condenser fan B4.

Three Phase G, J & M Voltage Units

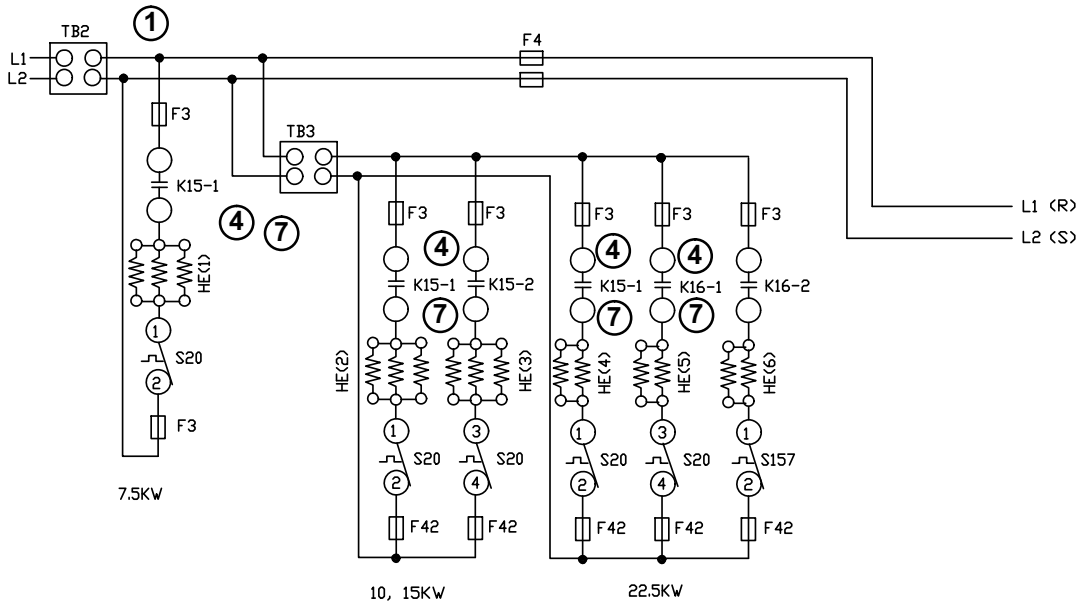
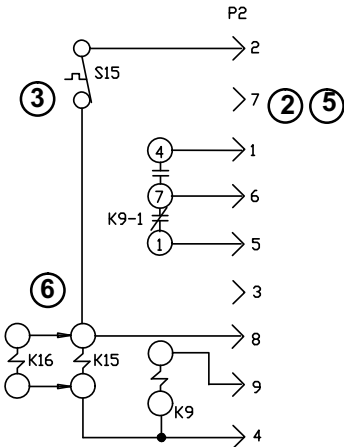
Discharge line pressure rises to 275 psig closing optional N.O. low ambient switch S11, energizing condenser fan relay K10.

N.O. contacts K10-1 close energizing condenser fan B4 .

T1EH-7.5, 10, 15, 22.5 kW P VOLTAGE

24V POWER

KEY	DESCRIPTION
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
F42	FUSE-ELECTRIC HEAT 2
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
HE3	ELEMENT-ELECTRIC HEAT 3
HE4	ELEMENT-ELECTRIC HEAT 4
HE5	ELEMENT-ELECTRIC HEAT 5
HE6	ELEMENT-ELECTRIC HEAT 6
K9-1	RELAY-HEAT
K15-1,2	CONTACTOR-ELECTRIC HEAT 1
K16-1,2	CONTACTOR-ELECTRIC HEAT 2
P2	PLUG-UNIT HEAT
S15	SWITCH-LIMIT,PRIMARY ELECT HT
S20	SWITCH-LIMIT,SECONDARY ELECT HT
S157	SWITCH-LIMIT,SECONDARY ELECT HT 2
TB2	TERMINAL STRIP-UNIT
TB3	TERMINAL STRIP-ELECTRIC HEAT,CIRC 1



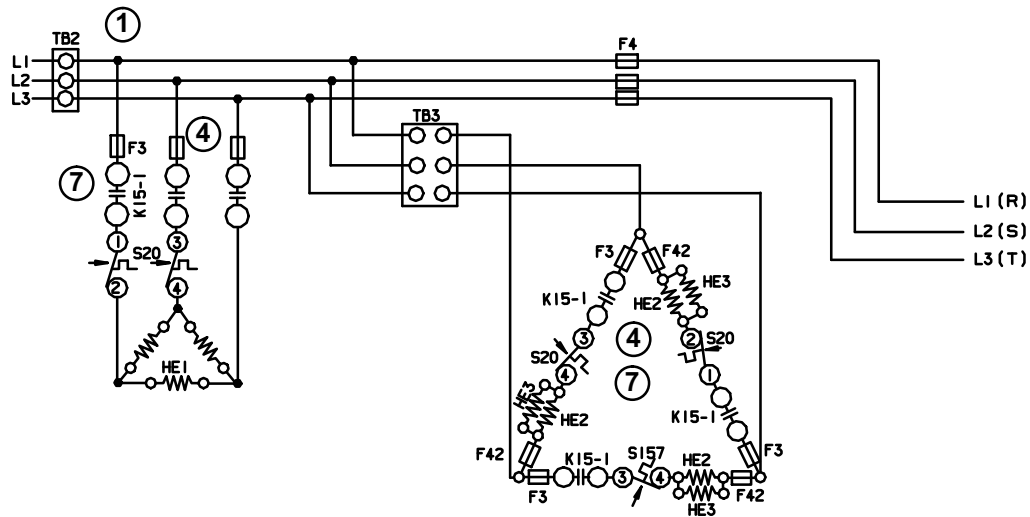
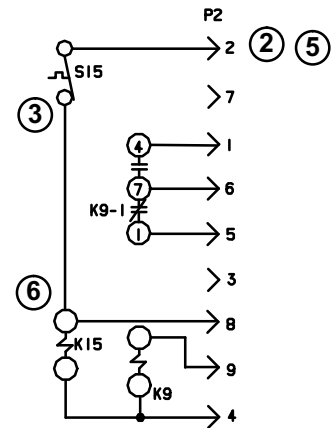
KW	HE1	HE2	HE3	HE4	HE5	HE6
7.5	7.5	5	5			
10		7.5	7.5			
15				7.5	7.5	7.5
22.5						

WIRING DIAGRAM	3/07
HEATING-ELECTRIC	
T1EH-7.5,10,15,22.5-P	
A BOX	
HEATING SECTION A3	
Supersedes Form No.	New Form No.
	535,048W
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T1EH-7.5, 15, 22.5, 30 Y VOLTAGE

24V POWER

KEY	DESCRIPTION
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
F42	FUSE-ELECTRIC HEAT 2
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
HE3	ELEMENT-ELECTRIC HEAT 3
K9-1	RELAY-HEAT
K15-1	CONTACTOR-ELECTRIC HEAT 1
P2	PLUG-UNIT HEAT
S15	SWITCH-LIMIT, PRIMARY ELECT HT
S20	SWITCH-LIMIT, SECONDARY ELECT HT
S157	SWITCH-LIMIT, SECONDARY ELECT HT 2
TB2	TERMINAL STRIP-UNIT
TB3	TERMINAL STRIP-ELECTRIC HEAT, CIRC 1



072	060	036	048
KW	HE1	HE2	HE3
7.5	7.5		
15	15		
22.5		15	7.5
30		15	15

WIRING DIAGRAM	9/05
HEATING-ELECTRIC	
T1EH-7.5, 15, 22.5, 30-Y	
HEATING SECTION A4	
Supersedes Form No.	New Form No.
	535,049W

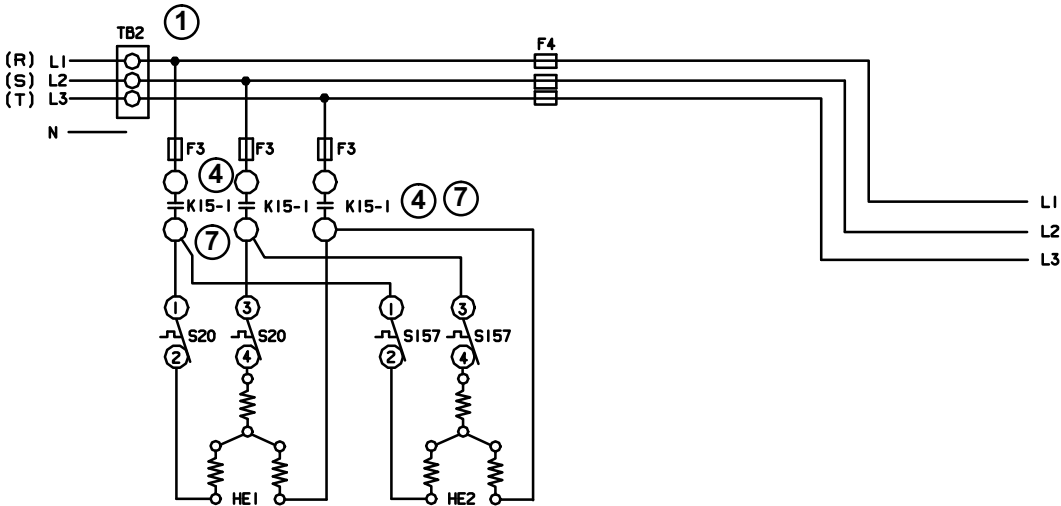
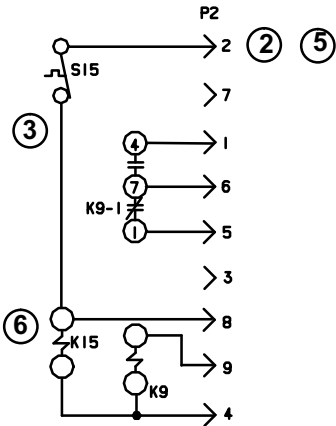
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T1EHA-7.5, 15, 22.5, 30, 45 & 60kW G, J, M VOLTAGE

24V POWER

KEY	DESCRIPTION
F3	FUSE-ELECTRIC HEAT
F4	FUSE-UNIT
HE1	ELEMENT-ELECTRIC HEAT 1
HE2	ELEMENT-ELECTRIC HEAT 2
K9-I	RELAY-HEAT
K15-I	CONTACTOR-ELECTRIC HEAT 1
P2	PLUG-UNIT HEAT
S15	SWITCH-LIMIT, PRIMARY ELECT HT
S20	SWITCH-LIMIT, SECONDARY ELECT HT
S157	SWITCH-LIMIT, SECONDARY ELECT HT 2
TB2	TERMINAL STRIP-UNIT



072	060	036	048	KW	HE1	HE2
				7.5	7.5	
				15	15	
				22.5	15	7.5
				30	15	15

WIRING DIAGRAM		9/05
HEATING-ELECTRIC		
T1EH-7.5, 15, 22.5, 30-G, J, M		
A BOX		
HEATING SECTION A2		
Supersedes Form No.	New Form No.	
	535,047W	
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Sequence of Operation -T1EH 7.5, 10, 15, 22.5- P Voltage

HEATING ELEMENTS:

- 1 - Terminal Strip TB2 is energized when the unit disconnect closes. TB2 supplies line voltage to electric heat elements HE1 and TB3. TB3 supplies line voltage to HE2 through HE6. Elements are protected by fuses F3 and F42.

FIRST STAGE HEAT:

- 2 - Heating demand initiates at W1 in thermostat.
- 3 - 24VAC is routed from the indoor thermostat through N.C. primary limit S15. Electric heat contactor K15 and heat relay K9 are energized. K9 energizes blower contactor K3 and economizer.
- 4 - *7.5kW units* - N.O. contacts K15-1 close energizing HE1.
10kW 15kW units - K15-1 and K15-2 close energizing HE2 and HE3.
22.5kW units - K15-1, K16-1 and K16-2 close energizing HE4, HE5 and HE6.

END OF FIRST STAGE HEAT:

- 5 - Heating demand is satisfied. Terminal W1 in the thermostat is de-energized.
- 6 - Electric heat contactor K15 is de-energized.
- 7 - *7.5kW units* - N.O. contacts K15-1 open de-energizing HE1.
15kW units - K15-1 and K15-2 open de-energizing HE2 and HE3.
22.5kW units - K15-1, K16-1 and K16-2 open de-energizing HE4, HE5 and HE6.

Sequence of Operation -T1EH 7.5, 15, 22.5, 30 kW - Y, G, J and M Voltage

HEATING ELEMENTS:

- 1 - Terminal Strip TB2 is energized when the unit disconnect closes. TB2 supplies line voltage to electric heat elements HE1 and TB3. TB3 supplies line voltage to HE2 and HE3. Elements are protected by fuses F3 and or F42.

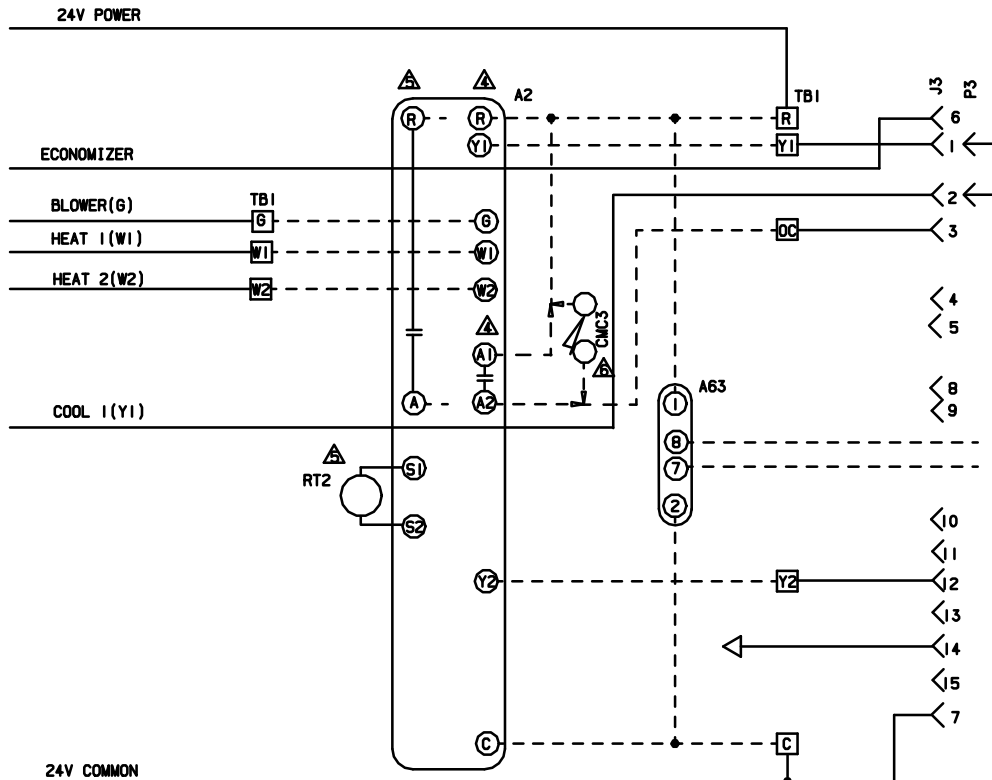
FIRST STAGE HEAT:

- 2 - Heating demand initiates at W1 in thermostat.
- 3 - 24VAC is routed from the indoor thermostat through N.C. primary limit S15. Electric heat contactor K15 and heat relay K9 are energized. Heat relay K9 energizes blower contactor K3 and economizer.
- 4 - *7.5kW and 15kW units* - N.O. contacts K15-1 close energizing HE1.
22.5kW and 30kW units - N.O. contacts K15-1 close energizing HE2 and HE3.

END OF FIRST STAGE HEAT:

- 5 - Heating demand is satisfied. Terminal W1 in the thermostat is de-energized.
- 6 - Electric heat contactor K15 is de-energized.
- 7 - *7.5kW and 15kW units* - N.O. contacts K15-1 open de-energizing HE1.
22.5kW and 30kW units - N.O. contacts K15-1 open de-energizing HE2 and HE3.

ELECTRONIC OR ELECTROMECHANICAL THERMOSTAT



KEY	DESCRIPTION
A2	SENSOR-ELECTRONIC
A63	SENSOR-CO2
CMC3	CLOCK-TIME
J3	JACK-UNIT ECONOMIZER
P3	PLUG-LESS ECONOMIZER
RT2	SENSOR-REMOTE THERMOSTAT
TB1	TERMINAL STRIP-CLASS II VOLTAGE

- △ THERMOSTAT SUPPLIED BY USER
- △ REMOVE P3 WHEN ECONOMIZER IS USED
- △ J3 MAXIMUM LOAD 20VA 24VAC CLASS II
- △ T7300 THERMOSTAT
- △ T88220 TOUCHSCREEN THERMOSTAT
- △ TIME CLOCK CONTACTS (OPT) CLOSED OCCUPIED

→	DESIGNATES OPTIONAL WIRING
- - -	CLASS II FIELD WIRING
WIRING DIAGRAM 11/05	
ACCESSORIES	
ELECTRONIC OR ELECTROMECHANICAL THERMOSTAT "T" SERIES UNITS	
A BOX	
ECONOMIZER SECTION C1	
Supersedes Form No.	New Form No. 535,057W
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POWER:

- Terminal strip TB1 found in the main control box supplies thermostat components with 24VAC.

OPERATION:

- TB1 receives signal from the electronic thermostat A2 (Y1, Y2, W1, W2, G) and energizes the appropriate components for heat or cool demand.

[illegible]

KEY	DESCRIPTION
A6	CONTROL SOLID STATE ENTHALPY
A7	SENSOR SOLID STATE ENTHALPY
A62	SENSOR ENTHALPY INDOOR
B4	MOTOR DAMPER, ECONOMIZER
B7	PLUG ECONOMIZER
R1	SENSOR MIXED AIR OR SUPPLY AIR
R2	POT-MINIMUM POSITION
RT26	SENSOR-OUTDOOR AIR TEMP
RT27	SENSOR-INDOOR AIR TEMP
TR	TERMINAL STATUS

 RT26 AND RT27, TEMPERATURE SENSORS MAY BE USED INSTEAD OF A7 AND A62 ENTHALPY SENSORS

 DESIGNATES OPTIONAL WIRING
 CLASS II FIELD WIRING

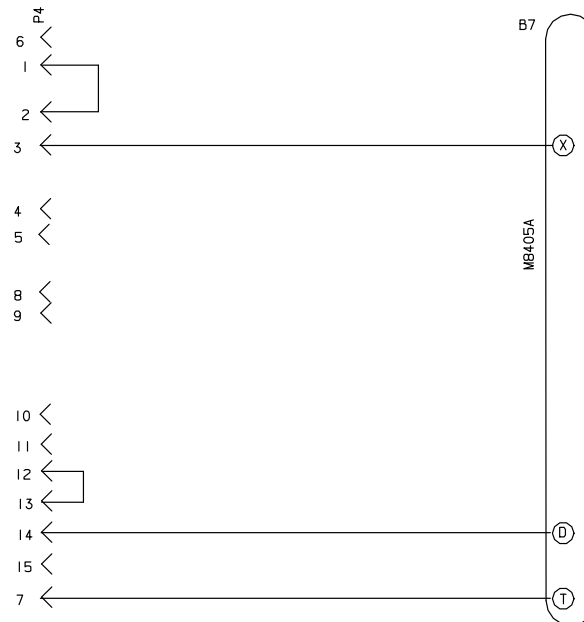
SERIES 11 FIELD WIRING	
WIRING DIAGRAM	11/05
ACCESSORIES	
ECONOMIZER FOR TCA/TGA UNITS A BOX	
ECONOMIZER SECTION DI	
Supersedes Form No.	New Form No. 535.059W

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2. Enthalpy sensor A7 and A62 (if differential enthalpy is used) communicates to the economizer control module A6 when to power the damper motor B7.
3. Economizer control module A6 supplies B7 with 0 - 10 VDC to control the positioning of economizer.
4. The damper actuator provides 2 to 10 VDC position feedback.

“T” OUTDOOR AIR DAMPER



DESCRIPTION	
KEY	COMPONENT
B7	MOTOR-DAMPER, ECONOMIZER
P4	PLUG-ECONOMIZER

DESIGNATES OPTIONAL WIRING CLASS II FIELD WIRING	
WIRING DIAGRAM	2/06
ACCESSORIES	
MOTORIZED OAD FOR TCA/TGA UNITS	
ECONOMIZER SECTION D2	
Supersedes Form No.	New Form No.
	534,489W

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SEQUENCE OF OPERATION

OPERATION:

Occupied Mode

- 24 volt signal from terminal “OC” on TB1 opens B7 dampers to minimum position.

Unoccupied Mode

- Dampers remain closed.