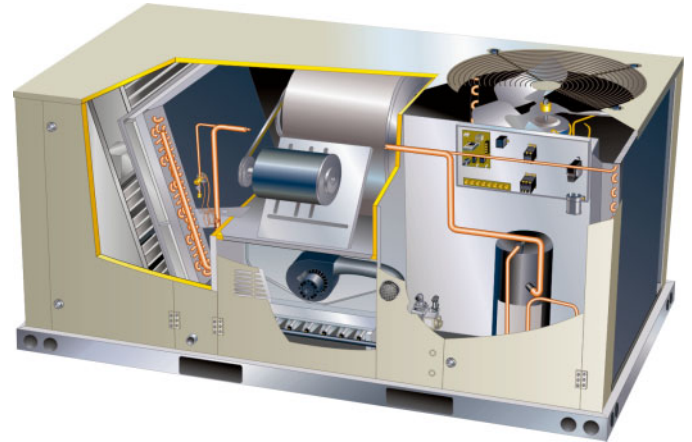


The TGA packaged gas units are available in basic cooling efficiency (036B, 048B and 060B) and standard cooling efficiency (024S, 030S, 036S, 048S, 060S and 072S).

TGA024, 030, 036, 048, 060 and 072 units are available in 65,000 to 150,000 Btuh (19 to 43.9 kW) heating inputs. Gas heat sections are designed with aluminized steel tube heat exchangers. Cooling capacities range from 2 to 6 tons (7 to 21kW).

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.



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.

⚠ 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.

Table of Contents

| | |
|------------------------------------|---------|
| Options | Page 2 |
| Spec. Gas Heat / High Altitude .. | Page 4 |
| Specifications | Page 5 |
| Blower Data | Page 9 |
| Electrical Data | Page 21 |
| I Unit Components | Page 25 |
| II Placement and Installation | Page 33 |
| III Start Up Operation | Page 33 |
| IV Charging | Page 35 |
| V Charging | Page 37 |
| VI Maintenance | Page 39 |
| VII Accessories | Page 41 |
| VIII Diagrams | Page 47 |

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 |
| | Copper - LTACDKC03/07 | 45K67 | x | x | x | x | x |
| Compressor Crankcase Heater | 208/230V/1PH - T1CCHT01AN1P | 95M07 | 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 |
| | 575V/3PH - T1CCHT01AN1J | 95M09 | | | x | x | x |
| Low Ambient Kit | T1SNSR12AN1 | 95M05 | x | x | x | x | x |
| Efficiency | Standard | | ○ | ○ | ○ | ○ | ○ |
| | Basic | | | | ○ | ○ | |
| High Pressure Switch | T1SNSR11AN1 | 95M04 | x | x | x | x | x |
| Refrigerant Type | R-22 | | ○ | ○ | ○ | ○ | ○ |
| HEATING SYSTEM | | | | | | | |
| Bottom Gas Piping Kit | T1GPKT01AN1 | 19W50 | x | x | x | x | x |
| Low Temperature Vestibule Heater | 208/230V - T1CWKT01AN1Y | 19W53 | x | x | x | x | x |
| | 460V - T1CWKT01AN1G | 19W54 | | | x | x | x |
| | 575V - T1CWKT01AN1J | 19W62 | | | x | x | x |
| Combustion Air Intake Extensions | T1EXTN10AN1 | 19W51 | x | x | x | x | x |
| Gas Heat Input | Standard One-Stage - 65 kBtuh input | | ○ | ○ | ○ | ○ | ○ |
| | Medium One-Stage - 105 kBtuh input | | | | ○ | ○ | ○ |
| | High Two-Stage - 105/150 kBtuh input | | | | ○ | ○ | ○ |
| | High One-Stage - 150 kBtuh input | | | | ○ | ○ | ○ |
| LPG/Propane Conversion Kits | For one-stage models - T1PROP10AN1 | 19W48 | x | x | x | x | x |
| | For two-stage models - T1PROP20AN1 | 19W49 | | | x | x | x |
| Stainless Steel Heat Exchanger | | | ○ | ○ | ○ | ○ | ○ |
| Vertical Vent Extension | C1EXTN20FF1 | 31W62 | x | x | x | x | x |
| 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 | |
| Coil Guards | T1GARD20N-1 | 17W88 | | | | | x |
| Corrosion Protection | | | ○ | ○ | ○ | ○ | ○ |
| Hail Guards | T1GARD10A-1 | 17W89 | x | x | x | x | |
| | T1GARD10N-1 | 17W90 | | | | | x |
| Hinged Access Panels | | | ○ | ○ | ○ | ○ | ○ |

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)

x - Field Installed.

¹ 036B models only

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

OPTIONS / ACCESSORIES

| OPTIONS / ACCESSORIES | | | 024 | 030 | 036 | 048 | 060 | 072 |
|--|------------------------------------|--------------|-----|-----|-----|-----|-----|-----|
| Item | Catalog No. | | | | | | | |
| CONTROLS | | | | | | | | |
| Dirty Filter Switch | COSWCH00AE-1 | 30K48 | x | x | x | x | x | x |
| Smoke Detector - Return | T1SNSR41AN1 | 94M18 | x | x | x | x | x | x |
| ELECTRICAL | | | | | | | | |
| Voltage 60 hz | 208/230V - 1 phase | | ○ | ○ | ○ | ○ | ○ | |
| | 208/230V - 3 phase | | | | ○ | ○ | ○ | ○ |
| | 460V - 3 phase | | | | ○ | ○ | ○ | ○ |
| | 575V - 3 phase | | | | ○ | ○ | ○ | ○ |
| Disconnect | See Electric Data Tables for usage | | x | x | x | x | x | x |
| GFI Service Outlets | LTAGFIK10/15 | 74M70 | 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 |
| 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 | T1DAMP21AN1 | 16W92 | x | x | x | x | x | x |
| 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 |
| 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 |

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)

X - Field Installed.

OPTIONS / ACCESSORIES

| Item | Catalog No. | 024 | 030 | 036 | 048 | 060 | 072 |
|---|-------------------------|-------|-----|-----|-----|-----|-----|
| 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 | |
| | FD11-95 | 29G08 | | | | | x |
| | (Canada Only) FD11-95S | 13K56 | | | | | x |
| Transitions (Supply and Return) - Order one | T1TRAN10AN1 | 17W53 | x | x | x | x | |
| | T1TRAN20N-1 | 17W54 | | | | | x |
| ROOF CURBS – down–Flow | | | | | | | |
| Cliplock | | | | | | | |
| 8 in. height | T1CURB23AN1 | 16W93 | x | x | x | x | x |
| 14 in. height | T1CURB20AN1 | 16W94 | x | x | x | x | x |
| 18 in. height | T1CURB21AN1 | 16W95 | x | x | x | x | x |
| 24 in. height | T1CURB22AN1 | 16W96 | x | x | x | x | x |
| Standard | | | | | | | |
| 14 in. height | T1CURB10AN1 | 13W27 | x | x | x | x | x |
| Hinged | | | | | | | |
| 8 in. height | T1CURB30AN1 | 17W46 | x | x | x | x | x |
| 18 in. height | T1CURB32AN1 | 17W47 | x | x | x | x | x |
| 24 in. height | T1CURB33AN1 | 17W48 | 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)

X - Field Installed.

SPECIFICATIONS - GAS HEAT

| Model No. | TGA024, TGA030 | TGA036, TGA048, TGA060, TGA072 | TGA048, TGA060, TGA072 |
|--|--------------------------|--------------------------------|------------------------|
| Heat Input Type | Standard (1 Stage) | Standard (1 Stage) | Medium (1 Stage) |
| Input - Btuh First Stage | 65,000 | 65,000 | 105,000 |
| Second Stage | --- | --- | --- |
| Output - Btuh First Stage | 52,000 | 52,000 | 84,000 |
| Second Stage | --- | --- | --- |
| Temperature Rise Range | 35 - 65°F | 20 - 50°F | 30 - 75°F |
| ¹ AFUE | 80% | 80% | 80% |
| Thermal Efficiency | 80% | 80% | 80% |
| Gas Supply Connections | 1/2 in. NPT | | |
| Rec. Gas Supply Pressure - Natural / LPG | 7 in. w.g. / 11 in. w.g. | | |

¹ Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations.

HIGH ALTITUDE DERATE

NOTE - Units may be installed at altitudes up to 2000 ft. above sea level without any modifications.
At altitudes above 2000 ft. units must be derated to match information in the table shown.
At altitudes above 4500 ft. unit must be derated 2% for each 1000 ft. above sea level.

NOTE - This is the only permissible derate for these units.

| Heat Input Type | Altitude Feet | Manifold Pressure in. w.g. | | Input Rate (Btuh) |
|--------------------|---------------|----------------------------|-------------|-------------------|
| | | Natural Gas | LPG/Propane | |
| Standard (1 stage) | 2001 - 4500 | 3.0 | 8.7 | 60,000 |
| Medium (1 stage) | 2001 - 4500 | 3.0 | 8.7 | 97,000 |
| High (1 stage) | 2001 - 4500 | 3.0 | 8.7 | 138,000 |
| High (2 stage) | 2001 - 4500 | 3.0/1.7 | 8.7/5.5 | 138,000/105,000 |

SPECIFICATIONS - DIRECT DRIVE BLOWER
2 - 2.5 TON

| General Data | | Nominal Tonnage | 2 Ton | 2.5 Ton |
|--|--|------------------------|---|---------------------|
| | | Model No. | TGA024S2D | TGA030S2D |
| | | 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. |
| Gas Heating Options - See Page Page 4 | | | Standard | |
| 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 | | | |
|--|--|---|--|---|--|----------------------------|--|-----------|-----------|
| | | Model No. | | TGA036B2D | TGA036S2D | TGA048B2D | TGA048S2D | TGA060B2D | TGA060S2D |
| | | 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. 4 oz. | 11 lbs. 5 oz. | | |
| Gas Heating Options - See Page Page 4 | | Standard or Medium | | Standard, Medium, or High (1 or 2 stage) | | | | | |
| 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.

SPECIFICATIONS - BELT DRIVE BLOWER
3 - 4 TON

| General Data | Nominal Tonnage Model No. Efficiency Type | 3 Ton | | 4 Ton | |
|---|---|---|--|--|--|
| | | TGA036B2B | TGA036S2B | TGA048B2B | TGA048S2B |
| | | 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. |
| Gas Heating Options - See Page Page 4 | | Standard or Medium | | Standard, Medium, or High (1 or 2 stage) | |
| 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 #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 | 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.

SPECIFICATIONS - BELT DRIVE BLOWER

5 - 6 TON

| General Data | | 5 Ton | | 6 Ton |
|---|---------------------------------------|---|--|--|
| | | TGA060B2B Basic | TGA060S2B Standard | TGA072S2B Standard |
| Cooling Performance | Nominal Tonnage | | | |
| | Model No. | | | |
| | Efficiency Type | | | |
| | 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 |
| Refrigerant | Total Unit Power - kW | 6.7 | 5.4 | 7.1 |
| | SEER (Btuh/Watt) | ¹ 10.0 | ¹ 13.0 | - |
| | EER (Btuh/Watt) | ¹ 8.5 | ¹ 11.0 | ² 10.1 |
| | Type | R-22 | R-22 | R-22 |
| Charge Furnished | | 6 lbs. 4 oz. | 11 lbs. 5 oz. | 11 lbs. 4 oz. |
| Gas Heating Options - See Page Page 4 | | Standard, Medium, or High (1 or 2 stage) | | |
| 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 standard heat, wet indoor coil, & 2 in. disposable air filters in place.

FOR ALL UNITS ADD:

- 1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20.
- 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20.

| 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) | | | | TGA024S and TGA030S | | |
| 0.0 | 1255 | 985 | 860 | 1420 | 1150 | 920 |
| 0.1 | 1240 | 965 | 830 | 1410 | 1120 | 910 |
| 0.2 | 1225 | 940 | 790 | 1400 | 1095 | 890 |
| 0.3 | 1210 | 910 | 745 | 1390 | 1065 | 860 |
| 0.4 | 1185 | 870 | 695 | 1365 | 1030 | 820 |
| 0.5 | 1150 | 825 | --- | 1335 | 985 | 770 |
| 0.6 | 1100 | 775 | --- | 1280 | 935 | 715 |
| 0.7 | 1035 | 715 | --- | 1210 | 865 | --- |
| 0.8 | 940 | --- | --- | 1115 | 780 | --- |
| 0.9 | 815 | --- | --- | 990 | --- | --- |
| 1.0 | --- | --- | --- | 830 | --- | --- |
| 2 and 2.5 Ton Standard Efficiency (Horizontal) | | | | TGA024S and TGA030S | | |
| 0.0 | 1190 | 935 | 815 | 1345 | 1090 | 875 |
| 0.1 | 1175 | 915 | 785 | 1335 | 1065 | 865 |
| 0.2 | 1160 | 890 | 750 | 1330 | 1035 | 845 |
| 0.3 | 1145 | 860 | 705 | 1315 | 1010 | 815 |
| 0.4 | 1125 | 825 | 660 | 1295 | 975 | 775 |
| 0.5 | 1090 | 785 | --- | 1265 | 935 | 730 |
| 0.6 | 1045 | 735 | --- | 1215 | 885 | 675 |
| 0.7 | 980 | 680 | --- | 1150 | 820 | --- |
| 0.8 | 890 | --- | --- | 1055 | 740 | --- |
| 0.9 | 775 | --- | --- | 935 | --- | --- |
| 1.0 | --- | --- | --- | 785 | --- | --- |

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

| 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) | | | | | | TGA036B and TGA048B | | | |
| 0.0 | 2000 | 1660 | 1145 | 2200 | 1875 | 1330 | 2100 | 1780 | 1220 |
| 0.1 | 1935 | 1610 | 1150 | 2110 | 1810 | 1330 | 2045 | 1725 | 1220 |
| 0.2 | 1880 | 1565 | 1135 | 2040 | 1755 | 1310 | 1995 | 1665 | 1210 |
| 0.3 | 1830 | 1515 | 1100 | 1980 | 1700 | 1270 | 1945 | 1615 | 1185 |
| 0.4 | 1780 | 1470 | 1045 | 1925 | 1645 | 1215 | 1890 | 1560 | 1145 |
| 0.5 | 1720 | 1420 | 975 | 1860 | 1590 | 1145 | 1830 | 1510 | 1085 |
| 0.6 | 1645 | 1365 | 885 | 1785 | 1530 | 1060 | 1750 | 1465 | 1015 |
| 0.7 | 1550 | 1305 | 785 | 1680 | 1465 | 960 | 1655 | 1425 | 920 |
| 0.8 | 1425 | 1240 | --- | 1540 | 1395 | --- | 1530 | 1390 | --- |
| 0.9 | 1265 | 1170 | --- | 1360 | 1320 | --- | 1380 | 1380 | --- |
| 1.0 | 1055 | --- | --- | 1120 | --- | --- | 1185 | --- | --- |
| 3 and 4 Ton Basic Efficiency (Horizontal) | | | | | | TGA036B and TGA048B | | | |
| 0.0 | 1895 | 1585 | 1090 | 2085 | 1790 | 1265 | 2100 | 1795 | 1265 |
| 0.1 | 1830 | 1530 | 1095 | 1995 | 1720 | 1260 | 2025 | 1725 | 1250 |
| 0.2 | 1775 | 1480 | 1080 | 1925 | 1660 | 1240 | 1960 | 1660 | 1235 |
| 0.3 | 1730 | 1430 | 1045 | 1870 | 1605 | 1205 | 1905 | 1610 | 1210 |
| 0.4 | 1680 | 1385 | 990 | 1820 | 1555 | 1150 | 1845 | 1560 | 1170 |
| 0.5 | 1620 | 1335 | 920 | 1755 | 1495 | 1085 | 1775 | 1510 | 1110 |
| 0.6 | 1540 | 1275 | 835 | 1670 | 1430 | 995 | 1695 | 1455 | 1025 |
| 0.7 | 1435 | 1205 | 730 | 1555 | 1355 | 890 | 1595 | 1395 | 905 |
| 0.8 | 1290 | 1115 | --- | 1400 | 1255 | --- | 1465 | 1320 | --- |
| 0.9 | 1105 | 1010 | --- | 1185 | 1135 | --- | 1300 | 1230 | --- |
| 1.0 | 860 | --- | --- | 910 | --- | --- | 1090 | --- | --- |
| 3 and 4 Ton Standard Efficiency (Down-Flow) | | | | | | TGA036S and TGA048S | | | |
| 0.0 | 1965 | 1640 | 1150 | 2145 | 1845 | 1330 | 2070 | 1755 | 1220 |
| 0.1 | 1905 | 1595 | 1150 | 2070 | 1785 | 1325 | 2020 | 1700 | 1220 |
| 0.2 | 1855 | 1545 | 1130 | 2010 | 1735 | 1300 | 1970 | 1645 | 1205 |
| 0.3 | 1810 | 1500 | 1095 | 1955 | 1680 | 1260 | 1920 | 1595 | 1180 |
| 0.4 | 1755 | 1455 | 1035 | 1895 | 1625 | 1200 | 1865 | 1545 | 1135 |
| 0.5 | 1690 | 1405 | 965 | 1830 | 1570 | 1130 | 1795 | 1495 | 1075 |
| 0.6 | 1610 | 1350 | 875 | 1745 | 1510 | 1045 | 1715 | 1450 | 1000 |
| 0.7 | 1515 | 1290 | 775 | 1635 | 1445 | 945 | 1615 | 1410 | 910 |
| 0.8 | 1385 | 1220 | --- | 1490 | 1370 | --- | 1490 | 1375 | --- |
| 0.9 | 1225 | 1150 | --- | 1310 | 1290 | --- | 1340 | 1360 | --- |
| 1.0 | 1025 | --- | --- | 1075 | --- | --- | 1150 | --- | --- |
| 3 and 4 Ton Standard Efficiency (Horizontal) | | | | | | TGA036S and TGA048S | | | |
| 0.0 | 1860 | 1565 | 1095 | 2030 | 1755 | 1265 | 2055 | 1765 | 1260 |
| 0.1 | 1805 | 1510 | 1090 | 1960 | 1695 | 1255 | 1990 | 1700 | 1245 |
| 0.2 | 1755 | 1465 | 1075 | 1900 | 1640 | 1235 | 1935 | 1640 | 1230 |
| 0.3 | 1710 | 1420 | 1035 | 1850 | 1585 | 1195 | 1875 | 1590 | 1200 |
| 0.4 | 1660 | 1370 | 985 | 1790 | 1535 | 1140 | 1815 | 1545 | 1160 |
| 0.5 | 1595 | 1320 | 910 | 1720 | 1475 | 1070 | 1745 | 1495 | 1095 |
| 0.6 | 1510 | 1260 | 825 | 1630 | 1410 | 980 | 1660 | 1440 | 1005 |
| 0.7 | 1400 | 1190 | 720 | 1510 | 1330 | 880 | 1555 | 1375 | 885 |
| 0.8 | 1255 | 1100 | --- | 1350 | 1230 | --- | 1425 | 1295 | --- |
| 0.9 | 1065 | 990 | --- | 1140 | 1110 | --- | 1260 | 1200 | --- |
| 1.0 | 830 | --- | --- | 875 | --- | --- | 1055 | --- | --- |

BLOWER DATA - DIRECT DRIVE

5 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

| 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) | | | | | | TGA060B |
| 0.0 | 2260 | 1660 | 2445 | 1960 | 2385 | 1735 |
| 0.1 | 2235 | 1670 | 2420 | 1950 | 2270 | 1725 |
| 0.2 | 2205 | 1680 | 2390 | 1945 | 2185 | 1720 |
| 0.3 | 2180 | 1685 | 2360 | 1930 | 2130 | 1725 |
| 0.4 | 2150 | 1680 | 2325 | 1915 | 2095 | 1725 |
| 0.5 | 2115 | 1665 | 2280 | 1890 | 2070 | 1715 |
| 0.6 | 2070 | 1645 | 2230 | 1855 | 2045 | 1700 |
| 0.7 | 2015 | 1605 | 2165 | 1810 | 2015 | 1665 |
| 0.8 | 1950 | 1545 | 2090 | 1745 | 1965 | 1610 |
| 0.9 | 1865 | 1465 | 2000 | 1660 | 1895 | 1530 |
| 1.0 | 1765 | --- | 1890 | --- | 1790 | --- |
| 5 Ton Basic Efficiency (Horizontal) | | | | | | TGA060B |
| 0.0 | 2145 | 1595 | 2320 | 1880 | 2370 | 1790 |
| 0.1 | 2110 | 1615 | 2285 | 1885 | 2315 | 1815 |
| 0.2 | 2080 | 1625 | 2250 | 1880 | 2270 | 1825 |
| 0.3 | 2040 | 1620 | 2210 | 1860 | 2225 | 1820 |
| 0.4 | 2000 | 1605 | 2160 | 1830 | 2175 | 1800 |
| 0.5 | 1950 | 1580 | 2105 | 1790 | 2125 | 1770 |
| 0.6 | 1895 | 1540 | 2040 | 1740 | 2070 | 1725 |
| 0.7 | 1830 | 1485 | 1965 | 1675 | 2005 | 1665 |
| 0.8 | 1755 | 1420 | 1880 | 1605 | 1930 | 1595 |
| 0.9 | 1665 | 1340 | 1785 | 1520 | 1840 | 1505 |
| 1.0 | 1565 | --- | 1675 | --- | 1735 | --- |
| 5 Ton Standard Efficiency (Down-Flow) | | | | | | TGA060S |
| 0.0 | 2230 | 1670 | 2410 | 1950 | 2240 | 1730 |
| 0.1 | 2205 | 1680 | 2380 | 1945 | 2175 | 1725 |
| 0.2 | 2175 | 1685 | 2350 | 1930 | 2130 | 1725 |
| 0.3 | 2145 | 1685 | 2315 | 1915 | 2095 | 1725 |
| 0.4 | 2110 | 1670 | 2270 | 1890 | 2070 | 1720 |
| 0.5 | 2065 | 1650 | 2215 | 1860 | 2040 | 1705 |
| 0.6 | 2015 | 1615 | 2155 | 1815 | 2010 | 1675 |
| 0.7 | 1950 | 1565 | 2085 | 1755 | 1960 | 1630 |
| 0.8 | 1875 | 1495 | 2000 | 1685 | 1900 | 1560 |
| 0.9 | 1780 | 1410 | 1900 | 1595 | 1810 | 1465 |
| 1.0 | 1675 | --- | 1785 | --- | 1690 | --- |
| 5 Ton Standard Efficiency (Horizontal) | | | | | | TGA060S |
| 0.0 | 2110 | 1615 | 2280 | 1885 | 2305 | 1815 |
| 0.1 | 2075 | 1625 | 2245 | 1880 | 2260 | 1825 |
| 0.2 | 2040 | 1625 | 2205 | 1860 | 2215 | 1820 |
| 0.3 | 2000 | 1610 | 2155 | 1835 | 2170 | 1805 |
| 0.4 | 1950 | 1590 | 2100 | 1800 | 2120 | 1775 |
| 0.5 | 1900 | 1555 | 2040 | 1750 | 2065 | 1735 |
| 0.6 | 1835 | 1505 | 1965 | 1695 | 2005 | 1680 |
| 0.7 | 1765 | 1450 | 1890 | 1625 | 1935 | 1615 |
| 0.8 | 1685 | 1375 | 1800 | 1545 | 1855 | 1535 |
| 0.9 | 1595 | 1295 | 1700 | 1460 | 1755 | 1445 |
| 1.0 | 1495 | --- | 1595 | --- | 1645 | --- |

BLOWER DATA - BELT DRIVE

3 TON

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

FOR ALL UNITS ADD:

- 1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20.
- 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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

| Air Volume (cfm) | | 3 Ton Basic Efficiency (Down-Flow) | | | | | | | | | | | | TGA036B | | | |
|------------------|-----|------------------------------------|-----|------|-----|---------------------------|-----|------|-----|------|------|----------------------------|------|---------|------|------|-----|
| | | 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 | | | | | | High Static – Drive Kit #5 | | | | | |
| 900 | 495 | 0.10 | 600 | 0.15 | 700 | 0.25 | 790 | 0.35 | 870 | 0.45 | 945 | 0.55 | 1015 | 0.65 | 1075 | 0.75 | |
| 1000 | 525 | 0.10 | 625 | 0.20 | 715 | 0.25 | 805 | 0.35 | 880 | 0.45 | 955 | 0.55 | 1025 | 0.70 | 1085 | 0.80 | |
| 1100 | 555 | 0.15 | 650 | 0.20 | 735 | 0.30 | 820 | 0.40 | 895 | 0.50 | 965 | 0.60 | 1035 | 0.70 | 1095 | 0.85 | |
| 1200 | 590 | 0.20 | 675 | 0.25 | 760 | 0.35 | 835 | 0.40 | 910 | 0.50 | 980 | 0.65 | 1045 | 0.75 | 1110 | 0.90 | |
| 1300 | 625 | 0.20 | 705 | 0.30 | 780 | 0.35 | 855 | 0.45 | 930 | 0.55 | 995 | 0.70 | 1060 | 0.80 | 1120 | 0.95 | |
| 1400 | 665 | 0.25 | 735 | 0.35 | 810 | 0.40 | 880 | 0.50 | 945 | 0.60 | 1010 | 0.75 | 1075 | 0.85 | 1135 | 1.00 | |
| 1500 | 700 | 0.30 | 770 | 0.40 | 835 | 0.45 | 905 | 0.55 | 970 | 0.70 | 1030 | 0.80 | 1090 | 0.90 | 1150 | 1.05 | |

| Air Volume (cfm) | | 3 Ton Basic Efficiency (Down-Flow) | | | | | | | | | | | | TGA036B | | | |
|----------------------------|------|------------------------------------|------|------|------|-----------------|------|------|------|------|------|------|------|---------|------|------|-----|
| | | 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 | 1135 | 0.90 | 1195 | 1.05 | 1250 | 1.15 | 1300 | 1.30 | 1350 | 1.45 | 1400 | 1.60 | 1445 | 1.80 | 1490 | 1.95 | |
| 1000 | 1145 | 0.95 | 1205 | 1.10 | 1260 | 1.20 | 1310 | 1.35 | 1360 | 1.50 | 1405 | 1.65 | 1455 | 1.85 | 1500 | 2.00 | |
| 1100 | 1155 | 1.00 | 1215 | 1.10 | 1265 | 1.25 | 1320 | 1.40 | 1370 | 1.55 | 1415 | 1.75 | 1465 | 1.90 | 1510 | 2.05 | |
| 1200 | 1165 | 1.00 | 1225 | 1.15 | 1275 | 1.30 | 1330 | 1.45 | 1380 | 1.65 | 1425 | 1.80 | 1470 | 1.95 | 1515 | 2.10 | |
| 1300 | 1180 | 1.10 | 1235 | 1.20 | 1285 | 1.35 | 1340 | 1.55 | 1390 | 1.70 | 1435 | 1.85 | 1480 | 2.00 | 1525 | 2.20 | |
| 1400 | 1190 | 1.15 | 1245 | 1.25 | 1300 | 1.45 | 1350 | 1.60 | 1400 | 1.75 | 1445 | 1.90 | 1490 | 2.10 | 1535 | 2.25 | |
| 1500 | 1205 | 1.20 | 1260 | 1.35 | 1310 | 1.50 | 1360 | 1.65 | 1410 | 1.80 | 1455 | 2.00 | 1500 | 2.15 | 1545 | 2.35 | |

| Air Volume (cfm) | | 3 Ton Basic Efficiency (Horizontal) | | | | | | | | | | | | TGA036B | | | |
|------------------|-----|-------------------------------------|-----|------|-----|---------------------------|-----|------|-----|------|-----|------|------|---------|------|------|-----|
| | | 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 | 485 | 0.10 | 575 | 0.15 | 660 | 0.20 | 740 | 0.25 | 810 | 0.30 | 875 | 0.40 | 940 | 0.45 | 995 | 0.55 | |
| 1000 | 515 | 0.10 | 600 | 0.15 | 685 | 0.25 | 755 | 0.30 | 825 | 0.35 | 890 | 0.40 | 950 | 0.50 | 1010 | 0.60 | |
| 1100 | 550 | 0.15 | 630 | 0.20 | 705 | 0.25 | 775 | 0.30 | 845 | 0.40 | 905 | 0.45 | 965 | 0.55 | 1020 | 0.60 | |
| 1200 | 585 | 0.20 | 660 | 0.25 | 730 | 0.30 | 800 | 0.35 | 860 | 0.45 | 925 | 0.50 | 980 | 0.60 | 1035 | 0.70 | |
| 1300 | 625 | 0.25 | 690 | 0.30 | 760 | 0.35 | 820 | 0.40 | 885 | 0.50 | 940 | 0.55 | 1000 | 0.65 | 1050 | 0.75 | |
| 1400 | 660 | 0.30 | 725 | 0.35 | 785 | 0.40 | 850 | 0.50 | 905 | 0.55 | 965 | 0.65 | 1015 | 0.70 | 1070 | 0.80 | |
| 1500 | 700 | 0.35 | 760 | 0.40 | 820 | 0.45 | 875 | 0.55 | 930 | 0.60 | 985 | 0.70 | 1035 | 0.80 | 1085 | 0.85 | |

| Air Volume (cfm) | | 3 Ton Basic Efficiency (Horizontal) | | | | | | | | | | | | TGA036B | | | |
|----------------------------|------|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|---------|------|-------|-----|
| | | 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 | 1050 | 0.60 | 1105 | 0.70 | 1150 | 0.80 | 1200 | 0.90 | 1245 | 0.95 | 1290 | 1.05 | 1330 | 1.15 | 1375 | 1.30 | |
| 1000 | 1060 | 0.65 | 1115 | 0.75 | 1160 | 0.85 | 1210 | 0.95 | 1255 | 1.00 | 1300 | 1.15 | 1340 | 1.20 | 1380 | 1.35 | |
| 1100 | 1075 | 0.70 | 1125 | 0.80 | 1175 | 0.90 | 1220 | 1.00 | 1265 | 1.10 | 1310 | 1.20 | 1350 | 1.30 | 1390 | 1.40 | |
| 1200 | 1085 | 0.75 | 1140 | 0.85 | 1185 | 0.95 | 1230 | 1.05 | 1275 | 1.15 | 1320 | 1.25 | 1360 | 1.35 | 1400 | 1.45 | |
| 1300 | 1100 | 0.80 | 1150 | 0.90 | 1200 | 1.00 | 1245 | 1.10 | 1290 | 1.20 | 1330 | 1.30 | 1370 | 1.40 | 1410 | 1.55 | |
| 1400 | 1120 | 0.90 | 1165 | 1.00 | 1215 | 1.10 | 1260 | 1.20 | 1300 | 1.30 | 1345 | 1.40 | 1385 | 1.50 | 1425 | 1.60 | |
| 1500 | 1135 | 0.95 | 1185 | 1.05 | 1230 | 1.15 | 1275 | 1.30 | 1315 | 1.40 | 1355 | 1.50 | 1395 | 1.60 | 1435 | 1.70 | |

BLOWER DATA - BELT DRIVE

3 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20.

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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

0.10 to 1.00 in. w.g.

3 Ton Standard Efficiency (Down-Flow)

TGA036S

| 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 | | | | | | | | | | Kit 5 | |
| 900 | 500 | 0.10 | 605 | 0.15 | 705 | 0.25 | 790 | 0.30 | 870 | 0.40 | 945 | 0.50 | 1010 | 0.60 | 1075 | 0.75 |
| 1000 | 535 | 0.15 | 630 | 0.20 | 720 | 0.25 | 805 | 0.35 | 885 | 0.45 | 955 | 0.55 | 1020 | 0.65 | 1085 | 0.80 |
| 1100 | 570 | 0.15 | 655 | 0.20 | 740 | 0.30 | 820 | 0.40 | 895 | 0.45 | 970 | 0.60 | 1035 | 0.70 | 1095 | 0.80 |
| 1200 | 605 | 0.20 | 685 | 0.25 | 765 | 0.35 | 840 | 0.40 | 915 | 0.50 | 980 | 0.60 | 1045 | 0.75 | 1110 | 0.85 |
| 1300 | 640 | 0.25 | 715 | 0.30 | 790 | 0.35 | 865 | 0.45 | 930 | 0.55 | 1000 | 0.65 | 1060 | 0.80 | 1120 | 0.90 |
| 1400 | 680 | 0.30 | 750 | 0.35 | 820 | 0.45 | 885 | 0.50 | 955 | 0.60 | 1015 | 0.70 | 1080 | 0.85 | 1135 | 0.95 |
| 1500 | 720 | 0.35 | 785 | 0.40 | 850 | 0.50 | 910 | 0.55 | 975 | 0.65 | 1035 | 0.80 | 1095 | 0.90 | 1155 | 1.05 |

0.90 to 1.60 in. w.g.

3 Ton Standard Efficiency (Down-Flow)

TGA036S

| 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 | 1135 | 0.85 | 1190 | 1.00 | 1245 | 1.10 | 1295 | 1.25 | 1345 | 1.40 | 1390 | 1.55 | 1435 | 1.70 | 1480 | 1.85 |
| 1000 | 1145 | 0.90 | 1200 | 1.05 | 1255 | 1.15 | 1305 | 1.30 | 1355 | 1.45 | 1400 | 1.60 | 1445 | 1.75 | 1490 | 1.90 |
| 1100 | 1155 | 0.95 | 1210 | 1.10 | 1265 | 1.20 | 1315 | 1.35 | 1365 | 1.50 | 1410 | 1.65 | 1455 | 1.80 | 1500 | 1.95 |
| 1200 | 1165 | 1.00 | 1225 | 1.15 | 1275 | 1.25 | 1325 | 1.40 | 1375 | 1.55 | 1425 | 1.75 | 1470 | 1.90 | 1510 | 2.05 |
| 1300 | 1180 | 1.05 | 1235 | 1.20 | 1285 | 1.30 | 1340 | 1.50 | 1385 | 1.65 | 1435 | 1.80 | 1480 | 1.95 | 1525 | 2.15 |
| 1400 | 1195 | 1.10 | 1245 | 1.25 | 1300 | 1.40 | 1350 | 1.55 | 1400 | 1.70 | 1445 | 1.85 | 1490 | 2.05 | 1535 | 2.20 |
| 1500 | 1210 | 1.15 | 1260 | 1.30 | 1315 | 1.45 | 1360 | 1.60 | 1410 | 1.75 | 1455 | 1.95 | 1500 | 2.10 | 1545 | 2.30 |

0.10 to 0.80 in. w.g.

3 Ton Standard Efficiency (Horizontal)

TGA036S

| 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 | 490 | 0.10 | 580 | 0.15 | 665 | 0.20 | 745 | 0.25 | 815 | 0.30 | 880 | 0.40 | 940 | 0.45 | 1000 | 0.55 |
| 1000 | 525 | 0.10 | 610 | 0.15 | 690 | 0.25 | 760 | 0.30 | 830 | 0.35 | 895 | 0.45 | 955 | 0.50 | 1010 | 0.60 |
| 1100 | 560 | 0.15 | 640 | 0.20 | 710 | 0.25 | 780 | 0.30 | 850 | 0.40 | 910 | 0.45 | 970 | 0.55 | 1025 | 0.65 |
| 1200 | 600 | 0.20 | 670 | 0.25 | 740 | 0.30 | 805 | 0.35 | 870 | 0.45 | 930 | 0.50 | 985 | 0.60 | 1040 | 0.70 |
| 1300 | 635 | 0.25 | 705 | 0.30 | 770 | 0.35 | 830 | 0.40 | 890 | 0.50 | 950 | 0.55 | 1005 | 0.65 | 1055 | 0.75 |
| 1400 | 675 | 0.30 | 740 | 0.35 | 800 | 0.40 | 860 | 0.50 | 915 | 0.55 | 970 | 0.65 | 1025 | 0.70 | 1075 | 0.80 |
| 1500 | 715 | 0.35 | 775 | 0.40 | 830 | 0.45 | 885 | 0.55 | 940 | 0.60 | 995 | 0.70 | 1045 | 0.80 | 1095 | 0.90 |

0.90 to 1.60 in. w.g.

3 Ton Standard Efficiency (Horizontal)

TGA036S

| 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 | 0.60 | 1105 | 0.70 | 1155 | 0.80 | 1205 | 0.90 | 1250 | 0.95 | 1295 | 1.05 | 1335 | 1.15 | 1375 | 1.25 |
| 1000 | 1065 | 0.65 | 1115 | 0.75 | 1165 | 0.85 | 1215 | 0.95 | 1260 | 1.05 | 1305 | 1.15 | 1345 | 1.20 | 1385 | 1.30 |
| 1100 | 1080 | 0.70 | 1130 | 0.80 | 1175 | 0.90 | 1225 | 1.00 | 1270 | 1.10 | 1315 | 1.20 | 1355 | 1.30 | 1395 | 1.40 |
| 1200 | 1090 | 0.75 | 1140 | 0.85 | 1190 | 0.95 | 1235 | 1.05 | 1280 | 1.15 | 1325 | 1.25 | 1365 | 1.35 | 1405 | 1.45 |
| 1300 | 1105 | 0.80 | 1155 | 0.90 | 1205 | 1.00 | 1250 | 1.10 | 1295 | 1.25 | 1335 | 1.35 | 1375 | 1.45 | 1415 | 1.55 |
| 1400 | 1125 | 0.90 | 1170 | 1.00 | 1220 | 1.10 | 1265 | 1.20 | 1305 | 1.30 | 1350 | 1.40 | 1390 | 1.50 | 1430 | 1.65 |
| 1500 | 1145 | 1.00 | 1190 | 1.05 | 1235 | 1.15 | 1280 | 1.30 | 1320 | 1.40 | 1365 | 1.50 | 1405 | 1.60 | 1440 | 1.70 |

BLOWER DATA - BELT DRIVE

4 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20.

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20.

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)

TGA048B

| 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 | 670 | 0.25 | 750 | 0.30 | 825 | 0.35 | 895 | 0.45 | 965 | 0.55 | 1025 | 0.65 | 1085 | 0.75 |
| 1300 | 625 | 0.20 | 700 | 0.25 | 775 | 0.35 | 845 | 0.40 | 915 | 0.50 | 980 | 0.60 | 1040 | 0.70 | 1100 | 0.80 |
| 1400 | 660 | 0.25 | 730 | 0.30 | 800 | 0.40 | 870 | 0.45 | 935 | 0.55 | 995 | 0.65 | 1055 | 0.75 | 1115 | 0.85 |
| 1500 | 695 | 0.30 | 765 | 0.35 | 830 | 0.45 | 895 | 0.50 | 955 | 0.60 | 1015 | 0.70 | 1075 | 0.80 | 1130 | 0.90 |
| 1600 | 735 | 0.35 | 795 | 0.40 | 860 | 0.50 | 920 | 0.60 | 980 | 0.65 | 1040 | 0.75 | 1095 | 0.90 | 1150 | 1.00 |
| 1700 | 775 | 0.40 | 830 | 0.50 | 890 | 0.55 | 950 | 0.65 | 1005 | 0.75 | 1060 | 0.85 | 1115 | 0.95 | 1165 | 1.05 |
| 1800 | 815 | 0.50 | 870 | 0.55 | 925 | 0.65 | 980 | 0.75 | 1030 | 0.80 | 1085 | 0.90 | 1135 | 1.00 | 1190 | 1.15 |
| 1900 | 850 | 0.55 | 905 | 0.65 | 955 | 0.70 | 1010 | 0.80 | 1060 | 0.90 | 1110 | 1.00 | 1160 | 1.10 | 1210 | 1.25 |
| 2000 | 890 | 0.65 | 940 | 0.70 | 990 | 0.80 | 1040 | 0.90 | 1090 | 1.00 | 1140 | 1.10 | 1185 | 1.20 | 1235 | 1.35 |

0.90 to 1.60 in. w.g.

4 Ton Basic Efficiency (Down-Flow)

TGA048B

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|----------------------------|------|------|------|------|------|------|------|------|------|-----------------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 Furnished | | | | | |
| 1200 | 1140 | 0.85 | 1195 | 1.00 | 1250 | 1.10 | 1300 | 1.25 | 1345 | 1.35 | 1390 | 1.50 | 1435 | 1.65 | 1480 | 1.80 |
| 1300 | 1155 | 0.90 | 1210 | 1.05 | 1260 | 1.15 | 1310 | 1.30 | 1355 | 1.40 | 1400 | 1.55 | 1445 | 1.70 | 1490 | 1.85 |
| 1400 | 1170 | 1.00 | 1220 | 1.10 | 1270 | 1.20 | 1320 | 1.35 | 1370 | 1.50 | 1415 | 1.65 | 1460 | 1.75 | 1500 | 1.90 |
| 1500 | 1185 | 1.05 | 1235 | 1.15 | 1285 | 1.30 | 1335 | 1.40 | 1380 | 1.55 | 1425 | 1.70 | 1470 | 1.85 | 1510 | 2.00 |
| 1600 | 1200 | 1.10 | 1250 | 1.25 | 1300 | 1.35 | 1345 | 1.50 | 1395 | 1.65 | 1440 | 1.80 | 1480 | 1.90 | 1525 | 2.05 |
| 1700 | 1220 | 1.20 | 1270 | 1.30 | 1315 | 1.45 | 1360 | 1.55 | 1405 | 1.70 | 1450 | 1.85 | 1495 | 2.00 | 1535 | 2.15 |
| 1800 | 1235 | 1.25 | 1285 | 1.40 | 1335 | 1.55 | 1380 | 1.65 | 1420 | 1.80 | 1465 | 1.95 | 1510 | 2.10 | 1550 | 2.25 |
| 1900 | 1260 | 1.35 | 1305 | 1.50 | 1350 | 1.60 | 1395 | 1.75 | 1440 | 1.90 | 1480 | 2.05 | 1525 | 2.20 | 1565 | 2.35 |
| 2000 | 1280 | 1.45 | 1325 | 1.60 | 1370 | 1.70 | 1415 | 1.85 | 1455 | 2.00 | 1500 | 2.15 | 1540 | 2.30 | 1580 | 2.45 |

0.10 to 0.80 in. w.g.

4 Ton Basic Efficiency (Horizontal)

TGA048B

| 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 | 0.20 | 655 | 0.20 | 725 | 0.30 | 790 | 0.35 | 855 | 0.40 | 915 | 0.45 | 975 | 0.55 | 1030 | 0.60 |
| 1300 | 620 | 0.20 | 685 | 0.25 | 750 | 0.30 | 815 | 0.40 | 875 | 0.45 | 935 | 0.50 | 990 | 0.60 | 1045 | 0.65 |
| 1400 | 655 | 0.25 | 720 | 0.30 | 780 | 0.35 | 840 | 0.45 | 895 | 0.50 | 955 | 0.55 | 1010 | 0.65 | 1060 | 0.70 |
| 1500 | 695 | 0.30 | 750 | 0.35 | 810 | 0.45 | 865 | 0.50 | 920 | 0.55 | 975 | 0.65 | 1025 | 0.70 | 1080 | 0.80 |
| 1600 | 735 | 0.35 | 790 | 0.45 | 840 | 0.50 | 895 | 0.55 | 945 | 0.65 | 1000 | 0.70 | 1050 | 0.80 | 1100 | 0.85 |
| 1700 | 775 | 0.45 | 825 | 0.50 | 875 | 0.55 | 925 | 0.65 | 975 | 0.70 | 1025 | 0.80 | 1070 | 0.85 | 1120 | 0.95 |
| 1800 | 815 | 0.50 | 860 | 0.60 | 910 | 0.65 | 955 | 0.70 | 1005 | 0.80 | 1050 | 0.85 | 1095 | 0.95 | 1140 | 1.05 |
| 1900 | 855 | 0.60 | 900 | 0.65 | 945 | 0.75 | 990 | 0.80 | 1035 | 0.90 | 1080 | 0.95 | 1125 | 1.05 | 1165 | 1.15 |
| 2000 | 895 | 0.70 | 935 | 0.75 | 980 | 0.85 | 1020 | 0.90 | 1065 | 1.00 | 1110 | 1.05 | 1150 | 1.15 | 1190 | 1.25 |

0.90 to 1.60 in. w.g.

4 Ton Basic Efficiency (Horizontal)

TGA048B

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 |
| | Kit 2 | | High Static – Drive Kit #6 | | | | | | | | | | | | | |
| 1200 | 1085 | 0.70 | 1135 | 0.75 | 1185 | 0.85 | 1230 | 0.95 | 1275 | 1.05 | 1320 | 1.15 | 1360 | 1.25 | 1405 | 1.35 |
| 1300 | 1095 | 0.75 | 1145 | 0.80 | 1195 | 0.90 | 1240 | 1.00 | 1285 | 1.10 | 1330 | 1.20 | 1370 | 1.30 | 1410 | 1.40 |
| 1400 | 1110 | 0.80 | 1160 | 0.90 | 1205 | 0.95 | 1255 | 1.05 | 1295 | 1.15 | 1340 | 1.25 | 1380 | 1.35 | 1420 | 1.45 |
| 1500 | 1125 | 0.85 | 1175 | 0.95 | 1220 | 1.05 | 1265 | 1.15 | 1310 | 1.25 | 1350 | 1.35 | 1395 | 1.45 | 1435 | 1.55 |
| 1600 | 1145 | 0.95 | 1190 | 1.05 | 1235 | 1.15 | 1280 | 1.20 | 1325 | 1.35 | 1365 | 1.40 | 1405 | 1.55 | 1445 | 1.65 |
| 1700 | 1165 | 1.05 | 1210 | 1.10 | 1255 | 1.20 | 1295 | 1.30 | 1340 | 1.40 | 1380 | 1.50 | 1420 | 1.60 | 1455 | 1.70 |
| 1800 | 1185 | 1.10 | 1230 | 1.20 | 1270 | 1.30 | 1315 | 1.40 | 1355 | 1.50 | 1395 | 1.60 | 1435 | 1.75 | 1470 | 1.85 |
| 1900 | 1210 | 1.25 | 1250 | 1.30 | 1290 | 1.40 | 1335 | 1.50 | 1370 | 1.60 | 1410 | 1.70 | 1450 | 1.85 | 1485 | 1.95 |
| 2000 | 1235 | 1.35 | 1275 | 1.45 | 1315 | 1.55 | 1355 | 1.65 | 1390 | 1.75 | 1430 | 1.85 | 1465 | 1.95 | 1505 | 2.05 |

BLOWER DATA - BELT DRIVE

4 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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) TGA048S

| 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 | 600 | 0.20 | 680 | 0.25 | 755 | 0.30 | 830 | 0.35 | 900 | 0.45 | 965 | 0.55 | 1025 | 0.65 | 1085 | 0.75 |
| 1300 | 640 | 0.20 | 710 | 0.25 | 780 | 0.35 | 850 | 0.40 | 915 | 0.50 | 980 | 0.60 | 1040 | 0.70 | 1100 | 0.80 |
| 1400 | 675 | 0.25 | 745 | 0.30 | 810 | 0.40 | 875 | 0.45 | 940 | 0.55 | 1000 | 0.65 | 1060 | 0.75 | 1115 | 0.85 |
| 1500 | 715 | 0.30 | 780 | 0.35 | 840 | 0.45 | 900 | 0.50 | 960 | 0.60 | 1020 | 0.70 | 1080 | 0.80 | 1135 | 0.90 |
| 1600 | 755 | 0.35 | 815 | 0.45 | 870 | 0.50 | 930 | 0.60 | 985 | 0.65 | 1045 | 0.75 | 1100 | 0.85 | 1150 | 0.95 |
| 1700 | 795 | 0.45 | 850 | 0.50 | 905 | 0.55 | 960 | 0.65 | 1015 | 0.75 | 1070 | 0.85 | 1120 | 0.95 | 1170 | 1.05 |
| 1800 | 835 | 0.50 | 885 | 0.60 | 940 | 0.65 | 990 | 0.75 | 1045 | 0.80 | 1095 | 0.90 | 1145 | 1.00 | 1195 | 1.15 |
| 1900 | 880 | 0.60 | 925 | 0.65 | 975 | 0.75 | 1025 | 0.80 | 1075 | 0.90 | 1120 | 1.00 | 1170 | 1.10 | 1220 | 1.20 |
| 2000 | 920 | 0.70 | 965 | 0.75 | 1010 | 0.85 | 1055 | 0.90 | 1105 | 1.00 | 1150 | 1.10 | 1195 | 1.20 | 1245 | 1.35 |

0.90 to 1.60 in. w.g. 4 Ton Standard Efficiency (Down-Flow) TGA048S

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 | 1140 | 0.85 | 1195 | 0.95 | 1245 | 1.05 | 1295 | 1.20 | 1340 | 1.30 | 1385 | 1.40 | 1430 | 1.55 | 1470 | 1.65 |
| 1300 | 1155 | 0.90 | 1205 | 1.00 | 1260 | 1.10 | 1305 | 1.25 | 1350 | 1.35 | 1395 | 1.50 | 1440 | 1.60 | 1480 | 1.75 |
| 1400 | 1170 | 0.95 | 1220 | 1.05 | 1270 | 1.15 | 1320 | 1.30 | 1365 | 1.40 | 1410 | 1.55 | 1455 | 1.70 | 1495 | 1.80 |
| 1500 | 1185 | 1.00 | 1235 | 1.10 | 1285 | 1.25 | 1335 | 1.35 | 1380 | 1.50 | 1425 | 1.65 | 1465 | 1.75 | 1510 | 1.90 |
| 1600 | 1205 | 1.10 | 1255 | 1.20 | 1300 | 1.30 | 1350 | 1.45 | 1395 | 1.60 | 1435 | 1.70 | 1480 | 1.85 | 1520 | 2.00 |
| 1700 | 1220 | 1.15 | 1270 | 1.25 | 1320 | 1.40 | 1365 | 1.55 | 1410 | 1.65 | 1450 | 1.80 | 1495 | 1.95 | 1535 | 2.05 |
| 1800 | 1245 | 1.25 | 1290 | 1.35 | 1335 | 1.50 | 1380 | 1.60 | 1425 | 1.75 | 1465 | 1.90 | 1510 | 2.05 | 1550 | 2.15 |
| 1900 | 1265 | 1.35 | 1310 | 1.45 | 1355 | 1.60 | 1400 | 1.70 | 1440 | 1.85 | 1485 | 2.00 | 1525 | 2.15 | 1565 | 2.30 |
| 2000 | 1290 | 1.45 | 1330 | 1.55 | 1375 | 1.70 | 1420 | 1.80 | 1460 | 1.95 | 1500 | 2.10 | 1540 | 2.25 | 1580 | 2.40 |

0.10 to 0.80 in. w.g. 4 Ton Standard Efficiency (Horizontal) TGA048S

| 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 | 0.20 | 665 | 0.25 | 735 | 0.30 | 805 | 0.35 | 870 | 0.40 | 930 | 0.50 | 990 | 0.55 | 1050 | 0.65 |
| 1300 | 630 | 0.20 | 695 | 0.25 | 760 | 0.35 | 825 | 0.40 | 890 | 0.45 | 950 | 0.55 | 1010 | 0.65 | 1065 | 0.70 |
| 1400 | 670 | 0.25 | 730 | 0.30 | 790 | 0.40 | 850 | 0.45 | 910 | 0.50 | 970 | 0.60 | 1025 | 0.70 | 1080 | 0.75 |
| 1500 | 710 | 0.35 | 765 | 0.40 | 820 | 0.45 | 880 | 0.50 | 935 | 0.60 | 990 | 0.65 | 1045 | 0.75 | 1095 | 0.85 |
| 1600 | 750 | 0.40 | 800 | 0.45 | 855 | 0.50 | 910 | 0.60 | 960 | 0.65 | 1015 | 0.75 | 1065 | 0.80 | 1115 | 0.90 |
| 1700 | 790 | 0.45 | 840 | 0.50 | 890 | 0.60 | 940 | 0.65 | 990 | 0.75 | 1040 | 0.80 | 1090 | 0.90 | 1135 | 1.00 |
| 1800 | 830 | 0.55 | 875 | 0.60 | 925 | 0.65 | 970 | 0.75 | 1020 | 0.80 | 1065 | 0.90 | 1115 | 1.00 | 1160 | 1.10 |
| 1900 | 870 | 0.65 | 915 | 0.70 | 960 | 0.75 | 1005 | 0.85 | 1050 | 0.90 | 1095 | 1.00 | 1140 | 1.10 | 1185 | 1.20 |
| 2000 | 915 | 0.75 | 955 | 0.80 | 995 | 0.85 | 1040 | 0.95 | 1080 | 1.00 | 1125 | 1.10 | 1165 | 1.20 | 1210 | 1.30 |

0.90 to 1.60 in. w.g. 4 Ton Standard Efficiency (Horizontal) TGA048S

| 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 |
| | Kit #2 | | | | | | | | | | | | | | | |
| | High Static - Drive Kit #6 | | | | | | | | | | | | | | | |
| 1200 | 1105 | 0.75 | 1155 | 0.85 | 1205 | 0.95 | 1255 | 1.05 | 1300 | 1.15 | 1340 | 1.25 | 1385 | 1.35 | 1425 | 1.45 |
| 1300 | 1115 | 0.80 | 1165 | 0.90 | 1215 | 1.00 | 1265 | 1.10 | 1310 | 1.20 | 1355 | 1.30 | 1395 | 1.40 | 1435 | 1.55 |
| 1400 | 1130 | 0.85 | 1180 | 0.95 | 1230 | 1.05 | 1275 | 1.15 | 1320 | 1.25 | 1365 | 1.40 | 1405 | 1.50 | 1450 | 1.60 |
| 1500 | 1145 | 0.90 | 1195 | 1.00 | 1245 | 1.15 | 1290 | 1.25 | 1335 | 1.35 | 1375 | 1.45 | 1420 | 1.55 | 1460 | 1.70 |
| 1600 | 1165 | 1.00 | 1210 | 1.10 | 1260 | 1.20 | 1305 | 1.30 | 1345 | 1.40 | 1390 | 1.55 | 1430 | 1.65 | 1470 | 1.75 |
| 1700 | 1185 | 1.10 | 1230 | 1.20 | 1275 | 1.30 | 1320 | 1.40 | 1360 | 1.50 | 1405 | 1.60 | 1445 | 1.75 | 1485 | 1.85 |
| 1800 | 1205 | 1.15 | 1250 | 1.25 | 1295 | 1.40 | 1335 | 1.50 | 1380 | 1.60 | 1420 | 1.70 | 1460 | 1.85 | 1500 | 1.95 |
| 1900 | 1225 | 1.25 | 1270 | 1.35 | 1315 | 1.50 | 1355 | 1.60 | 1395 | 1.70 | 1435 | 1.80 | 1475 | 1.95 | 1515 | 2.10 |
| 2000 | 1250 | 1.40 | 1295 | 1.50 | 1335 | 1.60 | 1375 | 1.70 | 1415 | 1.80 | 1455 | 1.95 | 1490 | 2.05 | 1530 | 2.20 |

BLOWER DATA - BELT DRIVE

5 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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) TGA060B

| 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 | 730 | 0.35 | 785 | 0.40 | 840 | 0.45 | 895 | 0.50 | 945 | 0.55 | 1000 | 0.60 | 1045 | 0.70 | 1095 | 0.75 |
| 1700 | 770 | 0.40 | 825 | 0.45 | 875 | 0.50 | 925 | 0.55 | 975 | 0.60 | 1025 | 0.70 | 1070 | 0.75 | 1115 | 0.85 |
| 1800 | 810 | 0.45 | 860 | 0.50 | 910 | 0.55 | 955 | 0.65 | 1005 | 0.70 | 1050 | 0.75 | 1095 | 0.85 | 1140 | 0.90 |
| 1900 | 850 | 0.55 | 895 | 0.60 | 945 | 0.65 | 990 | 0.70 | 1035 | 0.80 | 1080 | 0.85 | 1125 | 0.95 | 1165 | 1.00 |
| 2000 | 890 | 0.60 | 935 | 0.70 | 980 | 0.75 | 1025 | 0.80 | 1065 | 0.85 | 1110 | 0.95 | 1150 | 1.00 | 1190 | 1.10 |
| 2100 | 930 | 0.70 | 970 | 0.75 | 1015 | 0.85 | 1055 | 0.90 | 1100 | 1.00 | 1140 | 1.05 | 1180 | 1.10 | 1220 | 1.20 |
| 2200 | 970 | 0.80 | 1010 | 0.85 | 1050 | 0.95 | 1090 | 1.00 | 1130 | 1.10 | 1170 | 1.15 | 1210 | 1.25 | 1250 | 1.30 |
| 2300 | 1010 | 0.90 | 1050 | 1.00 | 1090 | 1.05 | 1125 | 1.10 | 1165 | 1.20 | 1205 | 1.30 | 1240 | 1.35 | 1280 | 1.45 |
| 2400 | 1050 | 1.05 | 1090 | 1.10 | 1125 | 1.15 | 1165 | 1.25 | 1200 | 1.35 | 1235 | 1.40 | 1270 | 1.50 | 1310 | 1.60 |

0.90 to 1.60 in. w.g. 5 Ton Basic Efficiency (Down-Flow) TGA060B

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 | 1140 | 0.85 | 1185 | 0.90 | 1225 | 0.95 | 1265 | 1.05 | 1310 | 1.15 | 1345 | 1.20 | 1385 | 1.30 | 1420 | 1.40 |
| 1700 | 1160 | 0.90 | 1205 | 1.00 | 1245 | 1.05 | 1285 | 1.15 | 1325 | 1.20 | 1365 | 1.30 | 1400 | 1.40 | 1440 | 1.50 |
| 1800 | 1185 | 1.00 | 1225 | 1.05 | 1265 | 1.15 | 1305 | 1.20 | 1345 | 1.30 | 1380 | 1.40 | 1420 | 1.50 | 1455 | 1.55 |
| 1900 | 1205 | 1.05 | 1250 | 1.15 | 1285 | 1.25 | 1325 | 1.30 | 1365 | 1.40 | 1400 | 1.50 | 1435 | 1.60 | 1475 | 1.70 |
| 2000 | 1230 | 1.15 | 1270 | 1.25 | 1310 | 1.35 | 1350 | 1.45 | 1385 | 1.50 | 1420 | 1.60 | 1455 | 1.70 | 1490 | 1.80 |
| 2100 | 1260 | 1.30 | 1295 | 1.35 | 1335 | 1.45 | 1370 | 1.55 | 1405 | 1.60 | 1445 | 1.75 | 1475 | 1.80 | 1510 | 1.90 |
| 2200 | 1285 | 1.40 | 1325 | 1.50 | 1360 | 1.60 | 1395 | 1.65 | 1430 | 1.75 | 1465 | 1.85 | 1500 | 1.95 | 1530 | 2.05 |
| 2300 | 1315 | 1.55 | 1350 | 1.60 | 1385 | 1.70 | 1420 | 1.80 | 1455 | 1.90 | 1490 | 2.00 | 1520 | 2.10 | 1555 | 2.20 |
| 2400 | 1345 | 1.65 | 1380 | 1.75 | 1415 | 1.85 | 1445 | 1.95 | 1480 | 2.05 | 1515 | 2.15 | 1545 | 2.25 | 1575 | 2.30 |

0.10 to 0.80 in. w.g. 5 Ton Basic Efficiency (Horizontal) TGA060B

| 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 | 720 | 0.35 | 780 | 0.40 | 835 | 0.45 | 895 | 0.55 | 955 | 0.65 | 1010 | 0.70 | 1065 | 0.80 | 1120 | 0.90 |
| 1700 | 760 | 0.40 | 815 | 0.50 | 870 | 0.55 | 925 | 0.60 | 975 | 0.70 | 1030 | 0.80 | 1085 | 0.90 | 1140 | 1.00 |
| 1800 | 800 | 0.50 | 850 | 0.55 | 900 | 0.60 | 950 | 0.70 | 1005 | 0.80 | 1055 | 0.85 | 1105 | 0.95 | 1155 | 1.05 |
| 1900 | 840 | 0.55 | 885 | 0.65 | 935 | 0.70 | 980 | 0.75 | 1030 | 0.85 | 1080 | 0.95 | 1130 | 1.05 | 1180 | 1.15 |
| 2000 | 880 | 0.65 | 920 | 0.70 | 970 | 0.80 | 1015 | 0.85 | 1060 | 0.95 | 1105 | 1.05 | 1155 | 1.15 | 1200 | 1.25 |
| 2100 | 920 | 0.75 | 960 | 0.80 | 1000 | 0.90 | 1045 | 0.95 | 1090 | 1.05 | 1135 | 1.15 | 1180 | 1.25 | 1225 | 1.35 |
| 2200 | 955 | 0.85 | 995 | 0.90 | 1040 | 1.00 | 1080 | 1.10 | 1120 | 1.15 | 1165 | 1.25 | 1205 | 1.35 | 1250 | 1.45 |
| 2300 | 995 | 0.95 | 1035 | 1.05 | 1075 | 1.10 | 1115 | 1.20 | 1155 | 1.30 | 1195 | 1.40 | 1235 | 1.50 | 1275 | 1.60 |
| 2400 | 1040 | 1.10 | 1075 | 1.15 | 1110 | 1.25 | 1150 | 1.35 | 1185 | 1.40 | 1225 | 1.50 | 1265 | 1.65 | 1305 | 1.75 |

0.90 to 1.60 in. w.g. 5 Ton Basic Efficiency (Horizontal) TGA060B

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 | 1175 | 1.05 | 1225 | 1.15 | 1275 | 1.25 | 1325 | 1.40 | 1370 | 1.55 | 1415 | 1.65 | 1460 | 1.80 | 1500 | 1.95 |
| 1700 | 1190 | 1.10 | 1240 | 1.20 | 1290 | 1.35 | 1335 | 1.45 | 1380 | 1.60 | 1425 | 1.75 | 1470 | 1.90 | 1510 | 2.00 |
| 1800 | 1205 | 1.20 | 1255 | 1.30 | 1300 | 1.40 | 1350 | 1.55 | 1395 | 1.70 | 1435 | 1.80 | 1480 | 1.95 | 1520 | 2.10 |
| 1900 | 1225 | 1.25 | 1270 | 1.40 | 1320 | 1.50 | 1365 | 1.65 | 1405 | 1.75 | 1450 | 1.90 | 1495 | 2.05 | 1535 | 2.20 |
| 2000 | 1245 | 1.35 | 1290 | 1.50 | 1335 | 1.60 | 1380 | 1.75 | 1420 | 1.85 | 1465 | 2.00 | 1505 | 2.15 | 1545 | 2.30 |
| 2100 | 1270 | 1.50 | 1310 | 1.60 | 1355 | 1.70 | 1395 | 1.85 | 1440 | 2.00 | 1480 | 2.10 | 1520 | 2.25 | 1560 | 2.40 |
| 2200 | 1290 | 1.60 | 1335 | 1.70 | 1375 | 1.85 | 1415 | 1.95 | 1455 | 2.10 | 1495 | 2.25 | 1535 | 2.40 | 1575 | 2.55 |
| 2300 | 1315 | 1.70 | 1355 | 1.85 | 1395 | 1.95 | 1435 | 2.10 | 1475 | 2.20 | 1515 | 2.35 | 1555 | 2.50 | 1590 | 2.65 |
| 2400 | 1340 | 1.85 | 1380 | 1.95 | 1420 | 2.10 | 1460 | 2.25 | 1495 | 2.35 | 1535 | 2.50 | 1570 | 2.65 | 1610 | 2.80 |

BLOWER DATA - BELT DRIVE

5 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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)

TGA060S

| 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 | 765 | 0.35 | 820 | 0.40 | 870 | 0.45 | 925 | 0.55 | 975 | 0.60 | 1025 | 0.65 | 1075 | 0.70 | 1120 | 0.80 |
| 1700 | 805 | 0.45 | 855 | 0.50 | 905 | 0.55 | 955 | 0.60 | 1005 | 0.65 | 1055 | 0.75 | 1100 | 0.80 | 1145 | 0.85 |
| 1800 | 850 | 0.50 | 895 | 0.55 | 945 | 0.60 | 990 | 0.70 | 1035 | 0.75 | 1080 | 0.80 | 1125 | 0.90 | 1170 | 0.95 |
| 1900 | 890 | 0.60 | 935 | 0.65 | 980 | 0.70 | 1025 | 0.75 | 1070 | 0.85 | 1115 | 0.90 | 1155 | 1.00 | 1200 | 1.05 |
| 2000 | 935 | 0.70 | 975 | 0.75 | 1020 | 0.80 | 1060 | 0.85 | 1100 | 0.95 | 1145 | 1.00 | 1185 | 1.10 | 1225 | 1.15 |
| 2100 | 975 | 0.80 | 1015 | 0.85 | 1055 | 0.90 | 1095 | 0.95 | 1135 | 1.05 | 1175 | 1.10 | 1215 | 1.20 | 1255 | 1.25 |
| 2200 | 1020 | 0.90 | 1055 | 0.95 | 1095 | 1.00 | 1135 | 1.10 | 1170 | 1.15 | 1210 | 1.25 | 1250 | 1.30 | 1285 | 1.40 |
| 2300 | 1060 | 1.00 | 1095 | 1.10 | 1135 | 1.15 | 1170 | 1.20 | 1210 | 1.30 | 1245 | 1.35 | 1280 | 1.45 | 1320 | 1.55 |
| 2400 | 1105 | 1.15 | 1140 | 1.20 | 1175 | 1.30 | 1210 | 1.35 | 1245 | 1.45 | 1280 | 1.50 | 1315 | 1.60 | 1350 | 1.70 |

0.90 to 1.60 in. w.g.

5 Ton Standard Efficiency (Down-Flow)

TGA060S

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 #3 | | | | High Static - Drive Kit #7 | | | | | | | | | | | |
| 1600 | 1165 | 0.85 | 1210 | 0.95 | 1255 | 1.05 | 1295 | 1.10 | 1335 | 1.20 | 1375 | 1.30 | 1415 | 1.35 | 1450 | 1.45 |
| 1700 | 1190 | 0.95 | 1235 | 1.05 | 1275 | 1.10 | 1315 | 1.20 | 1355 | 1.30 | 1395 | 1.35 | 1430 | 1.45 | 1470 | 1.55 |
| 1800 | 1215 | 1.05 | 1255 | 1.10 | 1295 | 1.20 | 1335 | 1.30 | 1375 | 1.40 | 1415 | 1.45 | 1450 | 1.55 | 1485 | 1.65 |
| 1900 | 1240 | 1.15 | 1280 | 1.20 | 1320 | 1.30 | 1360 | 1.40 | 1395 | 1.50 | 1435 | 1.60 | 1470 | 1.65 | 1505 | 1.75 |
| 2000 | 1265 | 1.25 | 1305 | 1.30 | 1345 | 1.40 | 1380 | 1.50 | 1420 | 1.60 | 1455 | 1.70 | 1490 | 1.80 | 1525 | 1.90 |
| 2100 | 1295 | 1.35 | 1335 | 1.45 | 1370 | 1.55 | 1405 | 1.60 | 1445 | 1.70 | 1480 | 1.80 | 1515 | 1.90 | 1550 | 2.00 |
| 2200 | 1325 | 1.50 | 1360 | 1.55 | 1395 | 1.65 | 1435 | 1.75 | 1470 | 1.85 | 1505 | 1.95 | 1535 | 2.05 | 1570 | 2.15 |
| 2300 | 1355 | 1.60 | 1390 | 1.70 | 1425 | 1.80 | 1460 | 1.90 | 1495 | 2.00 | 1530 | 2.10 | 1560 | 2.20 | 1595 | 2.30 |
| 2400 | 1385 | 1.75 | 1420 | 1.85 | 1455 | 1.95 | 1490 | 2.05 | 1520 | 2.15 | 1555 | 2.25 | 1585 | 2.35 | 1620 | 2.45 |

0.10 to 0.80 in. w.g.

5 Ton Standard Efficiency (Horizontal)

TGA060S

| 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 | 750 | 0.35 | 805 | 0.40 | 865 | 0.50 | 925 | 0.55 | 980 | 0.65 | 1040 | 0.75 | 1095 | 0.85 | 1150 | 0.95 |
| 1700 | 790 | 0.45 | 845 | 0.50 | 900 | 0.55 | 955 | 0.65 | 1010 | 0.75 | 1065 | 0.80 | 1115 | 0.90 | 1170 | 1.05 |
| 1800 | 830 | 0.50 | 880 | 0.55 | 930 | 0.65 | 985 | 0.70 | 1035 | 0.80 | 1090 | 0.90 | 1140 | 1.00 | 1190 | 1.10 |
| 1900 | 870 | 0.60 | 920 | 0.65 | 965 | 0.75 | 1015 | 0.80 | 1065 | 0.90 | 1115 | 1.00 | 1165 | 1.10 | 1210 | 1.20 |
| 2000 | 910 | 0.70 | 955 | 0.75 | 1005 | 0.85 | 1050 | 0.90 | 1095 | 1.00 | 1145 | 1.10 | 1190 | 1.20 | 1235 | 1.30 |
| 2100 | 955 | 0.80 | 995 | 0.85 | 1040 | 0.95 | 1085 | 1.00 | 1130 | 1.10 | 1175 | 1.20 | 1220 | 1.30 | 1260 | 1.40 |
| 2200 | 995 | 0.90 | 1035 | 0.95 | 1075 | 1.05 | 1120 | 1.15 | 1160 | 1.20 | 1205 | 1.30 | 1245 | 1.40 | 1290 | 1.55 |
| 2300 | 1035 | 1.00 | 1075 | 1.10 | 1115 | 1.15 | 1155 | 1.25 | 1195 | 1.35 | 1235 | 1.45 | 1275 | 1.55 | 1320 | 1.65 |
| 2400 | 1080 | 1.15 | 1115 | 1.25 | 1155 | 1.30 | 1190 | 1.40 | 1230 | 1.50 | 1270 | 1.60 | 1310 | 1.70 | 1345 | 1.80 |

0.90 to 1.60 in. w.g.

5 Ton Standard Efficiency (Horizontal)

TGA060S

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 #3 | | | | High Static - Drive Kit #7 | | | | | | | | | | | |
| 1600 | 1200 | 1.05 | 1250 | 1.20 | 1300 | 1.30 | 1350 | 1.45 | 1395 | 1.55 | 1440 | 1.70 | 1485 | 1.85 | 1525 | 2.00 |
| 1700 | 1220 | 1.15 | 1270 | 1.25 | 1315 | 1.40 | 1365 | 1.50 | 1410 | 1.65 | 1455 | 1.80 | 1495 | 1.90 | 1540 | 2.10 |
| 1800 | 1240 | 1.20 | 1285 | 1.35 | 1335 | 1.45 | 1380 | 1.60 | 1425 | 1.75 | 1470 | 1.90 | 1510 | 2.00 | 1550 | 2.15 |
| 1900 | 1260 | 1.30 | 1305 | 1.45 | 1350 | 1.55 | 1395 | 1.70 | 1440 | 1.85 | 1485 | 1.95 | 1525 | 2.10 | 1565 | 2.25 |
| 2000 | 1280 | 1.40 | 1325 | 1.55 | 1370 | 1.65 | 1415 | 1.80 | 1455 | 1.90 | 1500 | 2.05 | 1540 | 2.20 | 1580 | 2.35 |
| 2100 | 1305 | 1.50 | 1350 | 1.65 | 1390 | 1.75 | 1435 | 1.90 | 1475 | 2.05 | 1515 | 2.20 | 1555 | 2.30 | 1595 | 2.50 |
| 2200 | 1330 | 1.65 | 1375 | 1.75 | 1415 | 1.90 | 1455 | 2.00 | 1495 | 2.15 | 1535 | 2.30 | 1575 | 2.45 | 1615 | 2.60 |
| 2300 | 1360 | 1.80 | 1400 | 1.90 | 1440 | 2.05 | 1480 | 2.15 | 1515 | 2.30 | 1555 | 2.45 | 1595 | 2.60 | 1630 | 2.75 |
| 2400 | 1385 | 1.90 | 1425 | 2.05 | 1465 | 2.20 | 1500 | 2.30 | 1540 | 2.45 | 1580 | 2.60 | 1615 | 2.75 | 1650 | 2.90 |

BLOWER DATA - BELT DRIVE

6 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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)

TGA072S

| 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 | 840 | 0.45 | 885 | 0.50 | 930 | 0.55 | 980 | 0.60 | 1025 | 0.65 | 1070 | 0.70 | 1115 | 0.75 | 1155 | 0.80 |
| 2000 | 875 | 0.55 | 920 | 0.55 | 965 | 0.60 | 1010 | 0.65 | 1055 | 0.75 | 1100 | 0.80 | 1140 | 0.85 | 1180 | 0.90 |
| 2100 | 915 | 0.60 | 960 | 0.65 | 1000 | 0.70 | 1045 | 0.75 | 1085 | 0.80 | 1130 | 0.85 | 1170 | 0.95 | 1210 | 1.00 |
| 2200 | 955 | 0.70 | 995 | 0.75 | 1040 | 0.80 | 1080 | 0.85 | 1120 | 0.90 | 1160 | 0.95 | 1200 | 1.05 | 1235 | 1.10 |
| 2300 | 995 | 0.80 | 1035 | 0.85 | 1075 | 0.90 | 1115 | 0.95 | 1150 | 1.00 | 1190 | 1.05 | 1230 | 1.15 | 1265 | 1.20 |
| 2400 | 1035 | 0.90 | 1075 | 0.95 | 1110 | 1.00 | 1150 | 1.05 | 1185 | 1.10 | 1225 | 1.20 | 1260 | 1.25 | 1295 | 1.30 |
| 2500 | 1075 | 1.00 | 1110 | 1.05 | 1150 | 1.10 | 1185 | 1.15 | 1220 | 1.25 | 1255 | 1.30 | 1290 | 1.35 | 1325 | 1.45 |
| 2600 | 1115 | 1.10 | 1150 | 1.20 | 1185 | 1.25 | 1220 | 1.30 | 1255 | 1.35 | 1290 | 1.45 | 1325 | 1.50 | 1355 | 1.55 |
| 2700 | 1155 | 1.25 | 1190 | 1.30 | 1225 | 1.35 | 1255 | 1.45 | 1290 | 1.50 | 1325 | 1.55 | 1355 | 1.65 | 1390 | 1.70 |
| 2800 | 1195 | 1.40 | 1230 | 1.45 | 1260 | 1.50 | 1295 | 1.60 | 1325 | 1.65 | 1360 | 1.70 | 1390 | 1.80 | 1420 | 1.85 |
| 2900 | 1235 | 1.55 | 1270 | 1.60 | 1300 | 1.65 | 1330 | 1.75 | 1360 | 1.80 | 1395 | 1.90 | 1425 | 1.95 | 1455 | 2.00 |

0.90 to 1.60 in. w.g.

6 Ton Standard Efficiency (Down-Flow)

TGA072S

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 – Kit #4 | | | | | | | High Static – Drive Kit #8 | | | | | | | | |
| 1900 | 1200 | 0.90 | 1240 | 0.95 | 1280 | 1.00 | 1320 | 1.05 | 1355 | 1.15 | 1395 | 1.20 | 1430 | 1.25 | 1465 | 1.35 |
| 2000 | 1225 | 0.95 | 1265 | 1.05 | 1300 | 1.10 | 1340 | 1.15 | 1375 | 1.20 | 1410 | 1.30 | 1450 | 1.35 | 1485 | 1.45 |
| 2100 | 1250 | 1.05 | 1285 | 1.10 | 1325 | 1.20 | 1360 | 1.25 | 1400 | 1.35 | 1435 | 1.40 | 1470 | 1.45 | 1500 | 1.55 |
| 2200 | 1275 | 1.15 | 1310 | 1.20 | 1350 | 1.30 | 1385 | 1.35 | 1420 | 1.45 | 1455 | 1.50 | 1490 | 1.60 | 1525 | 1.65 |
| 2300 | 1305 | 1.25 | 1340 | 1.35 | 1375 | 1.40 | 1410 | 1.45 | 1445 | 1.55 | 1480 | 1.60 | 1510 | 1.70 | 1545 | 1.75 |
| 2400 | 1330 | 1.35 | 1365 | 1.45 | 1400 | 1.50 | 1435 | 1.60 | 1470 | 1.65 | 1500 | 1.75 | 1535 | 1.80 | 1565 | 1.90 |
| 2500 | 1360 | 1.50 | 1395 | 1.55 | 1430 | 1.65 | 1460 | 1.70 | 1495 | 1.80 | 1525 | 1.85 | 1560 | 1.95 | 1590 | 2.05 |
| 2600 | 1390 | 1.65 | 1425 | 1.70 | 1455 | 1.80 | 1490 | 1.85 | 1520 | 1.95 | 1550 | 2.00 | 1585 | 2.10 | 1615 | 2.20 |
| 2700 | 1420 | 1.80 | 1455 | 1.85 | 1485 | 1.95 | 1515 | 2.00 | 1550 | 2.10 | 1580 | 2.15 | 1610 | 2.25 | 1640 | 2.35 |
| 2800 | 1455 | 1.95 | 1485 | 2.00 | 1515 | 2.10 | 1545 | 2.15 | 1575 | 2.25 | 1605 | 2.35 | 1635 | 2.40 | 1665 | 2.50 |
| 2900 | 1485 | 2.10 | 1515 | 2.15 | 1545 | 2.25 | 1575 | 2.35 | 1605 | 2.40 | 1635 | 2.50 | 1660 | 2.60 | 1690 | 2.65 |

BLOWER DATA - BELT DRIVE

6 TON

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

FOR ALL UNITS ADD:

1 - Any factory installed options air resistance (larger gas heat section, economizer, etc.) See Page 20

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.) See Page 20

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

0.10 to 0.80 in. w.g.

6 Ton Standard Efficiency (Horizontal)

TGA072S

| 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 | 795 | 0.45 | 850 | 0.55 | 905 | 0.60 | 960 | 0.70 | 1010 | 0.75 | 1060 | 0.85 | 1110 | 0.90 | 1160 | 1.00 |
| 2000 | 835 | 0.55 | 885 | 0.60 | 935 | 0.70 | 985 | 0.75 | 1035 | 0.85 | 1085 | 0.90 | 1135 | 1.00 | 1180 | 1.10 |
| 2100 | 870 | 0.65 | 920 | 0.70 | 970 | 0.75 | 1015 | 0.85 | 1065 | 0.90 | 1110 | 1.00 | 1160 | 1.10 | 1205 | 1.20 |
| 2200 | 905 | 0.70 | 955 | 0.80 | 1000 | 0.85 | 1045 | 0.95 | 1095 | 1.00 | 1140 | 1.10 | 1185 | 1.20 | 1225 | 1.30 |
| 2300 | 945 | 0.80 | 990 | 0.90 | 1035 | 0.95 | 1080 | 1.05 | 1120 | 1.10 | 1165 | 1.20 | 1210 | 1.30 | 1250 | 1.40 |
| 2400 | 980 | 0.90 | 1025 | 1.00 | 1065 | 1.05 | 1110 | 1.15 | 1150 | 1.25 | 1195 | 1.30 | 1235 | 1.40 | 1275 | 1.50 |
| 2500 | 1020 | 1.05 | 1060 | 1.10 | 1100 | 1.20 | 1140 | 1.25 | 1180 | 1.35 | 1225 | 1.45 | 1265 | 1.55 | 1305 | 1.65 |
| 2600 | 1055 | 1.15 | 1095 | 1.25 | 1135 | 1.30 | 1175 | 1.40 | 1215 | 1.50 | 1255 | 1.60 | 1290 | 1.65 | 1330 | 1.80 |
| 2700 | 1095 | 1.30 | 1130 | 1.35 | 1170 | 1.45 | 1210 | 1.55 | 1245 | 1.60 | 1285 | 1.70 | 1320 | 1.80 | 1360 | 1.95 |
| 2800 | 1130 | 1.45 | 1170 | 1.50 | 1205 | 1.60 | 1240 | 1.70 | 1280 | 1.80 | 1315 | 1.85 | 1350 | 1.95 | 1385 | 2.05 |
| 2900 | 1170 | 1.60 | 1205 | 1.65 | 1240 | 1.75 | 1275 | 1.85 | 1310 | 1.95 | 1345 | 2.05 | 1380 | 2.15 | 1415 | 2.25 |

0.90 to 1.60 in. w.g.

6 Ton Standard Efficiency (Horizontal)

TGA072S

| Air Volume (cfm) | External Static (in.w.g.) | | | | | | | | | | | | | | | |
|------------------|---------------------------|------|------|------|------|------|------|----------------------------|------|------|------|------|------|------|------|------|
| | 0.90 | | 1.00 | | 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 | 1205 | 1.10 | 1250 | 1.20 | 1295 | 1.30 | 1340 | 1.45 | 1380 | 1.55 | 1420 | 1.65 | 1460 | 1.75 | 1500 | 1.90 |
| 2000 | 1225 | 1.20 | 1270 | 1.30 | 1315 | 1.40 | 1355 | 1.50 | 1400 | 1.65 | 1440 | 1.75 | 1475 | 1.85 | 1515 | 2.00 |
| 2100 | 1250 | 1.30 | 1290 | 1.40 | 1335 | 1.50 | 1375 | 1.60 | 1415 | 1.75 | 1455 | 1.85 | 1495 | 2.00 | 1530 | 2.10 |
| 2200 | 1270 | 1.40 | 1310 | 1.50 | 1355 | 1.60 | 1395 | 1.75 | 1435 | 1.85 | 1475 | 1.95 | 1510 | 2.10 | 1550 | 2.20 |
| 2300 | 1295 | 1.50 | 1335 | 1.60 | 1375 | 1.70 | 1415 | 1.85 | 1455 | 1.95 | 1490 | 2.05 | 1530 | 2.20 | 1565 | 2.35 |
| 2400 | 1320 | 1.65 | 1355 | 1.75 | 1395 | 1.85 | 1435 | 1.95 | 1475 | 2.10 | 1510 | 2.20 | 1545 | 2.30 | 1585 | 2.45 |
| 2500 | 1345 | 1.75 | 1380 | 1.85 | 1420 | 2.00 | 1455 | 2.10 | 1495 | 2.20 | 1530 | 2.35 | 1565 | 2.45 | 1600 | 2.60 |
| 2600 | 1370 | 1.90 | 1405 | 2.00 | 1445 | 2.10 | 1480 | 2.25 | 1515 | 2.35 | 1550 | 2.50 | 1585 | 2.60 | 1620 | 2.75 |
| 2700 | 1395 | 2.05 | 1430 | 2.15 | 1470 | 2.25 | 1505 | 2.40 | 1540 | 2.50 | 1575 | 2.65 | 1610 | 2.75 | 1640 | 2.90 |
| 2800 | 1425 | 2.20 | 1460 | 2.30 | 1495 | 2.45 | 1530 | 2.55 | 1565 | 2.70 | 1595 | 2.80 | 1630 | 2.95 | 1665 | 3.05 |
| 2900 | 1450 | 2.35 | 1485 | 2.45 | 1520 | 2.60 | 1555 | 2.70 | 1585 | 2.85 | 1620 | 2.95 | 1655 | 3.10 | 1685 | 3.25 |

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.

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 | Gas Heat | |
|-------------------|------------|--------------|------------|
| | | Medium Input | High Input |
| 800 | 0.04 | 0.02 | 0.02 |
| 1000 | 0.04 | 0.02 | 0.02 |
| 1200 | 0.04 | 0.02 | 0.02 |
| 1400 | 0.04 | 0.02 | 0.03 |
| 1600 | 0.04 | 0.03 | 0.04 |
| 1800 | 0.05 | 0.03 | 0.05 |
| 2000 | 0.05 | 0.04 | 0.06 |
| 2200 | 0.05 | 0.04 | 0.07 |
| 2400 | 0.05 | 0.05 | 0.08 |
| 2600 | 0.06 | 0.05 | 0.09 |
| 2800 | 0.06 | 0.06 | 0.10 |
| 3000 | 0.06 | 0.07 | 0.11 |

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 |

CEILING DIFFUSER AIR THROW DATA

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

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

ELECTRICAL DATA

2 - 2.5 TON

| DIRECT DRIVE BLOWER | | TGA024S | TGA030S |
|---|----------------------|----------------------|----------------------|
| Efficiency | | Standard | Standard |
| 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 |
| ² Minimum Circuit Ampacity | Unit Only | 17 | 22 |
| Disconnect Kit | Standard Access Door | T1DISC080A-1 (20W17) | T1DISC080A-1 (20W17) |
| | Hinged | T1DISC080AH1 (20W23) | T1DISC080AH1 (20W23) |

ELECTRICAL DATA

3 TON

| BELT OR DIRECT DRIVE BLOWER | | TGA036B | | | | | | TGA036S | | | | | | | | | | |
|---|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----|-----|------|
| Efficiency | | Basic | | | | | | Standard | | | | | | | | | | |
| Voltage - 60hz | | 208/230V-3ph | | | 460V-3ph | | | 208/230V-1ph | | 208/230V-3ph | | 460V-3ph | | 575V-3ph | | | | |
| Compressor | Rated Load Amps | 10.3 | 4.3 | 14.4 | 9.6 | 5.8 | 3.8 | 14.4 | 9.6 | 5.8 | 3.8 | 14.4 | 9.6 | 5.8 | 3.8 | | | |
| | Locked Rotor Amps | 75.0 | 40.0 | 77.0 | 75.0 | 38.0 | 25.0 | 77.0 | 75.0 | 38.0 | 25.0 | 77.0 | 75.0 | 38.0 | 25.0 | | | |
| Outdoor Fan Motor | Full Load Amps | 1.7 | 1.1 | 1.7 | 1.7 | 1.1 | 0.7 | 1.7 | 1.7 | 1.1 | 0.7 | 1.7 | 1.7 | 1.1 | 0.7 | | | |
| | Locked Rotor Amps | 3.1 | 2.2 | 3.1 | 3.1 | 2.2 | 1.3 | 3.1 | 3.1 | 2.2 | 1.3 | 3.1 | 3.1 | 2.2 | 1.3 | | | |
| Power Exhaust Fan | Horsepower | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | (1) 3/4 (561) | | | |
| | Full Load Amps | 5.0 | 2.2 | 5.0 | 5.0 | 2.2 | 1.5 | 5.0 | 5.0 | 2.2 | 1.5 | 5.0 | 5.0 | 2.2 | 1.5 | | | |
| | Locked Rotor Amps | 7.8 | 3.4 | 7.8 | 7.8 | 3.4 | 2.9 | 7.8 | 7.8 | 3.4 | 2.9 | 7.8 | 7.8 | 3.4 | 2.9 | | | |
| Service Outlet 115V GFI | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | | | |
| Indoor Blower Motor | Horsepower | .5 | 1.5 | 2 | .5 | 1.5 | 2 | .5 | 1.5 | .5 | 1.5 | 2 | .5 | 1.5 | 2 | .5 | 1.5 | 2 |
| | Rated Load Amps | 3.1 | 5.7 | 7.5 | 1.5 | 2.8 | 3.4 | 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 | 40 | 46.9 | 3.8 | 20 | 20.4 | 6.8 | 55 | 6.8 | 40 | 46.9 | 3.8 | 20 | 20.4 | 3.8 | 15 | 16.2 |
| ¹ Maximum Overcurrent Protection | with power exhaust | 30 | 35 | 35 | 15 | 15 | 15 | 40 | 50 | 30 | 30 | 35 | 15 | 15 | 15 | 15 | 15 | 15 |
| | less power exhaust | 25 | 30 | 30 | 15 | 15 | 15 | 35 | 45 | 25 | 25 | 30 | 15 | 15 | 15 | 15 | 15 | 15 |
| ² Minimum Circuit Ampacity | with power exhaust | 23 | 26 | 28 | 11 | 12 | 13 | 28 | 37 | 22 | 25 | 27 | 13 | 14 | 14 | 9 | 10 | 10 |
| | less power exhaust | 18 | 21 | 23 | 8 | 10 | 10 | 23 | 32 | 17 | 20 | 22 | 10 | 12 | 12 | 8 | 8 | 9 |
| Disconnect Kit | Standard Access Door | T1DISC080A-1 | | | | | | T1DISC080A-1 | | | | | | | | | | |
| | Hinged | T1DISC080AH1 | | | | | | T1DISC080AH1 | | | | | | | | | | |

ELECTRICAL DATA **4 TON**

| BELT OR DIRECT DRIVE BLOWER Efficiency | | TGA048B Basic | | | | | | TGA048S Standard | | | | | | | | | | |
|---|----------------------|---------------|-----|---------------|-----|---------------|------|------------------|------|---------------|-----|---------------|-----|-----|------|-----|-----|------|
| | | 208/230V-3ph | | 460V-3ph | | 208/230V-1ph | | 208/230V-3ph | | 460V-3ph | | 575V-3ph | | | | | | |
| Voltage - 60hz | | 208/230V-3ph | | 460V-3ph | | 208/230V-1ph | | 208/230V-3ph | | 460V-3ph | | 575V-3ph | | | | | | |
| Compressor | Rated Load Amps | 12.8 | | 6.4 | | 20.2 | | 12.2 | | 6.1 | | 4.9 | | | | | | |
| | Locked Rotor Amps | 91.0 | | 46.0 | | 137.0 | | 83.1 | | 41.0 | | 30.4 | | | | | | |
| Outdoor Fan Motor | Full Load Amps | 1.7 | | 1.1 | | 1.7 | | 1.7 | | 1.1 | | 0.7 | | | | | | |
| | Locked Rotor Amps | 3.1 | | 2.2 | | 3.1 | | 3.1 | | 2.2 | | 1.3 | | | | | | |
| Power Exhaust Fan | Horsepower | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | | | | | |
| | Full Load Amps | 5.0 | | 2.2 | | 5.0 | | 5.0 | | 2.2 | | 1.5 | | | | | | |
| | Locked Rotor Amps | 7.8 | | 3.4 | | 7.8 | | 7.8 | | 3.4 | | 2.9 | | | | | | |
| Service Outlet 115V GFI | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | | | | | |
| Indoor Blower Motor | Horsepower | .5 | 1.5 | 2 | .5 | 1.5 | 2 | .5 | 1.5 | .5 | 1.5 | 2 | .5 | 1.5 | 2 | | | |
| | Rated Load Amps | 3.1 | 5.7 | 7.5 | 1.5 | 2.8 | 3.4 | 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 | 40 | 46.9 | 3.8 | 20 | 20.4 | 6.8 | 55 | 6.8 | 40 | 46.9 | 3.8 | 20 | 20.4 | 3.8 | 15 | 16.2 |
| 1 Maximum Overcurrent Protection | with power exhaust | 35 | 40 | 40 | 15 | 20 | 20 | 50 | 60 | 35 | 35 | 40 | 15 | 15 | 20 | 15 | 15 | 15 |
| | less power exhaust | 30 | 35 | 35 | 15 | 15 | 15 | 50 | 50 | 30 | 30 | 35 | 15 | 15 | 15 | 15 | 15 | 15 |
| 2 Minimum Circuit Ampacity | with power exhaust | 26 | 29 | 31 | 13 | 15 | 15 | 36 | 44 | 26 | 28 | 30 | 13 | 14 | 15 | 10 | 11 | 11 |
| | less power exhaust | 21 | 24 | 26 | 11 | 12 | 13 | 31 | 39 | 21 | 23 | 25 | 11 | 12 | 13 | 9 | 10 | 10 |
| Disconnect Kit | Standard Access Door | T1DISC080A-1 | | | | | | T1DISC080A-1 | | | | | | | | | | |
| | Hinged | T1DISC080AH1 | | | | | | T1DISC080AH1 | | | | | | | | | | |

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.

ELECTRICAL DATA **5 TON**

| BELT OR DIRECT DRIVE BLOWER Efficiency | | TGA060B Basic | | | | | | TGA060S Standard | | | | | | | | | | |
|---|----------------------|---------------|-----|---------------|-----|---------------|------|------------------|------|---------------|-----|---------------|-----|-----|------|-----|-----|------|
| | | 208/230V-3ph | | 460V-3ph | | 208/230V-1ph | | 208/230V-3ph | | 460V-3ph | | 575V-3ph | | | | | | |
| Voltage - 60hz | | 208/230V-3ph | | 460V-3ph | | 208/230V-1ph | | 208/230V-3ph | | 460V-3ph | | 575V-3ph | | | | | | |
| Compressor | Rated Load Amps | 18.6 | | 9.0 | | 25.3 | | 15.4 | | 7.1 | | 5.3 | | | | | | |
| | Locked Rotor Amps | 128.0 | | 63.0 | | 141.0 | | 104.0 | | 52.0 | | 36.1 | | | | | | |
| Outdoor Fan Motor | Full Load Amps | 2.4 | | 1.3 | | 2.4 | | 2.4 | | 1.3 | | 1.0 | | | | | | |
| | Locked Rotor Amps | 4.7 | | 2.4 | | 4.7 | | 4.7 | | 2.4 | | 1.9 | | | | | | |
| Power Exhaust Fan | Horsepower | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | | | | | | |
| | Full Load Amps | 5.0 | | 2.2 | | 5.0 | | 5.0 | | 2.2 | | 1.5 | | | | | | |
| | Locked Rotor Amps | 7.8 | | 3.4 | | 7.8 | | 7.8 | | 3.4 | | 2.9 | | | | | | |
| Service Outlet 115V GFI | | 15 | | 15 | | 15 | | 15 | | 15 | | 15 | | | | | | |
| Indoor Blower Motor | Horsepower | .75 | 1.5 | 2 | .75 | 1.5 | 2 | .75 | 1.5 | .75 | 1.5 | 2 | .75 | 1.5 | 2 | | | |
| | Rated Load Amps | 4.2 | 5.7 | 7.5 | 2.2 | 2.8 | 3.4 | 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 | 40 | 46.9 | 5.2 | 20 | 20.4 | 9.6 | 55 | 9.6 | 40 | 46.9 | 5.2 | 20 | 20.4 | 5.2 | 15 | 16.2 |
| 1 Maximum Overcurrent Protection | with power exhaust | 50 | 50 | 50 | 25 | 25 | 25 | 60 | 70 | 45 | 45 | 45 | 20 | 20 | 20 | 15 | 15 | 15 |
| | less power exhaust | 45 | 45 | 50 | 20 | 20 | 20 | 60 | 70 | 40 | 40 | 40 | 15 | 20 | 20 | 15 | 15 | 15 |
| 2 Minimum Circuit Ampacity | with power exhaust | 35 | 37 | 39 | 17 | 18 | 19 | 44 | 51 | 31 | 33 | 35 | 15 | 16 | 16 | 12 | 12 | 12 |
| | less power exhaust | 30 | 32 | 34 | 15 | 16 | 16 | 39 | 46 | 26 | 28 | 30 | 13 | 13 | 14 | 10 | 10 | 11 |
| Disconnect Kit | Standard Access Door | T1DISC080A-1 | | | | | | T1DISC080A-1 | | | | | | | | | | |
| | Hinged | T1DISC080AH1 | | | | | | T1DISC080AH1 | | | | | | | | | | |

ELECTRICAL DATA

6 TON

| BELT DRIVE BLOWER | | TGA072S | | | | | |
|---|----------------------|---------------|------|---------------|------|---------------|------|
| Efficiency | | Standard | | | | | |
| 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 | (1) 3/4 (561) | | (1) 3/4 (561) | | (1) 3/4 (561) | |
| | Full Load Amps | 5.0 | | 2.2 | | 1.5 | |
| | Locked Rotor Amps | 7.8 | | 3.4 | | 2.9 | |
| Service Outlet 115V GFI | | 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 | with power exhaust | 50 | 50 | 25 | 25 | 20 | 20 |
| | less power exhaust | 50 | 50 | 20 | 25 | 20 | 20 |
| ² Minimum Circuit Ampacity | with power exhaust | 37 | 39 | 18 | 19 | 15 | 15 |
| | less power exhaust | 32 | 34 | 16 | 16 | 13 | 13 |
| Disconnect Kit | Standard Access Door | T1DISC080N-1 | | | | | |
| | Hinged | T1DISC080NH1 | | | | | |

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.

TGA PARTS ARRANGEMENT

FILTERS (4)

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

**ECONOMIZER
(OPTIONAL)**

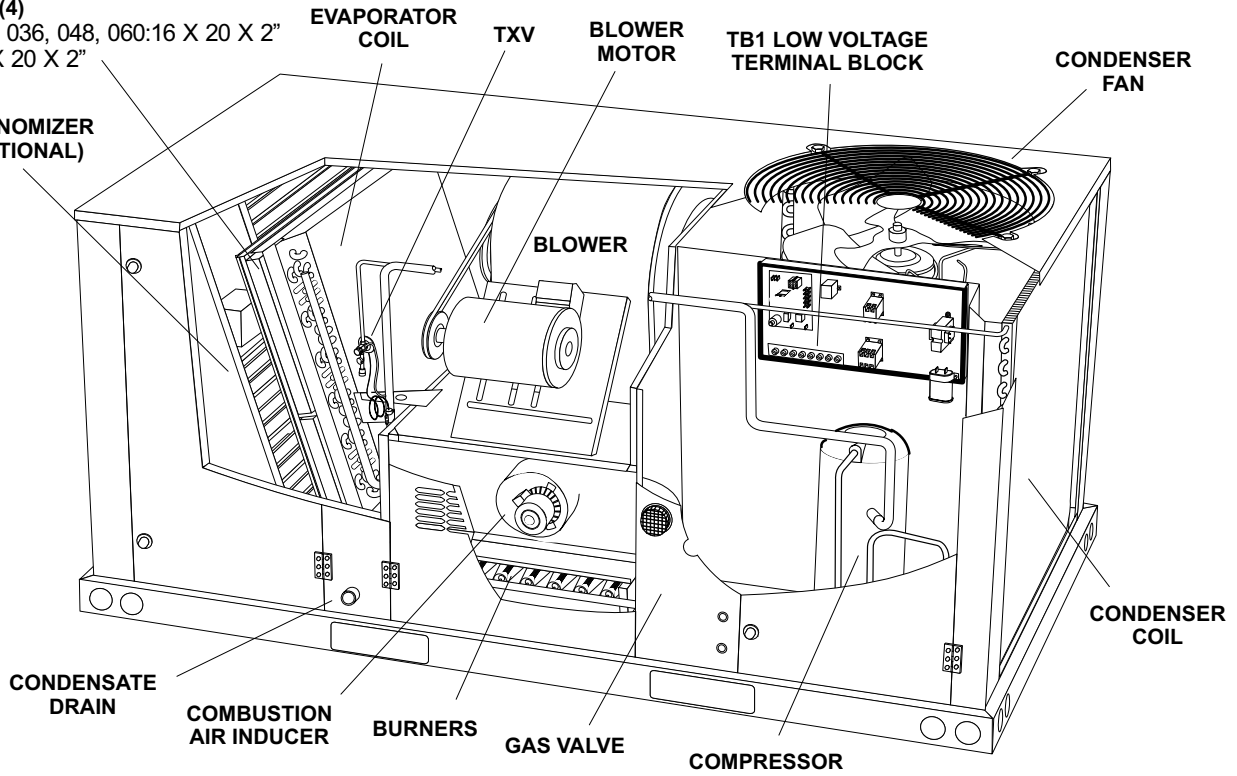


FIGURE 1

TGA CONTROL BOX

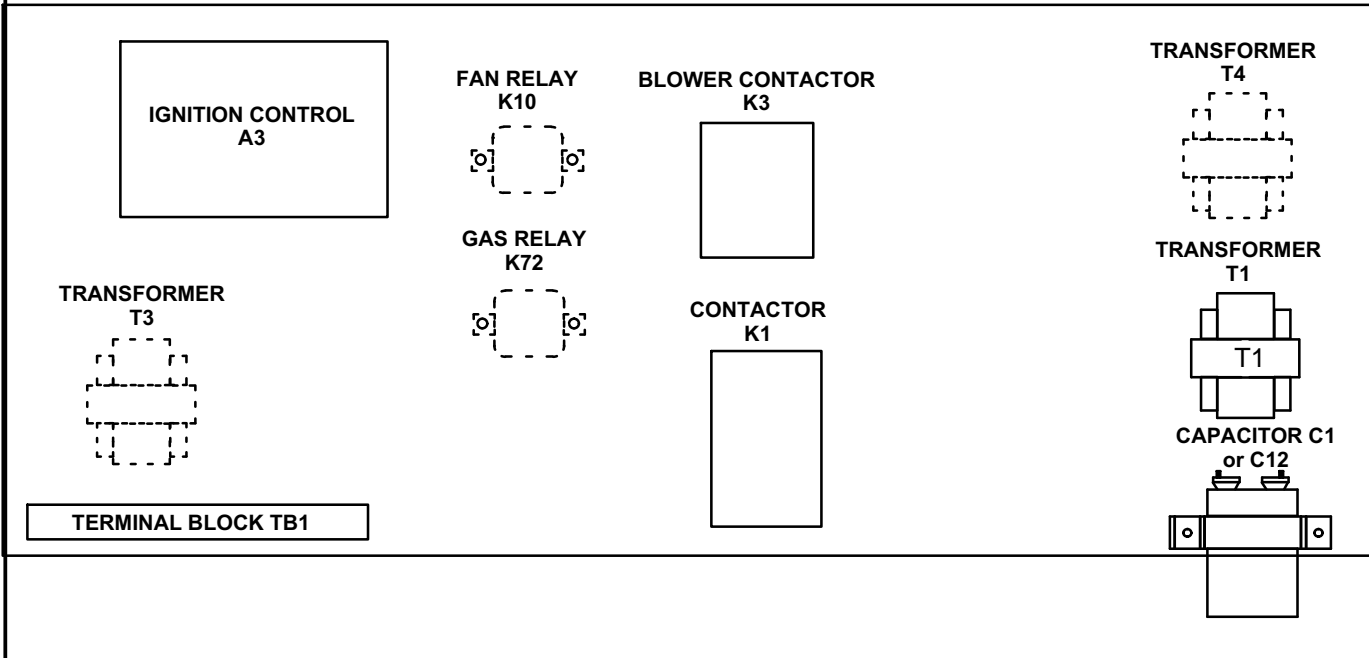


FIGURE 2

I-UNIT COMPONENTS

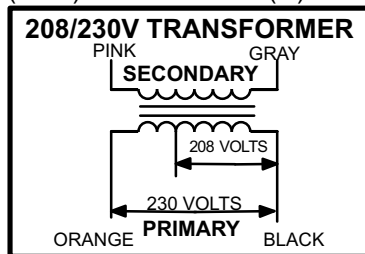
All 2 through 6 ton (7 through 21 kW) units are built to order units (BTO). The TGA unit components are shown in figure 1. All units come standard with removable unit panels. All L1, L2, and L3 wiring is color coded; L1 is red, L2 is yellow, and L3 is blue.

A-Control Box Components

TGA 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



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

FIGURE 3

2-C. A. I. Transformers T3 (G, J voltage)

All (G) 460 and 575 (J) voltage units use transformer T3 mounted in the control box. The transformers have an output rating of 0.75A. T3 transformer supplies 230 VAC power to the combustion air inducer motor (B6).

3-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 transformer to power the indoor blower. It is connected to line voltage and is powered at all times.

4-Terminal Strip TB1

All indoor thermostat connections will be to TB1 located in the control box. Thermostats without “occupied “ and “un-occupied” modes and installed with economizer or motorized outdoor air equipped units, should have a jumper across terminals “R“ and “OC”.

5-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.

6-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 MFD ratings. See side of capacitor for ratings,.

7-Compressor Contactor K1

In all TGA 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.

8-Blower Contactor K3

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

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

Outdoor fan relay K10 is an optional DPDT relay with a 24VAC coil. K10 energizes condenser fan B4.

10-Gas Relay K72 (two stage units)

Relay K72 is normally closed and controls combustion air inducer B6. K72 switches the inducer B6 to high speed in response to two stage heat demand.

11-Burner Control A3

| | |
|---|---|
| ⚠ WARNING | |
|  | Shock hazard. Spark related components contain high voltage which can cause personal injury or death. Disconnect power before servicing. Control is not field repairable. Unsafe operation will result. If control is inoperable, simply replace the entire control. |

The main control box (see figure 2) houses the burner control A3.

The ignition control provides four main functions: gas valve control, blower control, ignition, and flame sensing. The control has a green LED to show control status (table 1). The unit will usually ignite on the first trial and A3 allows three trials for ignition before locking out. The lockout time is 1 hour. After lockout, the ignition control automatically resets and provides three more attempts at ignition. Manual reset after lockout requires removing power from the control for more than 1 second or removing the thermostat call for heat for more than 1 second but no more than 20 seconds. 24 volt thermostat connections (P2) and heating component connections (J1) are made through separate jackplugs. See table 2 for thermostat terminations and table 3 for heating component terminations.

TABLE 1

| LED | STATUS |
|------------|--|
| Slow Flash | Normal operation. No call for heat. |
| Fast Flash | Normal operation. Call for heat. |
| Steady Off | Internal Control Fault, No Power To Board or Gas Valve Relay Fault |
| Steady On | Control Internal Failure. |
| 2 Flashes | Lockout. Failed to detect or sustain flame. |
| 3 Flashes | Rollout switch open / Prove switch open or closed. |
| 4 Flashes | Primary High Limit switch open. |
| 5 Flashes | Flame sensed but gas valve not open. |

TABLE 2

| P2 TERMINAL DESIGNATIONS | |
|--------------------------|----------------------------|
| Pin # | Function |
| 1 | R 24 Volts to thermostat |
| 2 | W1 Heat Demand |
| 3 | Y Cool Demand |
| 4 | C Common |
| 5 | G Indoor Blower |
| 6 | BL OUT Indoor Blower Relay |
| 7 | W2 Second Stage Heat |

TABLE 3

| J1 TERMINAL DESIGNATIONS | |
|--------------------------|-----------------------------------|
| Pin # | Function |
| 1 | Limit Switch Out |
| 2 | Rollout Switch / Prove Switch Out |
| 3 | Gas Valve Common |
| 4 | Gas Valve Out |
| 5 | Rollout Switch / Prove Switch In |
| 6 | Limit Switch In |

Flame rectification sensing is used on all TGA units. Loss of flame during a heating cycle is indicated by an absence of flame signal (0 microamps). If this happens, the control will immediately restart the ignition sequence and then lock out if ignition is not gained after the third trial. See System Service Checks section for flame current measurement. The control shuts off gas flow immediately in the event of a power failure. Upon restoration of gas and power, the control will restart the ignition sequence and continue until flame is established or system locks out.

Operation

On a heating demand, the ignition control checks for a closed limit switch and open combustion air prove switch. Once this check is complete and conditions are correct, the ignition control then allows 30 seconds for the combustion air inducer to vent exhaust gases from the burners. When the combustion air inducer is purging the exhaust gases, the combustion air prove switch closes proving that the combustion air inducer is operating before allowing the ignition control to energize. When the combustion air prove switch is closed and the delay is over, the ignition control activates the gas valve, the spark electrode and the flame sensing electrode. Once the gas valve is energized the non-adjustable 40 second indoor blower delay period begins. Sparking stops immediately after flame is sensed or at the end of the 8 second trial for ignition.

The control then proceeds to “steady state” mode where all inputs are monitored to ensure the limit switch, rollout switch and prove switch are closed as well as flame is present. When the heat call is satisfied and the gas valve is de-energized, a combustion air inducer post purge period of 5 seconds begins along with a 120 second blower off delay.

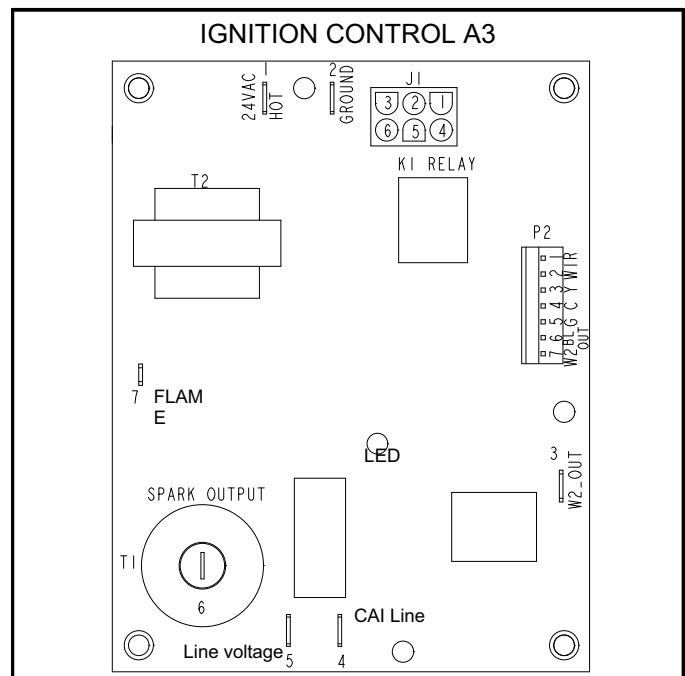


FIGURE 4

B-Cooling Components

All units use independent cooling circuits consisting of separate compressor, condenser coil and evaporator coil. See figure 5. One draw-through type condenser fan is used in TGA024/072 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 evaporator coil is slab type and uses a 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 (S49) on the evaporator coil. See figure 5. A Low ambient switch (S11) and high pressure switch (S4) is available as a field accessory for additional compressor protection.

1-Compressor B1

All TGA024/072 units (except TGA036B) use one scroll compressor. See "SPECIFICATIONS" and "ELECTRICAL DATA" (table of contents) or compressor nameplate for compressor specifications. The TGA036B 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 series 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

TGA 036, 048 and 060 units are equipped with either direct drive or belt drive blowers. The TGA024 and 030 are equipped with direct drive blowers only and the TGA072 is available with belt drive blowers only. See unit nameplate for blower type. The blower compartment in all TGA024/072 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 TGA024, 030, 036 and 048 direct drive units use $10'' \times 10''$ (254 mm x 254 mm) blower wheels also. The TGA060 direct drive units use $11'' \times 10''$ (279 mm x 254 mm) blower wheels.

TGA PLUMBING and S49 FREEZESTAT LOCATION

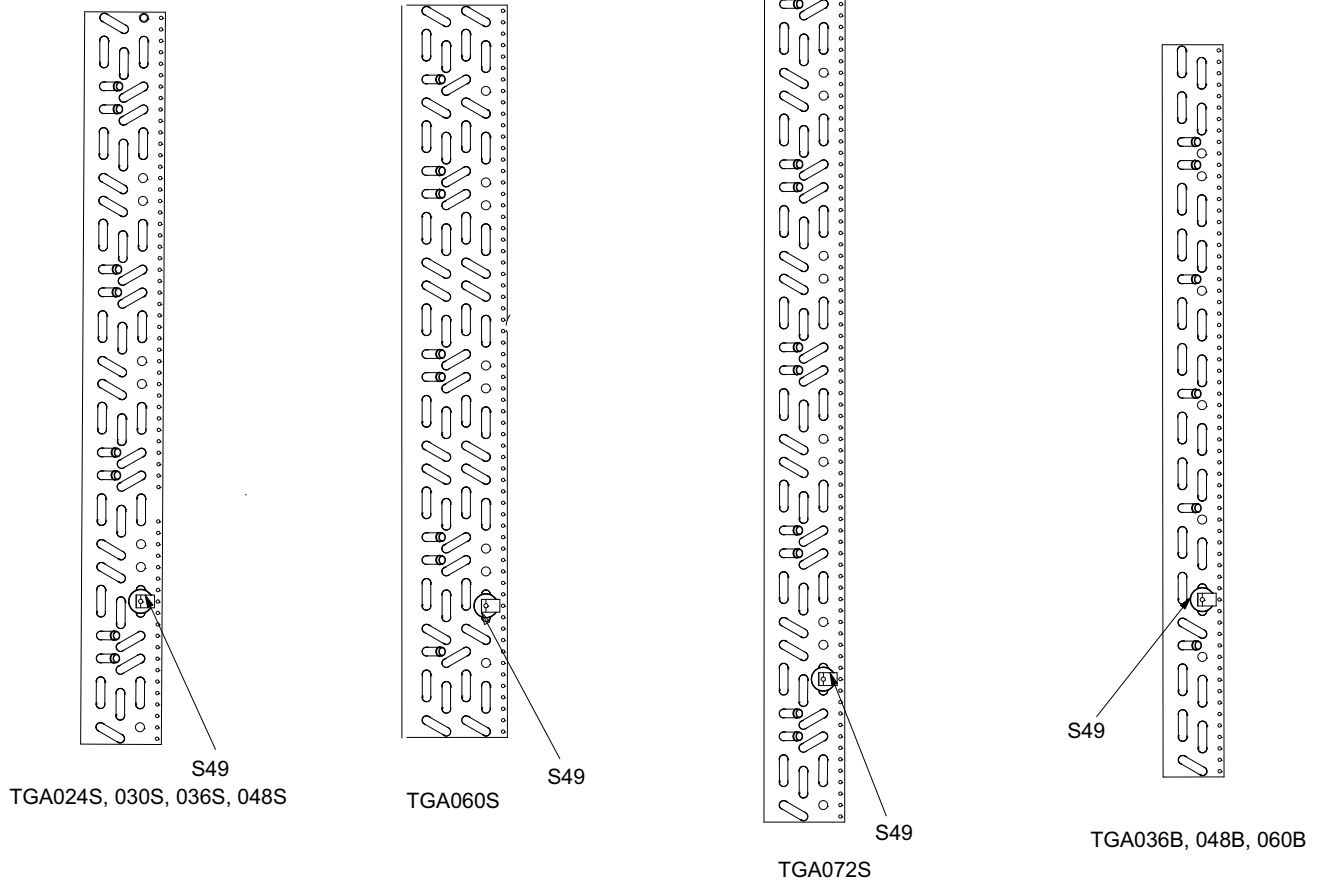
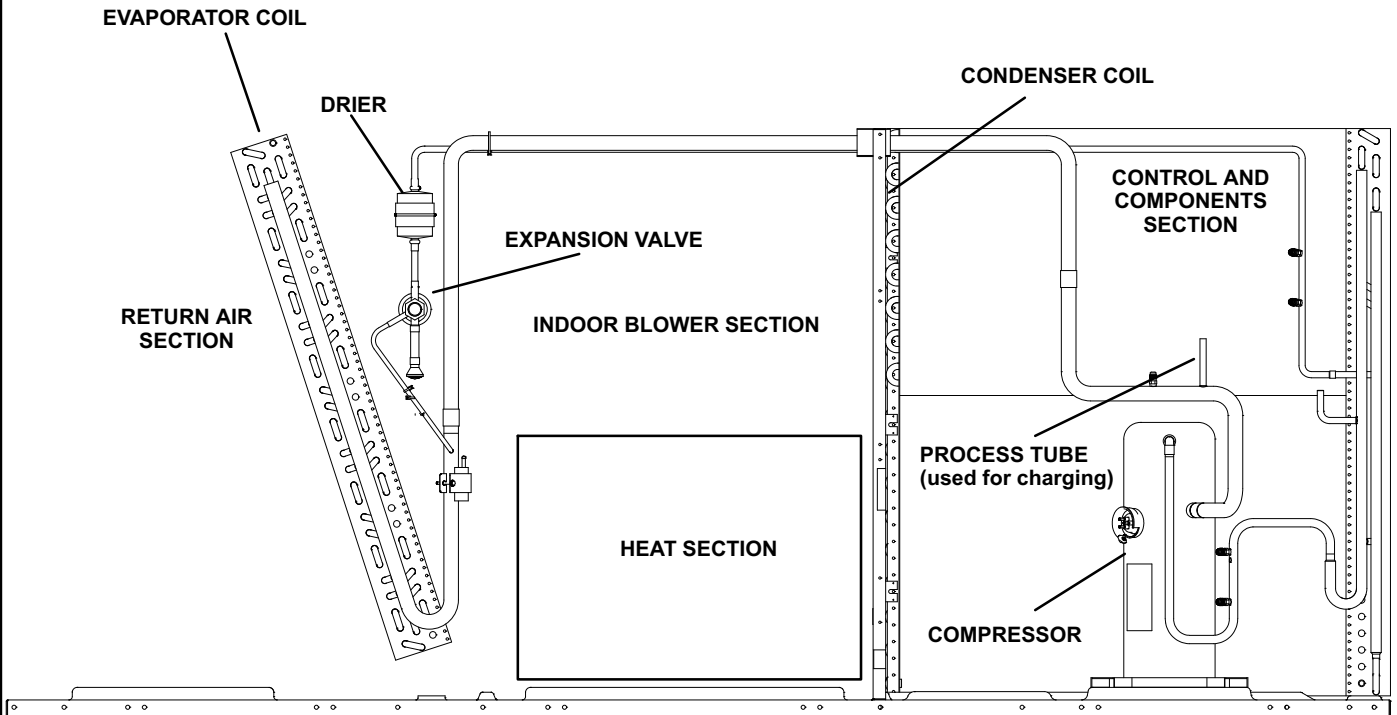


FIGURE 5

2-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.

3-Indoor Blower Motor Capacitor C4

All single phase blower motors are PSC and require a run capacitor located on the blower housing. Ratings may vary from each motor. See motor nameplate for capacitor ratings.

⚠ 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 6 to determine the factory set blower speed.

| BLOWER SPEED FACTORY SETTINGS | | |
|--|--|--|
| 036 Units | 024, 030, 048 Units | 060 Units |
| <input type="checkbox"/> 1 Com | <input type="checkbox"/> 1 Com | <input type="checkbox"/> 1 Com |
| <input type="checkbox"/> 2 Hi | <input type="checkbox"/> 2 Hi | <input type="checkbox"/> 2 Hi |
| <input type="checkbox"/> 3 Med | <input type="checkbox"/> 3 Med* | <input type="checkbox"/> 3 Low* |
| <input type="checkbox"/> 4 Low* | <input type="checkbox"/> 4 Low | <input type="checkbox"/> 4 Unused |

*Factory Setting

FIGURE 6

- 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 7.

- 5- Check and adjust belt alignment as needed. See figure 8.

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.

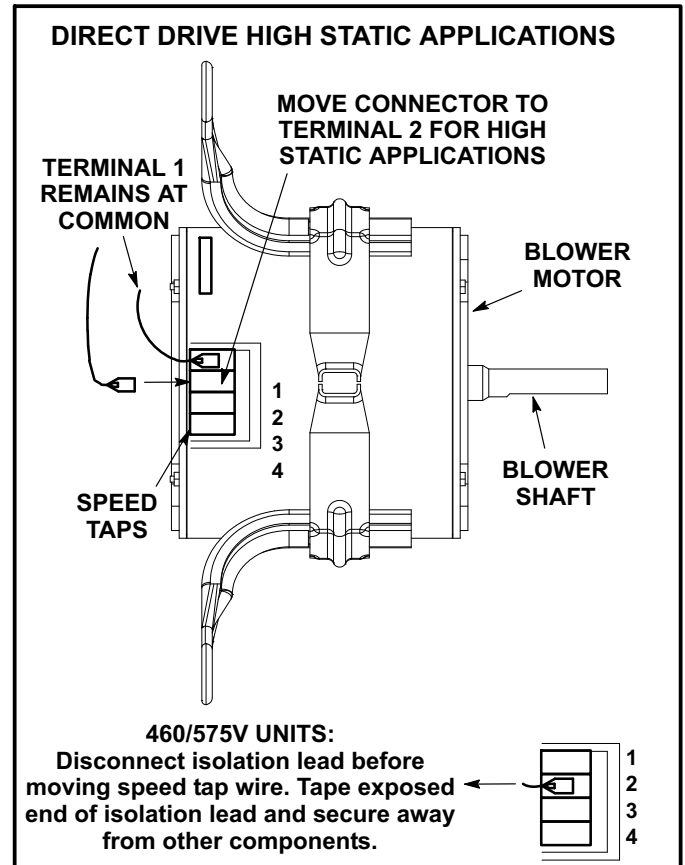


FIGURE 7

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 10. Do not exceed minimum and maximum number of pulley turns as shown in table 4.

**TABLE 4
MINIMUM AND MAXIMUM PULLEY ADJUSTMENT**

| Belt | Min. Turns Open | Maxi. 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 8.

- 1- Loosen four bolts securing motor base to mounting frame. See figure 10.
- 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.

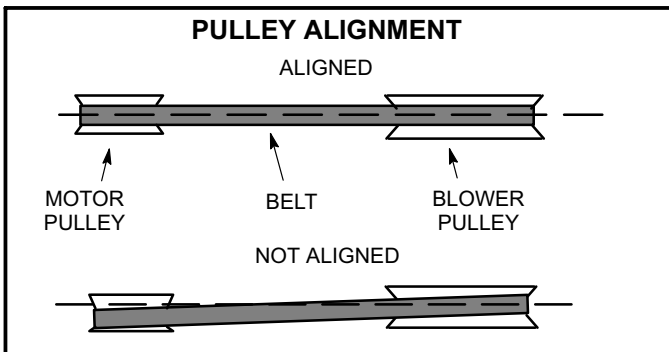


FIGURE 8

E-Check Belt Tension

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

- 1- Measure span length X. See figure 9.
- 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.

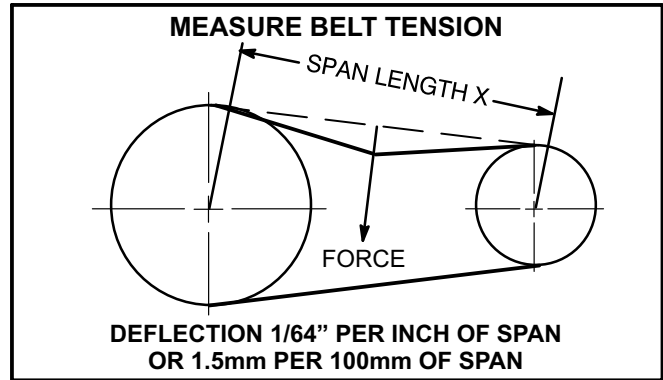


FIGURE 9

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

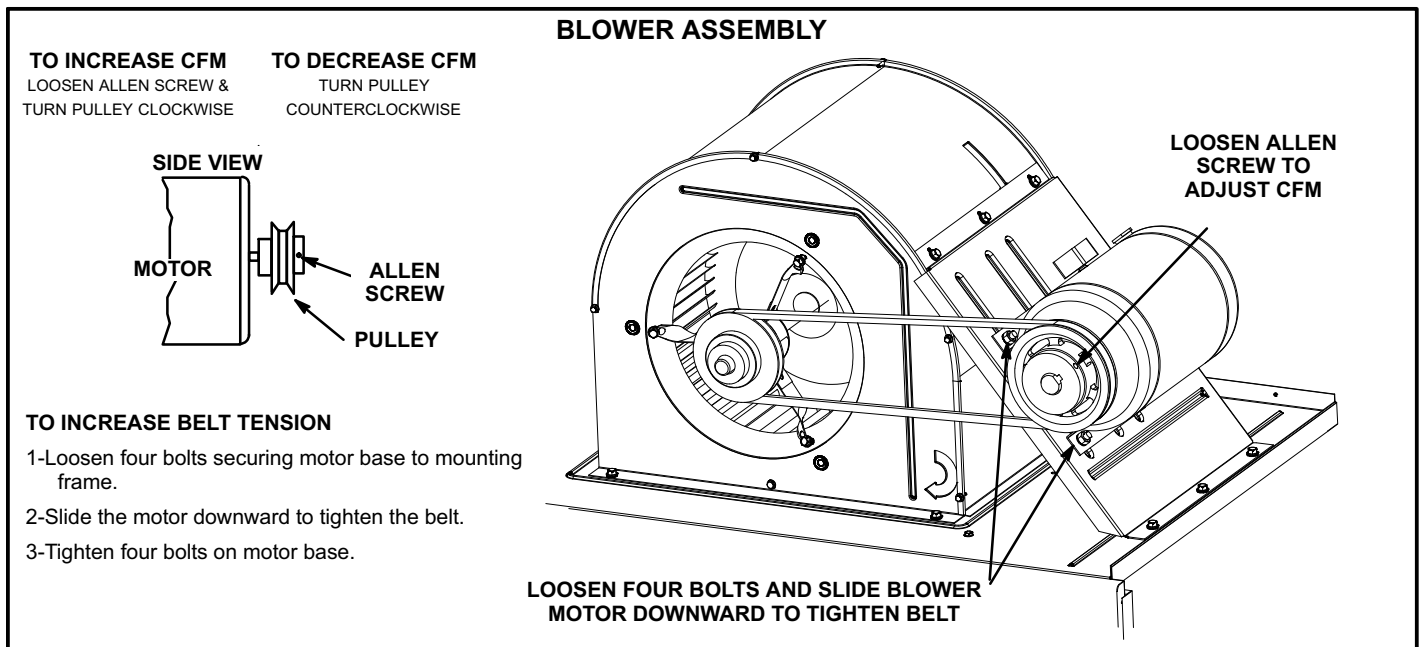


FIGURE 10

D-GAS HEAT COMPONENTS

TGA024/030/036/048/060/072 units are available in 65,000 BTUH (19 kW) and 105,000 BTUH (30.8 Kw), with the 048, 060 and 072 having 150,000 BTUH (44 kW) heat sizes.

Two stage heat is available in units with 150,000 BTUH capacity only.

See Gas Heat Specifications on Page 4 for more detail.

1-Heat Exchanger Figure 11

The TGA units use aluminized steel inshot burners with tubular aluminized steel heat exchangers and redundant gas valve. Burners in all units use a burner venturi to mix gas and air for proper combustion. Combustion takes place at each tube entrance. As hot combustion gases are drawn upward through each tube by the combustion air inducer, exhaust gases are drawn out the top and fresh air/gas mixture is drawn in at the bottom. Heat is transferred to the air stream from all surfaces of the heat exchanger tubes. The supply air blower forces air across the tubes to extract the heat of combustion. The shape of the tubes ensures maximum heat exchange.

The gas valves on two stage units accomplish staging by allowing more or less gas to the burners as called for by heating demand.

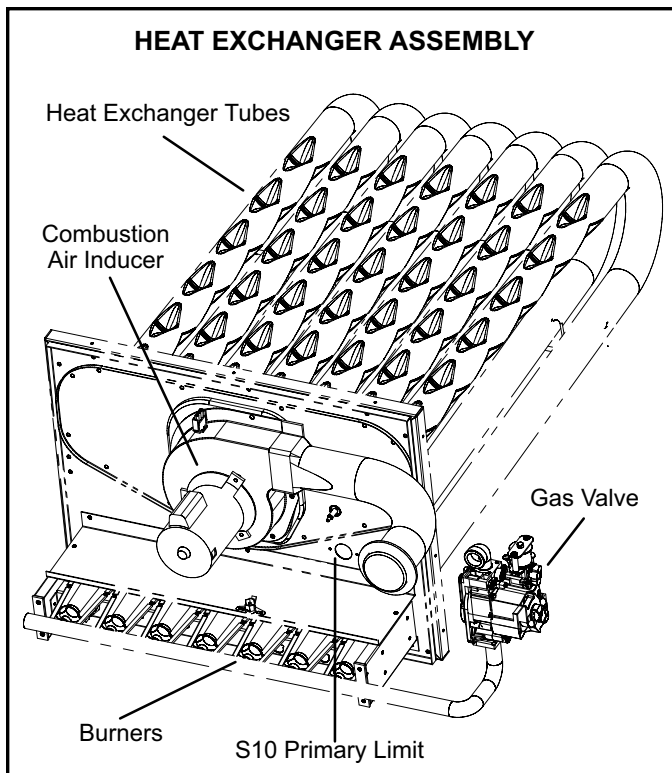


FIGURE 11

2-Burner Box Assembly (Figure 12)

The burner assembly consists of a spark electrode, flame sensing electrode and gas valve. Ignition board A3 controls all functions of the assembly.

Burners

All units use inshot burners. Burners are factory set and do not require adjustment. A peep hole with cover is furnished in the heating access panel for flame viewing. Always operate the unit with the access panel in place.

Burners can be removed individually for service. Burner maintenance and service is detailed in the SERVICE CHECKS section of this manual.

Orifice

Each burner uses an orifice which is matched to the burner input. The orifice is threaded into the burner manifold. The burner is supported by the orifice and will easily slide off for service once the mounting screws are removed from the burners.

NOTE-Do not use thread sealing compound on the orifices. Using thread sealing compound may plug the orifices.

Each orifice and burner are sized specifically to the unit.

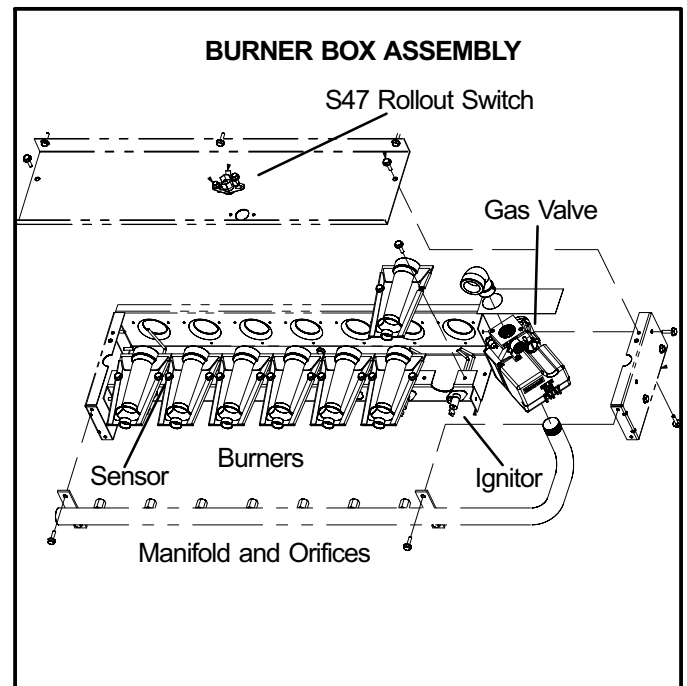


FIGURE 12

3-Primary High Temperature Limit S10

S10 is a SPST N.C. high temperature primary limit for gas heat in TGA036/072 units. S10 is located on the vestibule panel. See figure 11.

Primary limit S10 is wired to the ignition control A3. Its N.C. contacts open to de-energize the ignition control when excessive temperature is reached in the blower compartment. If the limit trips the blower relay coil K3 will be energized by ignition control A3. Limit set points are factory set and cannot be adjusted.

4-Flame Rollout Limit Switch S47

Flame rollout limit switch S47 is a SPST N.C. high temperature limit located just above the burner air intake opening in the burner enclosures (see figure 12). S47 is wired to the ignition control A3. When S47 senses flame rollout (indicating a blockage in the combustion air passages), the flame rollout limit trips, and the ignition control immediately closes the gas valve.

Limit S47 is factory preset to open at $320^{\circ}\text{F} \pm 14^{\circ}\text{F}$ on a temperature rise on all units. All flame rollout limits are manual reset.

5-Combustion Air Prove Switch S18

Prove switch S18 is a SPST N.O. switch located to the right of the induced draft assembly. S18 monitors combustion air inducer operation. Switch S18 is wired to the ignition control A3. The switch closes at *negative* $0.10''\text{W.C.} \pm 0.05''$ ($24.8\text{ Pa} \pm 12.4\text{ Pa}$) on pressure fall. This negative pressure fall and switch actuation allows the ignition sequence to continue (proves, by closing, that the combustion air inducer is operating before allowing the gas valve to open.) The combustion air prove switch is factory set and not adjustable.

6-Combustion Air Inducer B6

Combustion air inducers provide air to the corresponding burners while clearing the combustion chamber of exhaust gases. The inducer begins operating immediately upon receiving a thermostat demand and is de-energized when thermostat demand is satisfied.

The inducer uses a 208/230V single-phase PSC motor and a 5.24 in. x .96in. blower wheel. All motors operate at 3300RPM and are equipped with auto-reset overload protection. Inducers are supplied by various manufacturers. Ratings may vary by manufacturer. Specific inducer electrical ratings can be found on the unit rating plate.

On a heating demand (W1), the ignition control A3 initiates the heating cycle. A3 then allows 30 to seconds for the combustion air inducer to vent exhaust gases from the burners. When the combustion air inducer is purging the exhaust gases, the combustion air prove switch closes, proving that the combustion air inducer is operating before allowing the ignition sequence to continue. When the combustion air prove switch is closed and the delay is over, the ignition control activates the first stage operator of the gas valve (low fire), the

spark and the flame sensing electrode. Sparking stops immediately after flame is sensed or at the end of the eight second trial for ignition.

On two stage natural gas units the inducer will operate on low speed for first stage heat (W1) and ramp up to high speed for second stage heat (W2).

All combustion air inducer motors are sealed and cannot be oiled. The inducer cannot be adjusted but can be disassembled for cleaning.

7-Combustion Air Motor Capacitor C3

The combustion air inducer motors in all TGA units require run capacitors. Capacitor C3 is connected to combustion air inducer B6. Ratings will be on side of capacitor or combustion air motor nameplate.

8-Gas Valves GV1

TGA048, 060 and 072 units are equipped with a single or two stage gas valve. TGA024, 030, 036 units use a single stage gas valve only. Both type valves are manufactured by Honeywell. On a call for first stage heat (low fire), the valve is energized by the ignition control simultaneously with the spark electrode. On a call for second stage heat (high fire), the second stage operator is energized directly from A3. A manual shut-off knob is provided on the valve for shut-off. Manual shut-off knob immediately closes both stages without delay. On both valves first stage (low fire) is quick opening (on and off in less than 3 seconds).

The Honeywell valve is adjustable for both low fire and high fire. Figures 15 and 16 show gas valve components. Table 5 shows factory gas valve regulation for TGA series units.

TABLE 5

| Operating Manifold Pressure | | | |
|-----------------------------|-----------------------------|-------------------------------|--------------------------------|
| Natural | | L.P. | |
| Low | High | Low | High |
| $1.7 \pm 0.3''\text{ W.C.}$ | $3.5 \pm 0.3''\text{ W.C.}$ | $6.5'' \pm 0.3''\text{ W.C.}$ | $10.5'' \pm 0.5''\text{ W.C.}$ |

9-Spark Electrode (Ignitor) Figure 13

An electrode assembly is used for ignition spark. The electrode is mounted through holes under the right most burner location. The electrode tip protrudes into the flame envelope of the adjacent burner. The electrode assembly is fastened to burner supports and can be removed for service without removing any part of the burners.

During ignition, spark travels through the spark electrode (figure 13) and ignites the right burner. Flame travels from burner to burner until all are lit.

The spark electrode is connected to the ignition control by a 8 mm silicone-insulated stranded high voltage wire. The wire uses 1/4" (6.35 mm) female quick connect on both ends of the wire.

NOTE - If electrode wire must be replaced, wire and suppression must be same type cable.

The spark electrode assembly can be removed for inspection by removing the screw securing the electrode assembly and sliding it out of unit.

For proper unit operation, electrodes must be positioned and gapped correctly.

Spark gap may be checked with appropriately sized twist drills or feeler gauges. Disconnect power to the unit and remove electrode assembly. The gap should be between 0.125" ± 0.015" (3.2 mm ± .4 mm). See figure 13.

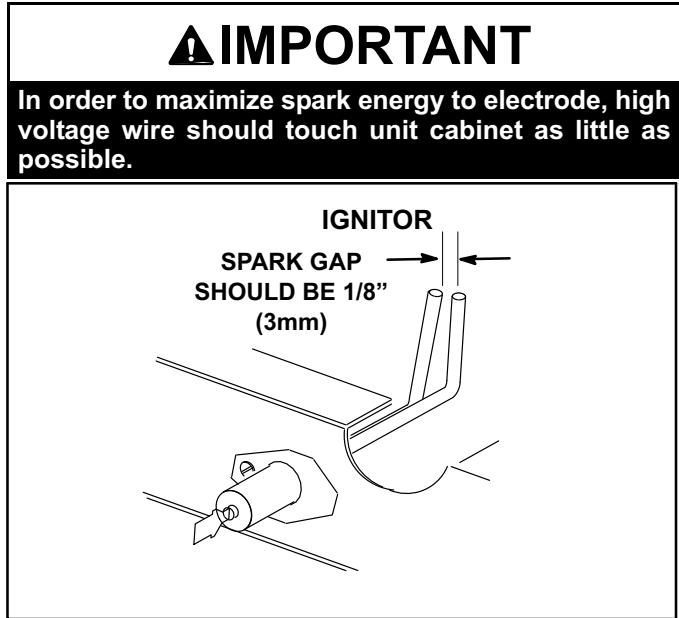


FIGURE 13

10-Flame Sensor Figure 14

A flame sensor is located under the left most side burner. The sensor is mounted through a hole in the burner support and the tip protrudes into the flame envelope of the left most burner. The sensor assembly is fastened to burner supports and can be removed for service without removing any part of the burners.

When flame is sensed by the flame sensor (indicated by microamp signal through the flame) sparking stops immediately or after the eight second trial for ignition. During operation, flame is sensed by current passed along the ground electrode (located on the spark electrode), through the flame and into the sensing electrode. The ignition control allows the gas valve to stay open as long as a flame signal (current passed through the flame) is sensed.

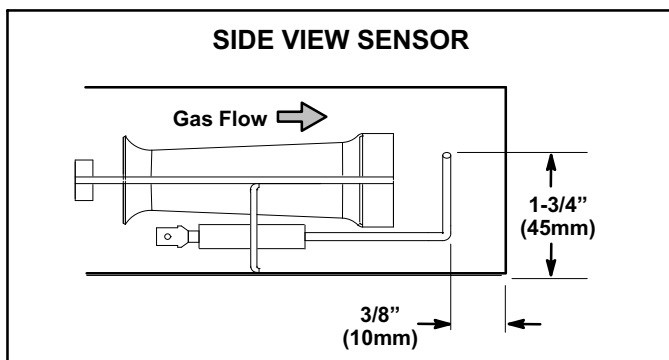


FIGURE 14

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 (T1CURB-AN or C1CURB-AN).


III-START UP - OPERATION


A-Preliminary and Seasonal Checks

- 1- Make sure the unit is installed in accordance with the installation instructions and applicable codes.
- 2- 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.
- 3- Check to ensure that refrigerant lines are in good condition and do not rub against the cabinet or other refrigerant lines.
- 4- 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.
- 5- 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.
- 6- Inspect and adjust blower belt (see section on Blower Compartment - Blower Belt Adjustment).

B-Heating Start up

FOR YOUR SAFETY READ BEFORE LIGHTING

| | |
|---|---|
| ⚠ WARNING | |
|  | Electric shock hazard. Can cause injury or death. Do not use this unit if any part has been under water. Immediately call a qualified service technician to inspect the unit and to replace any part of the control system and any gas control which has been under water. |

| | |
|---|---|
| ⚠ WARNING | |
|  | Danger of explosion. Can cause injury or product or property damage. If overheating occurs or if gas supply fails to shut off, shut off the manual gas valve to the appliance before shutting off electrical supply. |

⚠️ 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.

⚠️ WARNING

SMOKE POTENTIAL

The heat exchanger in this unit could be a source of smoke on initial firing. Take precautions with respect to building occupants and property. Vent initial supply air outside when possible.

BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

The gas valve may be equipped with either a gas control lever or gas control knob. Use only your hand to push the lever or turn the gas control knob. Never use tools. If the the lever will not move or the knob will not push in or turn by hand, do not try to repair it. Call a qualified service technician. Force or attempted repair may result in a fire or explosion.

⚠️ WARNING



Danger of explosion. Can cause injury or death. Do not attempt to light manually. Unit has a direct spark ignition system.

This unit is equipped with an automatic spark ignition system. There is no pilot. In case of a safety shutdown, move thermostat switch to **OFF** and return the thermostat switch to **HEAT** to reset ignition control.

A-Placing Unit In Operation

⚠️ WARNING



Danger of explosion and fire. Can cause injury or product or property damage. You must follow these instructions exactly.

Gas Valve Operation (figures 15 and 16)

- 1- Set thermostat to lowest setting.
- 2- Turn off all electrical power to appliance.

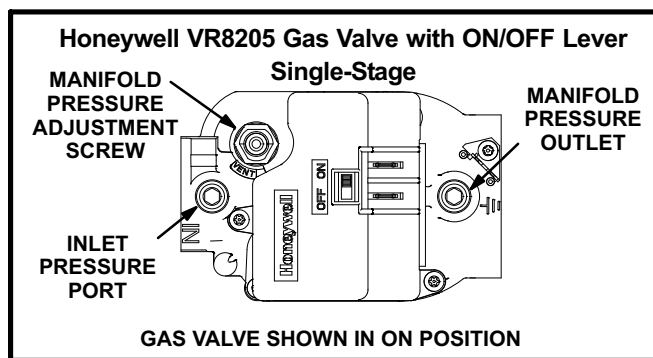


FIGURE 15

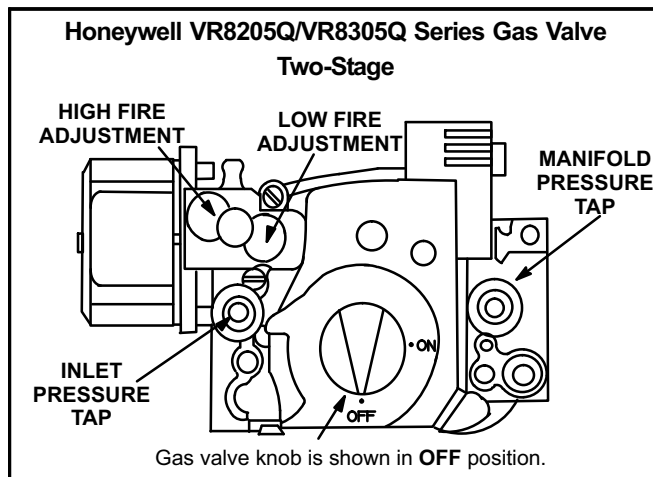





FIGURE 16

- 3- This appliance is equipped with an ignition device which automatically lights the burner. Do **not** try to light the burner by hand.
 - 4- Open or remove the heat section access panel.
 - 5- *Honeywell VR8205 Gas Valve with ON/OFF Lever* - Switch gas valve lever to **OFF**. See figure 15.
Honeywell VR8205 Gas Valve with Knob - Turn knob on gas valve clockwise  to **OFF**. Do not force. See figure 16.
 - 6- *Honeywell VR8205 Gas Valve with ON/OFF Lever* - Switch gas valve lever to **ON**. See figure 15.
Honeywell VR8205 Gas Valve with Knob - Turn knob on gas valve counterclockwise  to **ON**. Do not force. See figure 16.
 - 7- Close or replace the heat section access panel.
 - 8- Turn on all electrical power to appliance.
 - 9- Set thermostat to desired setting.
- NOTE - When unit is initially started, steps 1 through 9 may need to be repeated to purge air from gas line.*
- 10- If the appliance will not operate, follow the instructions "Turning Off Gas to Appliance" and call your service technician or gas supplier.

Turning Off Gas to Unit

- 1- If using an electromechanical thermostat, set to the lowest setting.
- 2- Before performing any service, turn off all electrical power to the appliance.

- 3- Open or remove the heat section access panel.
- 4- *Honeywell VR8205 Gas Valve with ON/OFF Lever* - Switch gas valve lever to **OFF**.
Honeywell VR8205 Gas Valve with Knob - Turn knob on gas valve clockwise  to **OFF**. Do not force.
- 5- Close or replace the heat section access panel.

C-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.

- 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.

D-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 6 through 14 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 15. An approach temperature greater than value shown indicates an undercharge. An approach temperature less than value shown indicates an overcharge.

**TABLE 6
TGA024S 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 7
TGA030S 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 8
TGA036B 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 9
TGA036S 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 10
TGA048B 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 11
TGA048S 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 12
TGA060B 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 13
TGA060S 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 14
TGA 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 6 through 14. The approach method is not valid for grossly over or under-charged systems.

**TABLE 15
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-Heating System Service Checks

All TGA units are C.S.A. design certified without modification.

Before checking piping, check with gas company or authorities having jurisdiction for local code requirements. Refer to the TGA Installation instruction for more information.

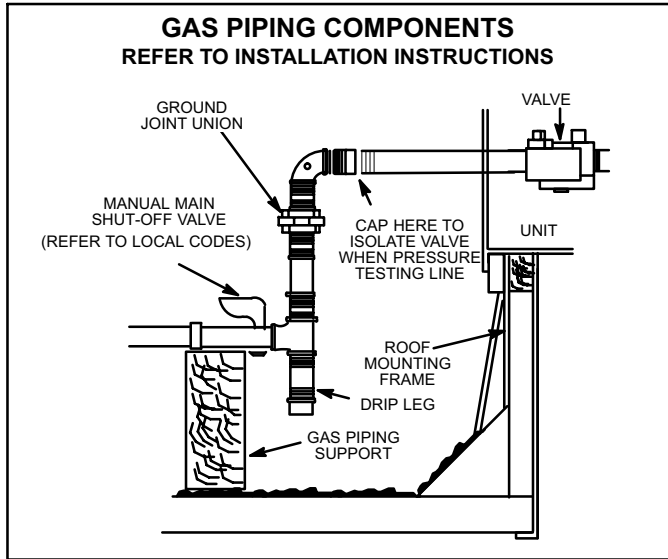


FIGURE 17

1-Gas Piping

Gas supply piping must not allow more than 0.5"W.C. (124.3 Pa) drop in pressure between the gas meter and the unit. Supply gas pipe must not be smaller than the unit gas connection. Refer to installation instructions for details.

2-Testing Gas Piping

NOTE-In case emergency shutdown is required, turn off the main manual shut-off valve and disconnect the main power to the unit. These controls should be properly labeled by the installer.

When pressure testing gas lines, the gas valve must be disconnected and isolated. **Gas valves can be damaged if subjected to more than 0.5 psig [14"W.C. (3481 Pa)].** See figure 17.

When checking piping connection for gas leaks, use the preferred means. Common kitchen detergents can cause harmful corrosion on various metals used in gas piping. The use of specialty Gas Leak Detector is strongly recommended.

Do not use matches, candles, flame or any other source of ignition to check for gas leaks.

3-Testing Gas Supply Pressure

When testing gas supply pressure, connect test gauge to the inlet pressure tap located on unit gas valve GV1. Test supply gas pressure with unit firing at maximum rate (both stages energized). Make sure the reading falls within the range of the following values. Low pressure may result in erratic operation or "underfire." High pressure can result in permanent damage to the gas valve or "overfire." For natural gas units, operating pressure at the unit gas connection must be between 4.5"W.C. and 10.5"W.C. For L.P. gas units, operating pressure at the unit gas connection must be between 10.5"W.C. and 13.0"W.C.

On multiple unit installations, each unit should be checked separately while operating at maximum rate, beginning with the one closest to the supply gas main and progressing to the one furthest from the main. Multiple units should also be tested with and without the other units operating. Supply pressure must fall within the range listed in the previous paragraph.

4-Check and Adjust Manifold Pressure

After line pressure has been checked and adjusted, check manifold pressure. Move test gauge to the outlet pressure tap located on unit gas valve GV1. See figure 15 or 16 for location of pressure tap on the gas valve.

The manifold pressure is factory set and should not require adjustment. See table 5. If manifold pressure is incorrect and no other source of improper manifold pressure can be found, the valve must be replaced. See figure 15 or 16 for location of gas valve (manifold pressure) adjustment screw.

All gas valves are factory regulated. The gas valve should completely and immediately cycle off in the event of gas or power failure. The manual shut-off knob can be used to immediately shut off gas supply.

⚠ CAUTION

For safety, connect a shut-off valve between the manometer and the gas tap to permit shut off of gas pressure to the manometer.

Manifold Adjustment Procedure

- 1- Connect test gauge to the outlet pressure tap on the gas valve. Start the unit (call for second stage heat) and allow five minutes for the unit to reach steady state.
- 2- While waiting for the unit to stabilize, notice the flame. The flame should be stable without flashback and should not lift from the burner heads. Natural gas should burn basically blue with some clear streaks. L.P. gas should burn mostly blue with some clear yellow streaks.
- 3- After allowing the unit to stabilize for five minutes, record the manifold pressure and compare to the values given in table 5.

5-Proper Gas Flow

Furnace should operate at least 5 minutes before checking gas flow. Determine time in seconds for two revolutions of gas through the meter. (Two revolutions assures a more accurate time.) Divide by two and compare to time in table 16. Seconds in table 16 are based on a 1 cu.ft. dial and gas valve of 1000 btu/ft³ for natural and 2500 btu/ft³ for LP. Adjust manifold pressure on gas valve to match time needed.

NOTE - To obtain accurate reading, shut off all other gas appliances connected to meter.

TABLE 16

| Unit Input Rate | Seconds for Natural | Seconds for Propane |
|-----------------|---------------------|---------------------|
| 65,000 | 55 | 138 |
| 105,000 | 34 | 86 |
| 150,000 | 24 | 60 |

IMPORTANT

Disconnect heating demand as soon as an accurate reading has been obtained.

6-Heat Exchanger

To Access or Remove Heat Exchanger From Unit:

- 1- Turn off gas and electric power.
- 2- Remove access panel(s) and unit center mullion.
- 3- Remove gas valve, manifold assembly and burners.
- 4- Remove combustion air inducer. Pay careful attention to the order in which gaskets and orifice are removed.
- 5- Support heat exchanger (to prevent it from falling when final screws are removed.)
- 6- Remove screws supporting heat exchanger.
- 7- To install heat exchanger, reverse procedure. Be sure to secure all wires and check plumbing and burner plate for airtight seal. Screws must be torqued to 35 in.-lbs. to ensure proper operation.

7-Flame Sensing

Flame current is an electrical current which passes from the ignition control through the sensor electrode during unit operation. The current passes from the sensor through the flame to the ground electrode (located on the flame electrode) to complete a safety circuit. The electrodes should be located so the tips are at least 1/2" (12.7 mm) inside the flame envelope. Do not bend electrodes. To measure flame current, follow the procedure on the following page:

NOTE-Electrodes are not field adjustable. Any alterations to the electrode may create a hazardous condition that can cause property or personal injury.

- 1- Disconnect power to unit.
- 2- Remove lead from sensing electrode and install a 0-50DC microamp meter in series between the sensing electrode and the sensing lead.
- 3- Reconnect power and adjust thermostat for heating demand.
- 4- When flame is established, microamp reading should be 0.5 to 1.0. Do not bend electrodes.
Drop out signal is .09 or less.
- 5- Disconnect power to unit before disconnecting meter. Make sure sensor wire is securely reconnected before reconnecting power to unit.

NOTE-If the meter scale reads 0, the leads are reversed. Disconnect power and reconnect leads for proper polarity.

B-Cooling System Service Checks

TGA 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 6 through 14.

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 17 for correct filter size. Refer to local codes or appropriate jurisdiction for approved filters.

TABLE 17

| 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-Lubrication

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

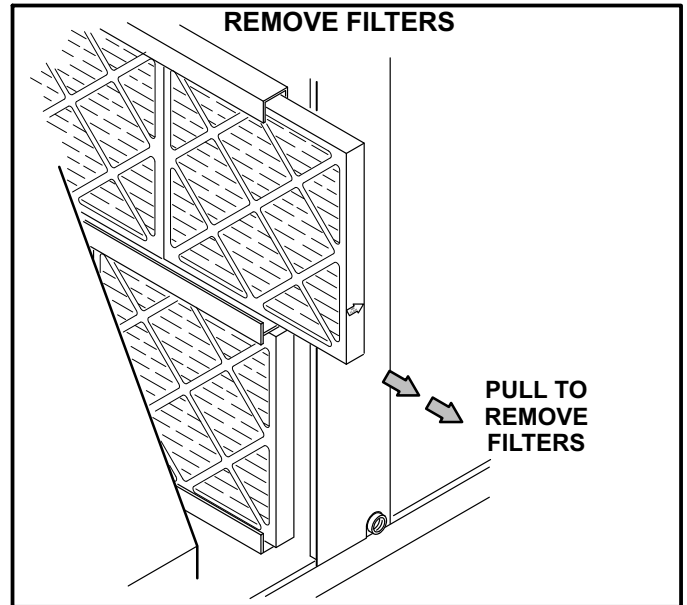


FIGURE 18

C-Burners

Periodically examine burner flames for proper appearance during the heating season. Before each heating season examine the burners for any deposits or blockage which may have occurred.

Clean burners as follows:

- 1- Turn off both electrical power and gas supply to unit.
- 2- Remove burner compartment access panel.
- 3- Remove top burner box panel.
- 4- Remove two screws securing burners to burner support and lift the burners from the orifices. See figure 12. Clean as necessary.

| | |
|---|---|
| ⚠ WARNING | |
|  | Danger of explosion. Can cause injury or death. Do not overtighten main burner mounting screws. Snug tighten only. |

D-Combustion Air Inducer

A combustion air proving switch checks combustion air inducer operation before allowing power to the gas controller. Gas controller will not operate if inducer is obstructed.

Under normal operating conditions, the combustion air inducer wheel should be checked and cleaned prior to the heating season. However, it should be examined periodically during the heating season to establish an ideal cleaning schedule.

Clean combustion air inducer as follows:

- 1- Shut off power supply and gas to unit.
- 2- Remove the mullion on the right side of the heat section.
- 3- Disconnect pressure switch air tubing from combustion air inducer port.
- 4- Remove and retain screws securing combustion air inducer to flue box. Remove vent connector. See figure 11.
- 5- Clean inducer wheel blades with a small brush and wipe off any dust from housing. Take care not to damage exposed fan blades. Clean accumulated dust from front of flue box cover.
- 6- Return combustion air inducer motor and vent connector to original location and secure with retained screws. It is recommended that gaskets be replaced during reassembly.
- 7- Replace mullion.
- 8- Clean combustion air inlet louvers on heat access panel using a small brush.

E-Flue Passageway and Flue Box

Remove flue box cover only when necessary for equipment repair. Clean inside of flue box cover and heat exchanger tubes with a wire brush when flue box cover has to be removed. Install a new flue box cover gasket and replace cover. Make sure edges around flue box cover are tightly sealed.

F-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.

G-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 19. Flush coils with water following cleaning.

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

H-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.

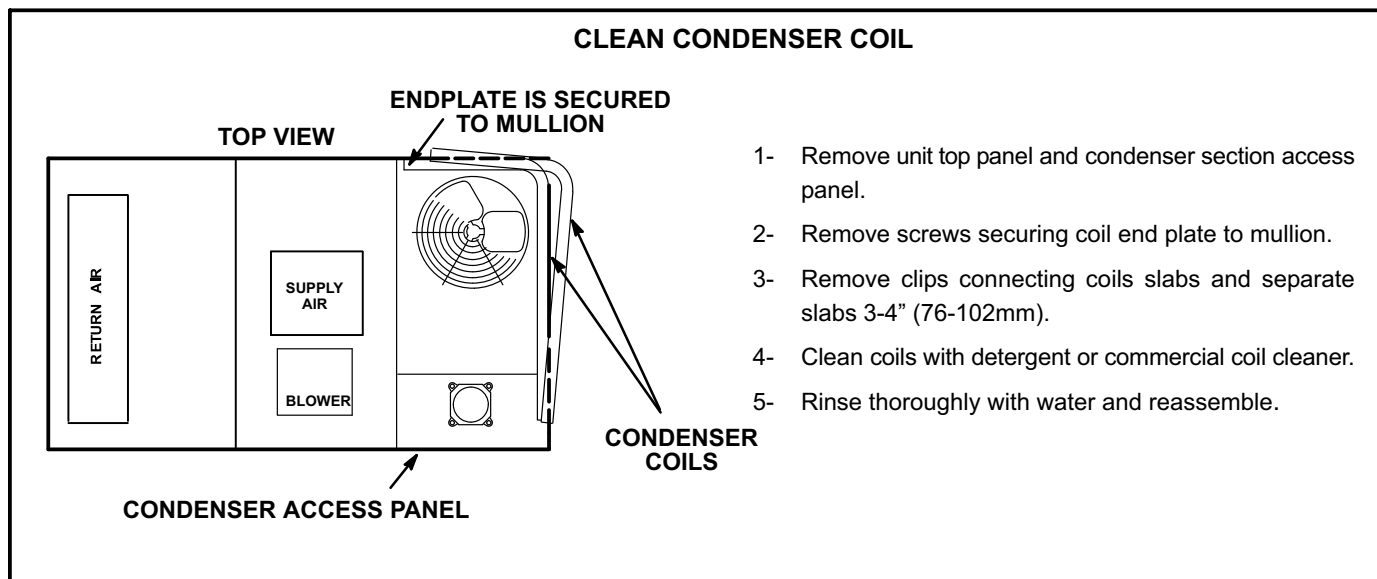


FIGURE 19

VII-ACCESSORIES

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

A-T1CURB

When installing the TGA 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 TGA 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 20. 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 21. Refer to the roof mounting frame installation instructions for proper plenum construction and attachment.

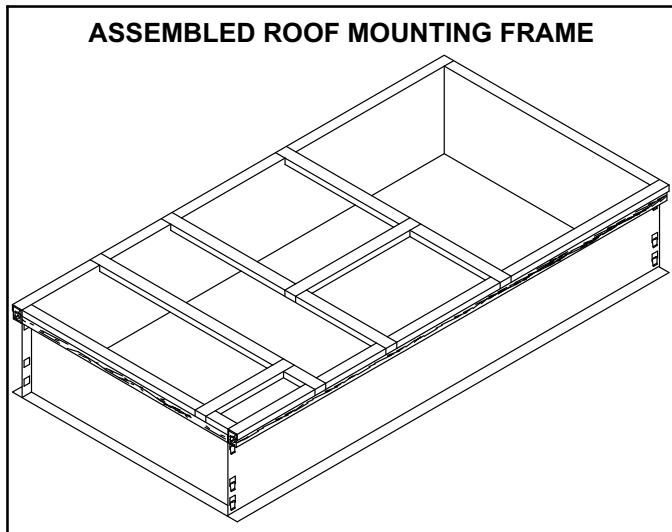


FIGURE 20

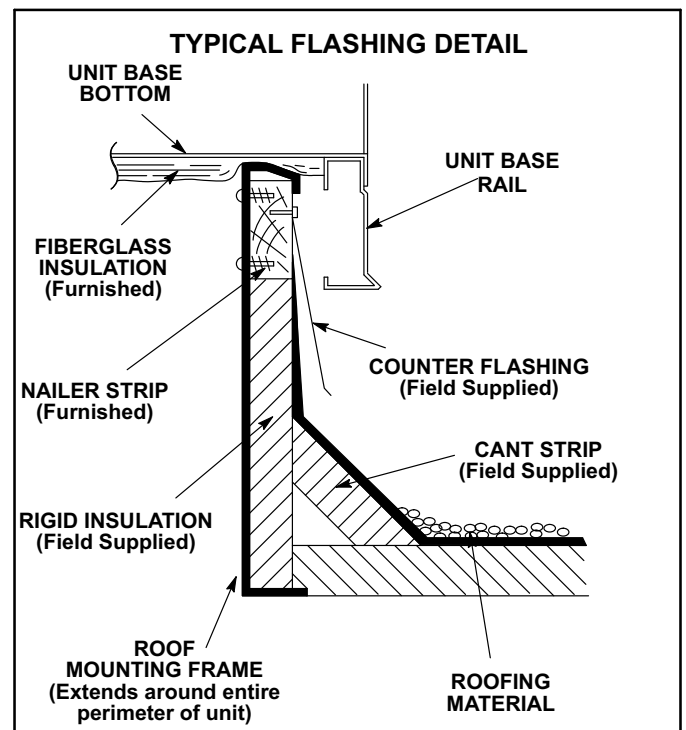


FIGURE 21

B-Transitions

Optional supply/return transitions T1TRAN10AN1 is available for use with the TGA 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 T1CURB 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 TGA 2, 2.5, 3, 4 and 5 ton unit and T1DAMP11N-1 is available for the TGA 6 ton units. Both sets include the outdoor air hood. A motorized kit (T1DAMP21AN1) can be ordered separately for all TGA 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 22). 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.

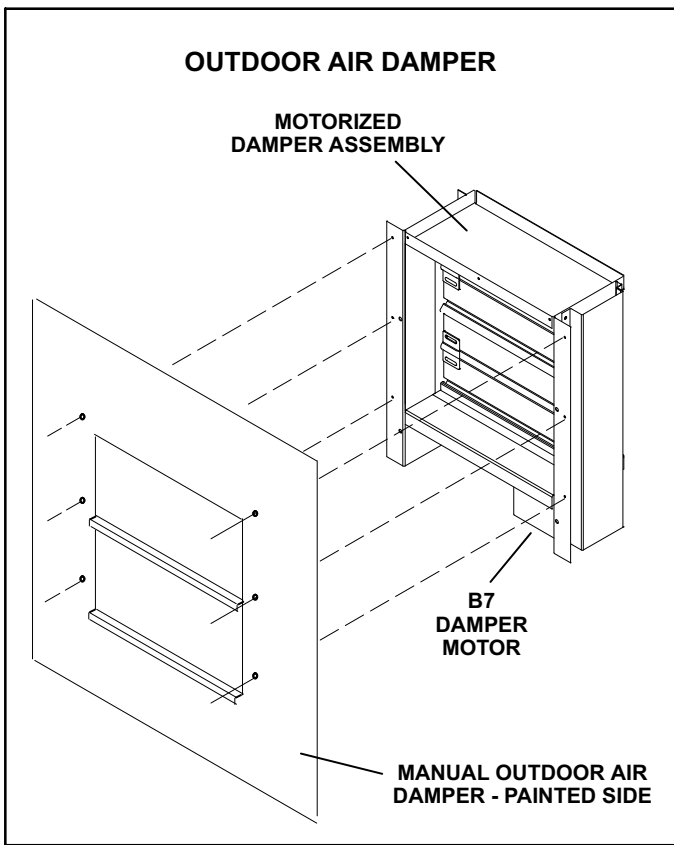


FIGURE 22

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 TGA 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 23. The A7 enthalpy sensor is located on the division panel between horizontal supply and return air sections.

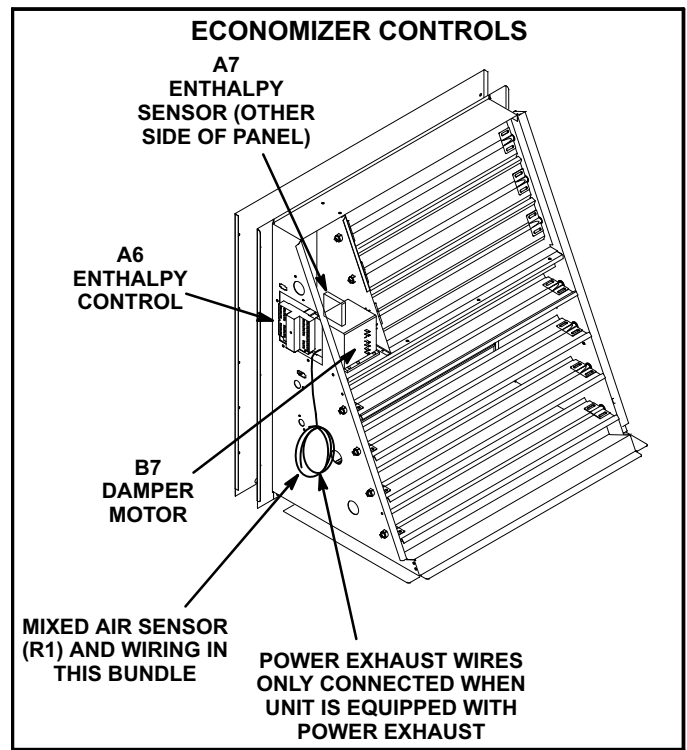


FIGURE 23

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 enthalpy, outdoor air is used for free cooling.

Mixed air sensor (R1) may be 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 setpoint requiring more fresh air. See figure 24.

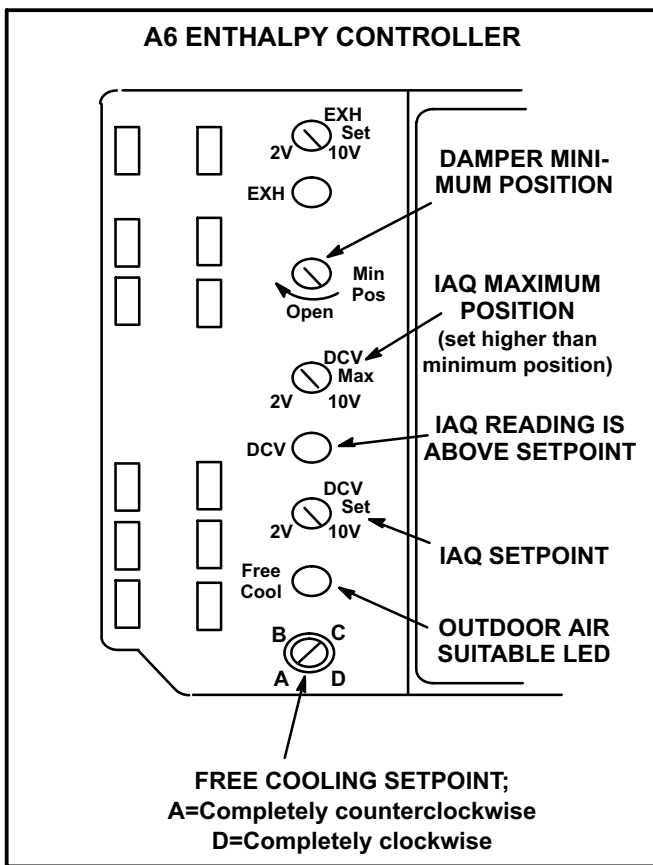


FIGURE 24

Free Cooling Setpoint

Outdoor air is considered suitable when temperature and humidity are less than the free cooling setpoints shown in table 18. Setting A is recommended. See figure 24. 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 18
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 R and OC 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 TB1 terminals R and OC 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.

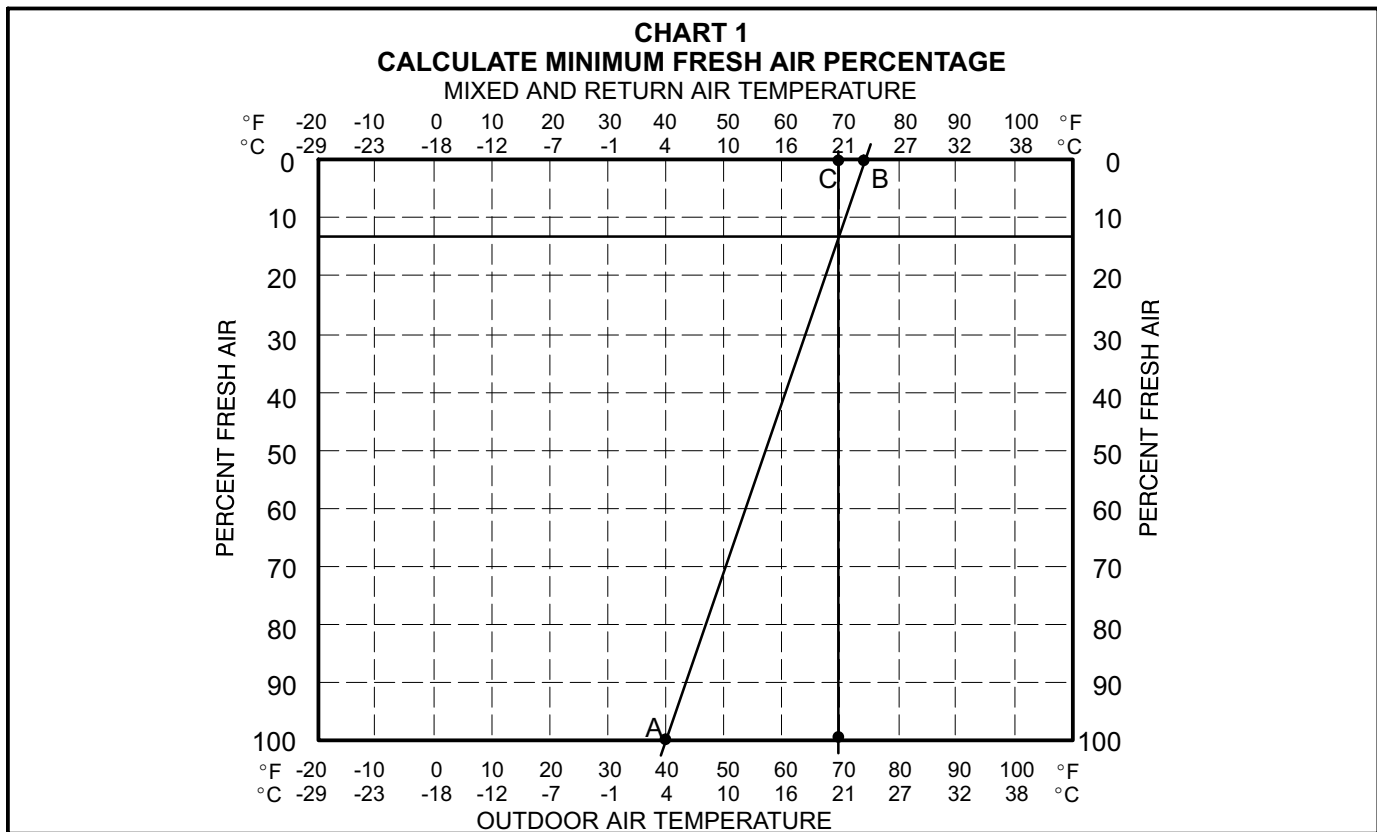
DCV Set and Max Settings

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 24.

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 24.

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 19 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 25. Manual damper fresh air intake percentage can be determined in the same manner.

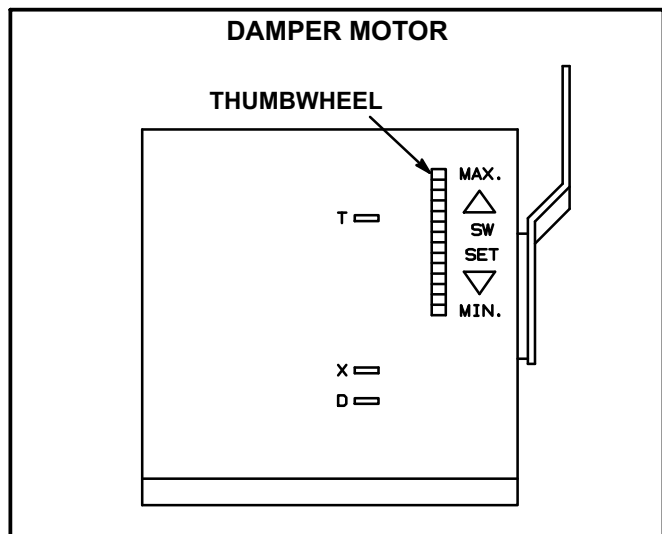


FIGURE 25

**TABLE 19
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.

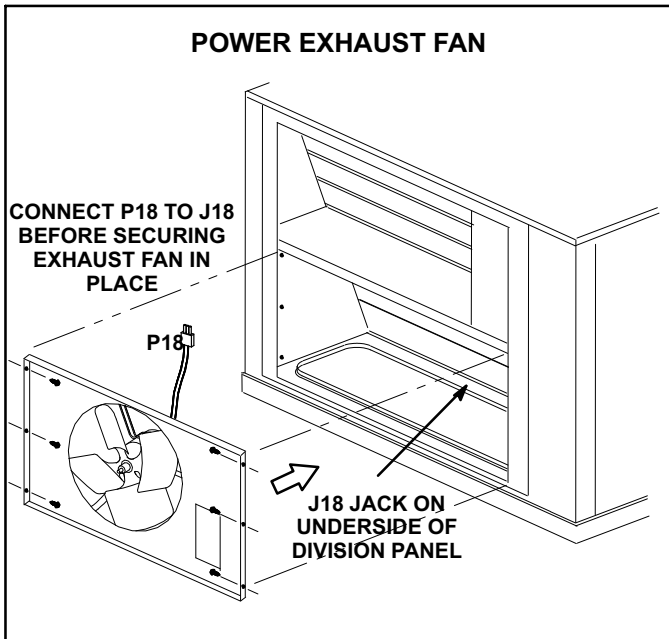


FIGURE 26

**F-Power Exhaust Relay K65
(power exhaust units)**

Power exhaust relay K65 is a DPDT relay with a 24VAC coil. K65 is used in all TGA 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.

G-Power Exhaust Fans

T1PWRE10A available for TGA 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 26 and installation instructions for more detail.

H-Optional Cold Weather Kit

Electric heater is available to automatically control the minimum temperature in the gas burner compartment. Heater is C.S.A. certified to allow cold weather operation of unit down to -60°F (-50°C).

The kit includes the following parts:

- 1- The strip heater (HR6) is located as close as possible to the gas valve. The strip heater is rated at 500 Watts
- 2- A thermostat mounting box is installed on the wall of the compressor compartment. Included in the box are the following thermostat switches:
 - a - Thermostat switch (S59) is an auto-reset SPST N.C. switch which opens on a temperature drop. The switch is wired in series with 24v power and the combustion air blower switch. When the temperature drops below -30°F (-35°C) the switch opens and the gas heat section is de-energized. The switch automatically resets when the heating compartment temperature reaches -10°F (-12°C).
 - b - Thermostat switch (S60) is an auto-reset SPST N.C. switch which opens on a temperature rise. The switch is wired in series with HR6. When the temperature rises above 20°F (-7°C) the switch opens and the electric heater is de-energized. The switch automatically resets when the heating compartment temperature reaches -10°F (23.3°C).
 - c - Thermostat switch (S61) is an auto-reset SPST N.O. switch which closes on a temperature drop. The switch is wired in series with HR6. When temperature drops below 20°F (-7°C) the switch closes and electric heater is energized. The switch automatically opens when heating compartment temperature reaches 70°F (21° C).

I-Control Systems

Three different types of control systems may be used with the TGA series units. All thermostat wiring is connected to TB1 located in the control box. Each thermostat has additional control options available. See thermostat installation instructions for more detail.

- 1- Electro-mechanical thermostat (13F06)
The electro-mechanical thermostat is a two stage heat / two stage cool thermostat with dual temperature levers. A non-switching or manual system switch subbase may be used.
- 2- Electronic thermostat (see price book)
Any two stage heat / two stage cool electronic thermostat may be used.
- 3- Honeywell T7300 thermostat (60L59)
The Honeywell T7300 thermostat is a programmable, internal or optional remote temperature sensing thermostat. The T7300 provides occupied and unoccupied changeover control.

J-Smoke Detectors A17 and A64

Photoelectric smoke detectors are a field installed option. The smoke detectors can be installed in the supply air duct (A64), return air section (A17), or in both the supply duct and return air section.

K-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.

L-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.

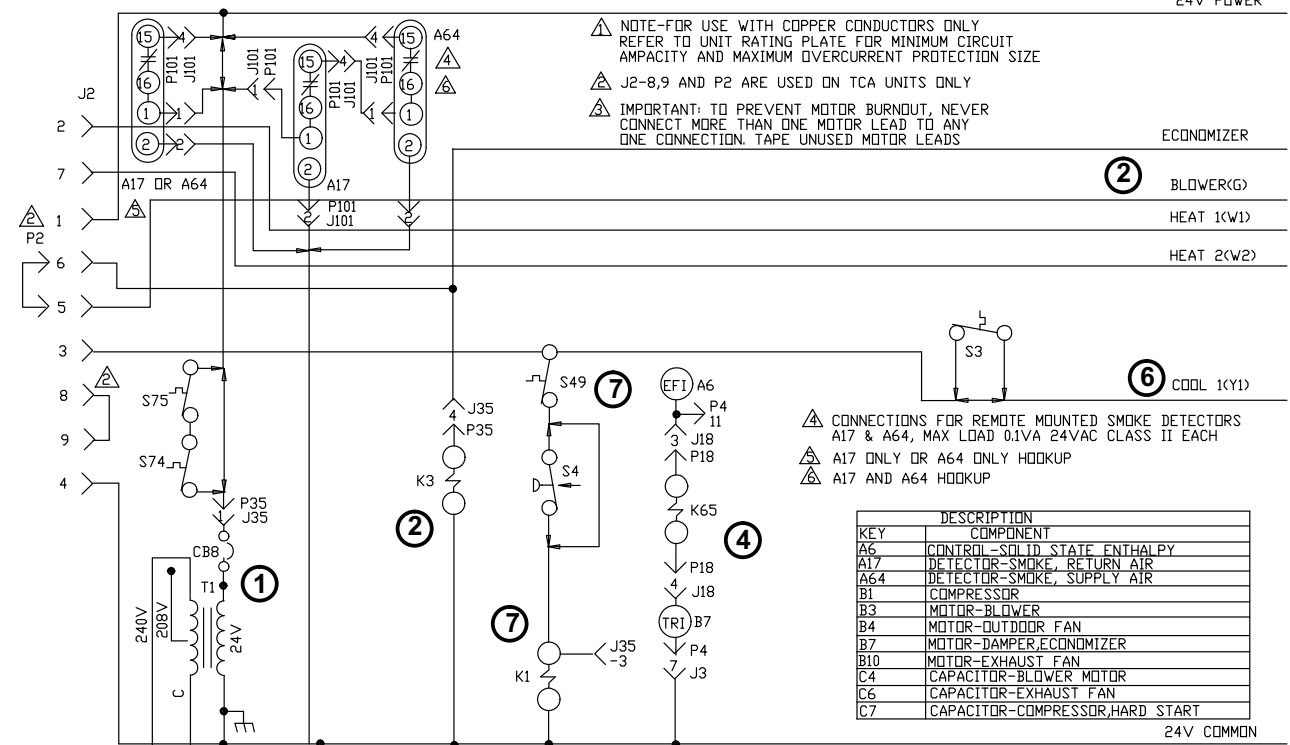
M-LP / Propane Kit

All units require a natural to LP /propane kit. The kit for single stage units include one LP spring , seven burner orifices, and three stickers. Two stage kits include the same but has a prove switch used to lock out first stage on the combustion air inducer. For more detail refer to the natural to LP gas changeover kit installation instructions.

VIII-Wiring Diagrams and Sequence of Operation

TGA024/060 P VOLTAGE UNIT DIAGRAM

24V POWER



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

⚠ A17 ONLY OR A64 ONLY HOOKUP

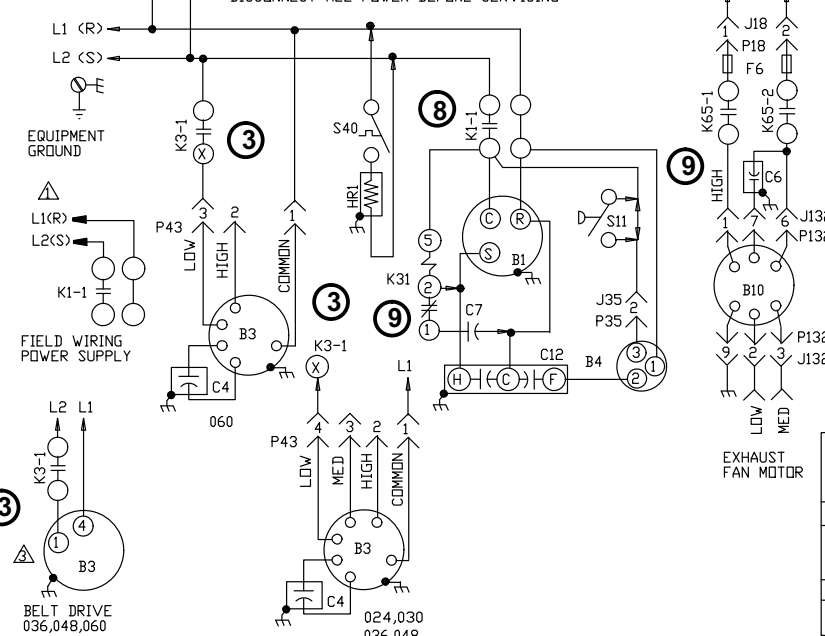
⚠ A17 AND A64 HOOKUP

| 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 |
| C4 | CAPACITOR-BLOWER MOTOR |
| C6 | CAPACITOR-EXHAUST FAN |
| C7 | CAPACITOR-COMPRESSOR,HARD START |

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



| | |
|---------|---|
| C12 | CAPACITOR-DUAL |
| 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 |
| K31 | RELAY-HARD START KIT |
| 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-LDW PRESS,LOW AMB KIT |
| S40 | THERMOSTAT-CRANKCASE |
| S49 | SWITCH-FREEZESTAT |
| S74 | SWITCH-FRESTAT 1 |
| S75 | SWITCH-FRESTAT 2 |
| T1 | TRANSFORMER-CONTROL |

← DENOTES OPTIONAL COMPONENTS
— LINE VOLTAGE FIELD INSTALLED

| | | |
|----------------------------------|--------------|------|
| WIRING DIAGRAM | | 5/07 |
| COMBINATION PACKAGED/ROOFTOP | | |
| TCA, TGA-024,030,036,048,060-1-P | | |
| 208-230/60/1 | | |
| HEAT/COOL SECTION B33 | | |
| Supersedes Form No. | New Form No. | |
| | 535,045W | |

© 2007

Litho U.S.A.

TGA036/072 Y VOLTAGE UNIT DIAGRAM

24V POWER

- ⚠ NOTE-FOR USE WITH COPPER CONDUCTORS ONLY
REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT
AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE
- ⚠ S40 IS NOT REQUIRED ON 072 UNITS
- ⚠ IMPORTANT: TO PREVENT MOTOR BURNOUT, NEVER
CONNECT MORE THAN ONE MOTOR LEAD TO ANY
ONE CONNECTION. TAPE UNUSED MOTOR LEADS

ECONOMIZER

- ② BLOWER(G)
- HEAT 1(W1)
- HEAT 2(W2)

- ⑥ COOL 1(Y1)

- ⚠ CONNECTIONS FOR REMOTE MOUNTED SMOKE DETECTORS
A17 & A64, MAX LOAD 0.1VA 24VAC CLASS II EACH
- ⚠ J2-8,9 AND P2 ARE USED ON TCA UNITS ONLY
- ⚠ 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 |
| C1 | CAPACITOR-OUTDOOR FAN |
| C4 | CAPACITOR-BLOWER MOTOR |

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

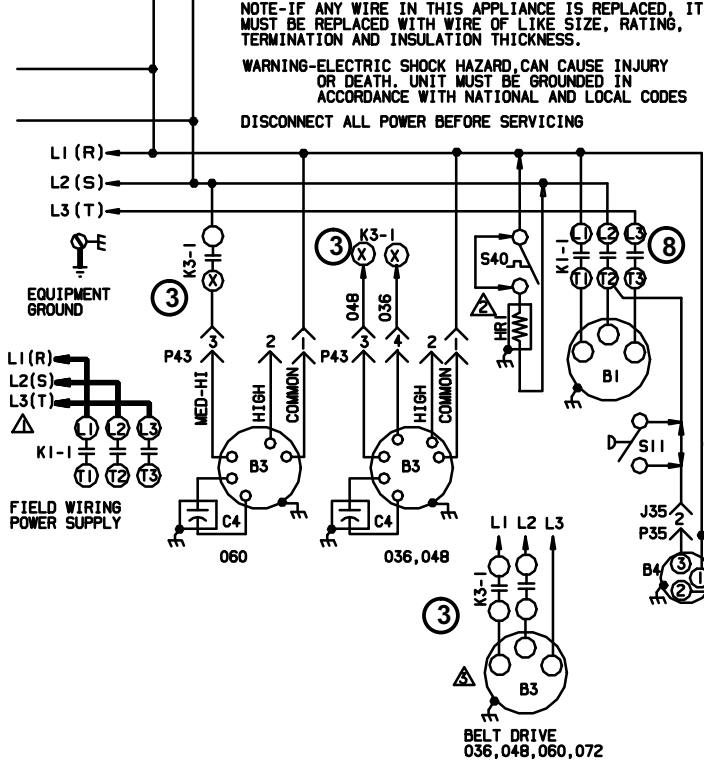
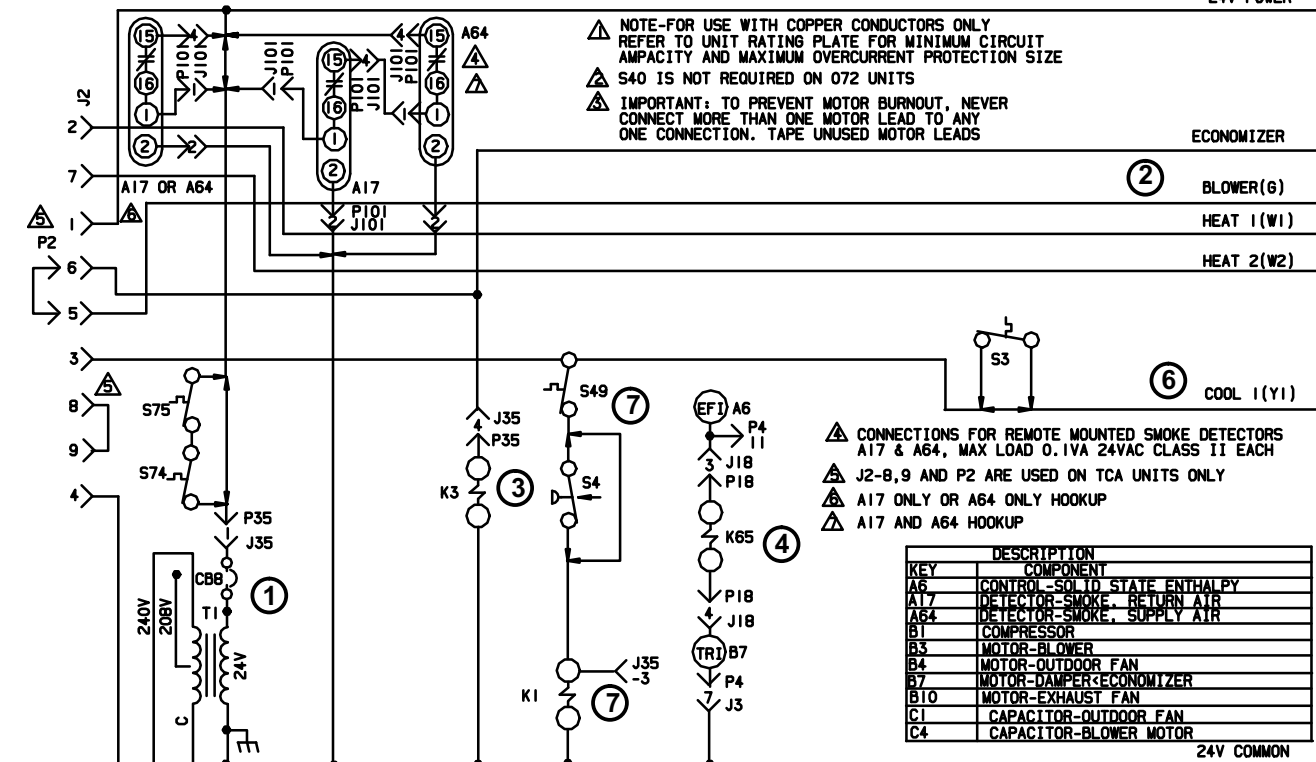
| | |
|---------|--|
| C6 | CAPACITOR-EXHAUST FAN |
| C8B | CIRCUIT BREAKER-TRANSFORMER T1 |
| F6 | FUSE-EXHAUST FAN |
| HRI | HEATER COMPRESSOR |
| J2 | JACK-HEAT |
| J3 | JACK-UNIT ECONOMIZER |
| J18 | JACK-EXHAUST FAN |
| J35 | JACK-TEST |
| J132 | JACK-BLOWER EXHAUST FAN MOTOR |
| K1-1 | CONTACTOR-COMPRESSOR |
| 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 /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 |

← 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 |

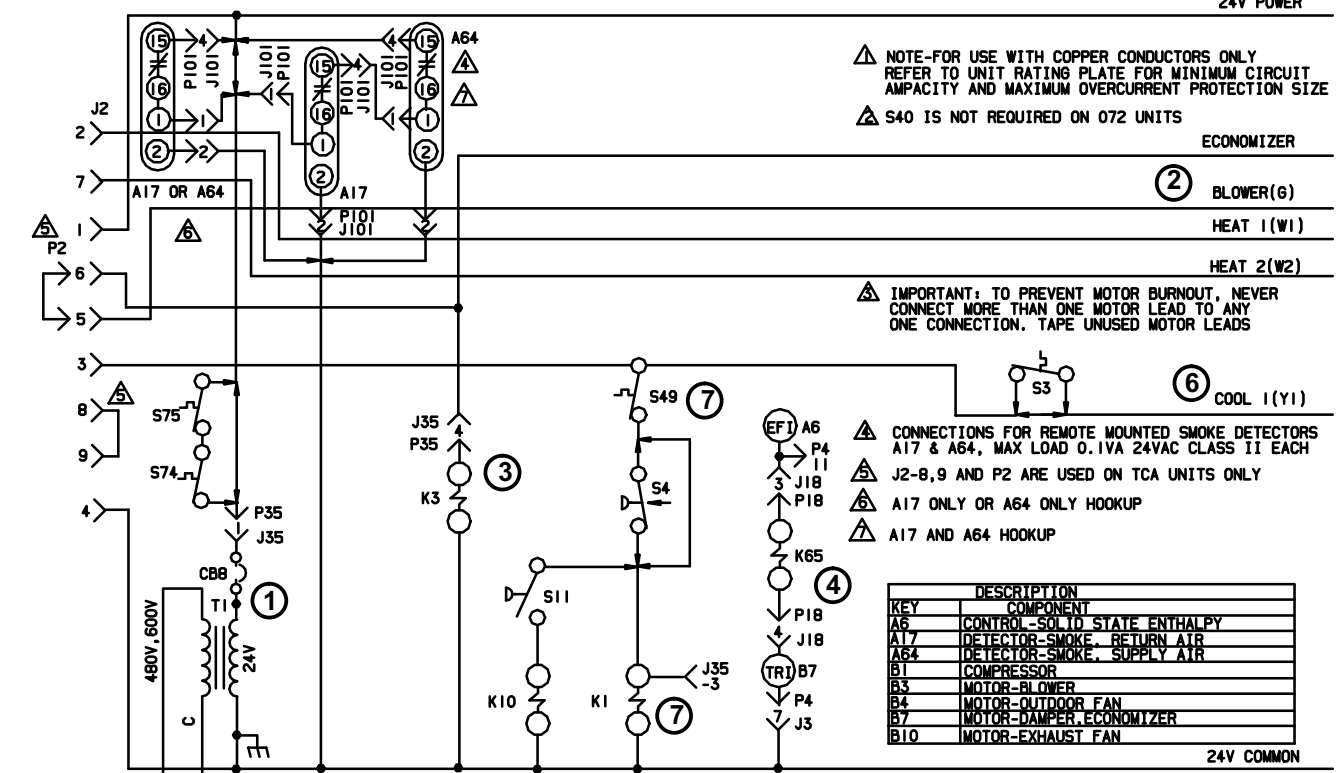
©2006

Litho U.S.A.



TGA036/072 G & J VOLTAGE UNIT DIAGRAM

24V POWER



⚠ NOTE-FOR USE WITH COPPER CONDUCTORS ONLY REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE
 ⚠ S40 IS NOT REQUIRED ON 072 UNITS

ECONOMIZER

② BLOWER(G)

HEAT 1(W1)

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(Y1)

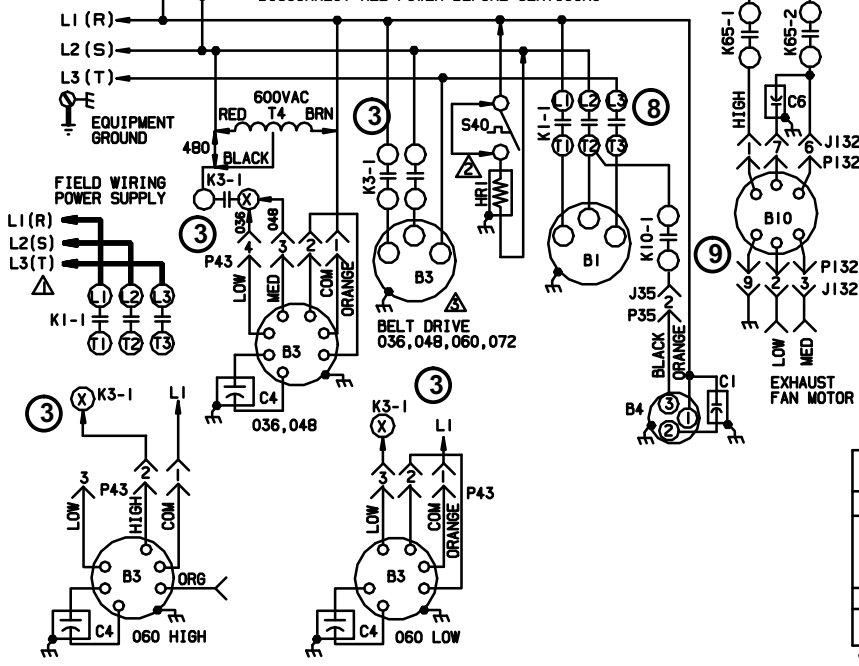
⚠ CONNECTIONS FOR REMOTE MOUNTED SMOKE DETECTORS A17 & A64, MAX LOAD 0.1VA 24VAC CLASS II EACH
 ⚠ J2-8,9 AND P2 ARE USED ON TCA UNITS ONLY
 ⚠ A17 ONLY OR A64 ONLY HOOKUP
 ⚠ A17 AND A64 HOOKUP

| 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



| KEY | DESCRIPTION |
|---------|--|
| 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

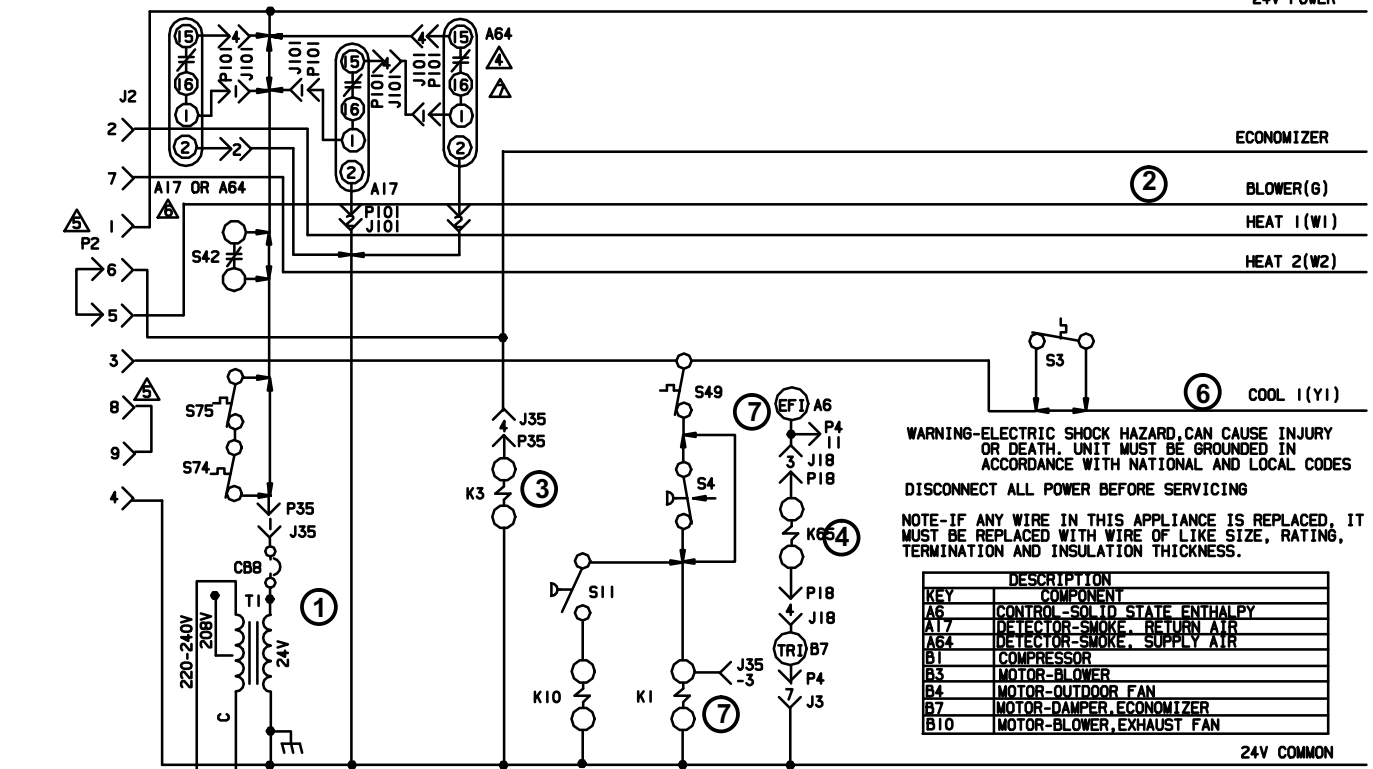
| | |
|------------------------------------|--------------|
| WIRING DIAGRAM 1/06 | |
| COMBINATION PACKAGED/ROOFTOP | |
| TCA, TGA-036, 048, 060, 072-1-G, J | |
| HEAT/COOL SECTION B33 | |
| Supersedes Form No. | New Form No. |
| | 535, 043W |

©2006

LiThe U.S.A.

TGA036/072 M VOLTAGE UNIT DIAGRAM

24V POWER



- ECONOMIZER
- 2 BLOWER(G)
- HEAT 1(W1)
- HEAT 2(W2)
- 6 COOL 1(Y1)

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.

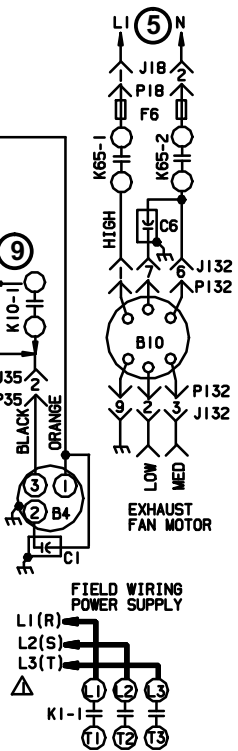
| KEY | DESCRIPTION |
|-----|------------------------------|
| A6 | CONTROL-SOLID STATE ENTHALPY |
| A7 | DETECTOR-SMOKE-RETURN AIR |
| A64 | DETECTOR-SMOKE-SUPPLY AIR |
| B1 | COMPRESSOR |
| B3 | MOTOR-BLOWER |
| B4 | MOTOR-OUTDOOR FAN |
| B7 | MOTOR-DAMPER, ECONOMIZER |
| B10 | MOTOR-BLOWER, EXHAUST FAN |

24V COMMON

| | |
|----------|--|
| C1 | CAPACITOR-OUTDOOR FAN |
| C6 | CAPACITOR-EXHAUST FAN |
| CB9 | CIRCUIT BREAKER-TRANSFORMER T1 |
| F6 | FUSE-EXHAUST FAN |
| HRI | HEATER COMPRESSOR |
| J2 | JACK-HEAT |
| J3 | JACK-UNIT ECONOMIZER |
| J35 | JACK-TEST |
| J18 | JACK-EXHAUST FAN |
| 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 |
| 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

- ⚠ NOTE-FOR USE WITH COPPER CONDUCTORS ONLY REFER TO UNIT RATING PLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM OVERCURRENT PROTECTION SIZE
- ⚠ S40 IS NOT REQUIRED ON 072 UNITS
- ⚠ IMPORTANT: TO PREVENT MOTOR BURNOUT, NEVER CONNECT MORE THAN ONE MOTOR LEAD TO ANY ONE CONNECTION. TAPE UNUSED MOTOR LEADS
- ⚠ CONNECTIONS FOR REMOTE MOUNTED SMOKE DETECTORS A17 & A64, MAX LOAD 0.1VA 24VAC CLASS II EACH
- ⚠ J2-8,9 AND P2 ARE USED ON TCA UNITS ONLY
- ⚠ A17 ONLY OR A64 ONLY HOOKUP
- ⚠ A17 AND A64 HOOKUP



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

©2006

Litho U.S.A.

TGA024/072 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. freeze stat 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***

Optional N.O. low ambient switch S11 closes to energize condenser fan B4 while simultaneously optional start relay K31 is energized to help in start up of compressor B1.

Three Phase Y Voltage Units

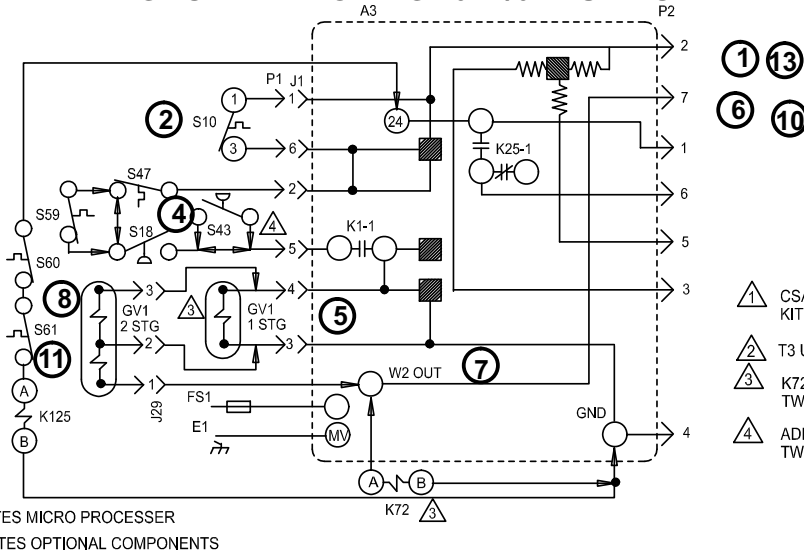
Optional N.O. low ambient switch S11 closes to energize condenser fan B4.

Three Phase G, J & M Voltage Units

Optional N.O. low ambient switch S11 closes to energize condenser fan relay K10.

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

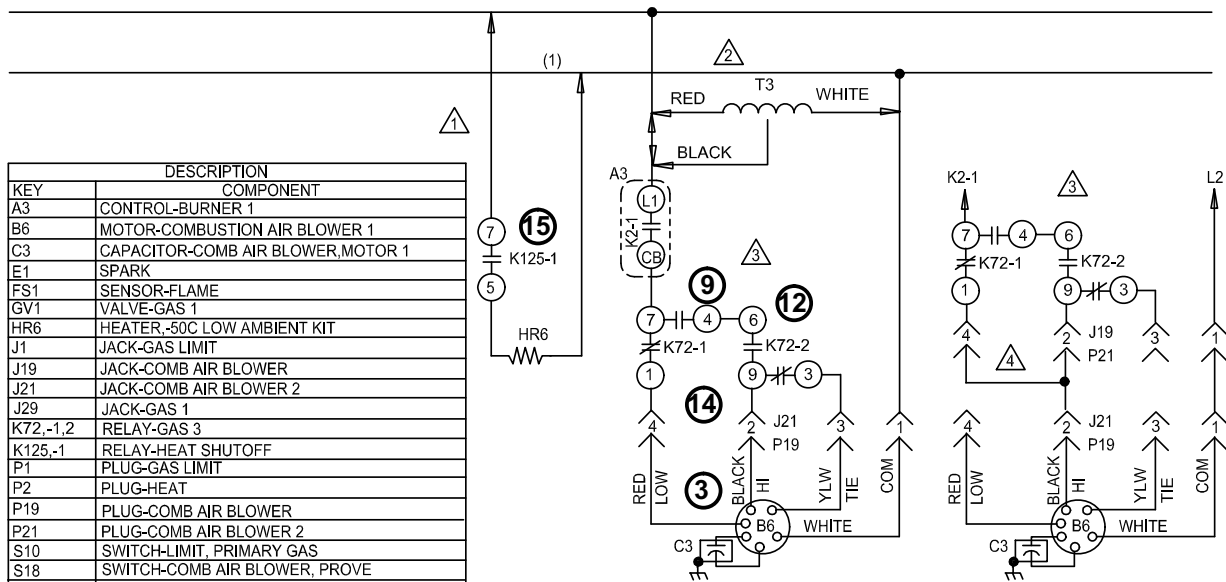
GAS HEAT FOR TGA024/072 UNITS



- ① ⑬
- ⑥ ⑩

- ① CSA(-50C) LOW AMBIENT KIT (OPTIONAL)
- ② T3 USED ON 480V AND 600V UNITS
- ③ K72 AND GV1 2 STG ARE USED ON TWO STAGE UNITS
- ④ ADD J21, P21, AND S43 FOR TWO STAGE LP GAS UNITS

■ INDICATES MICRO PROCESSOR
 ← DENOTES OPTIONAL COMPONENTS



| DESCRIPTION | |
|-------------|------------------------------------|
| KEY | COMPONENT |
| A3 | CONTROL-BURNER 1 |
| B6 | MOTOR-COMBUSTION AIR BLOWER 1 |
| C3 | CAPACITOR-COMB AIR BLOWER, MOTOR 1 |
| E1 | SPARK |
| FS1 | SENSOR-FLAME |
| GV1 | VALVE-GAS 1 |
| HR6 | HEATER, -50C LOW AMBIENT KIT |
| J1 | JACK-GAS LIMIT |
| J19 | JACK-COMB AIR BLOWER |
| J21 | JACK-COMB AIR BLOWER 2 |
| J29 | JACK-GAS 1 |
| K72,-1,2 | RELAY-GAS 3 |
| K125,-1 | RELAY-HEAT SHUTOFF |
| P1 | PLUG-GAS LIMIT |
| P2 | PLUG-HEAT |
| P19 | PLUG-COMB AIR BLOWER |
| P21 | PLUG-COMB AIR BLOWER 2 |
| S10 | SWITCH-LIMIT, PRIMARY GAS |
| S18 | SWITCH-COMB AIR BLOWER, PROVE |
| S43 | SWITCH-LOW GAS PRESSURE |
| S47 | SWITCH-FLAME ROLLOUT, BURNER 1 |
| S59 | THERMOSTAT-OPEN -20F, CLOSE 10F |
| S60 | THERMOSTAT-OPEN 20F, CLOSE -10F |
| S61 | THERMOSTAT-OPEN 50F, CLOSE 20F |
| T3 | TRANSFORMER-COMB AIR BLOWER |

WIRING DIAGRAM 7/08

COMBINATION UNIT-ROOFTOP

GAS HEAT FOR

KGA, TGA, 65 THRU 150 UNITS

A BOX

HEATING SECTION-A1

Supersedes Form No. New Form No. 537061-01

© 2008 Litko U.S.A.

First Stage Heat:

1. The thermostat initiates W1 heating demand.
2. 24VAC is routed from TB1 to ignition control A3. A3 proves N.C. primary limit S10 and N.C. rollout switch S47.
3. Combustion air inducer blower B6 is energized.
4. After the combustion air inducer B6 has reached full speed, the combustion air proving switch S18 contacts close.
5. After a 30 second delay A3 energizes the ignitor and gas valve GV1 on first stage.

Second Stage Heat:

6. With first stage heat operating, an additional heating demand from the thermostat initiates W2.
7. A second stage heating demand is received by ignition control A3.
8. A3 energizes gas valve GV1 on second stage.
9. Relay K72-1 terminals 1 and 7 open, 7 and 4 close. K72-2 terminals 6 and 9 close and 9 and 3 open, energizing combustion air inducer B6 on high speed.

End of Second Stage Heat:

10. Heating demand is satisfied. Terminal W2 (second stage) is de-energized.
11. Second stage heat is de-energized on GV1 by ignition control A3.
12. K72 terminals 4 and 7 open and 1 and 7 close. K72 terminals 6 and 9 open, 9 and 3 close. Combustion air inducer B6 is now on low speed.

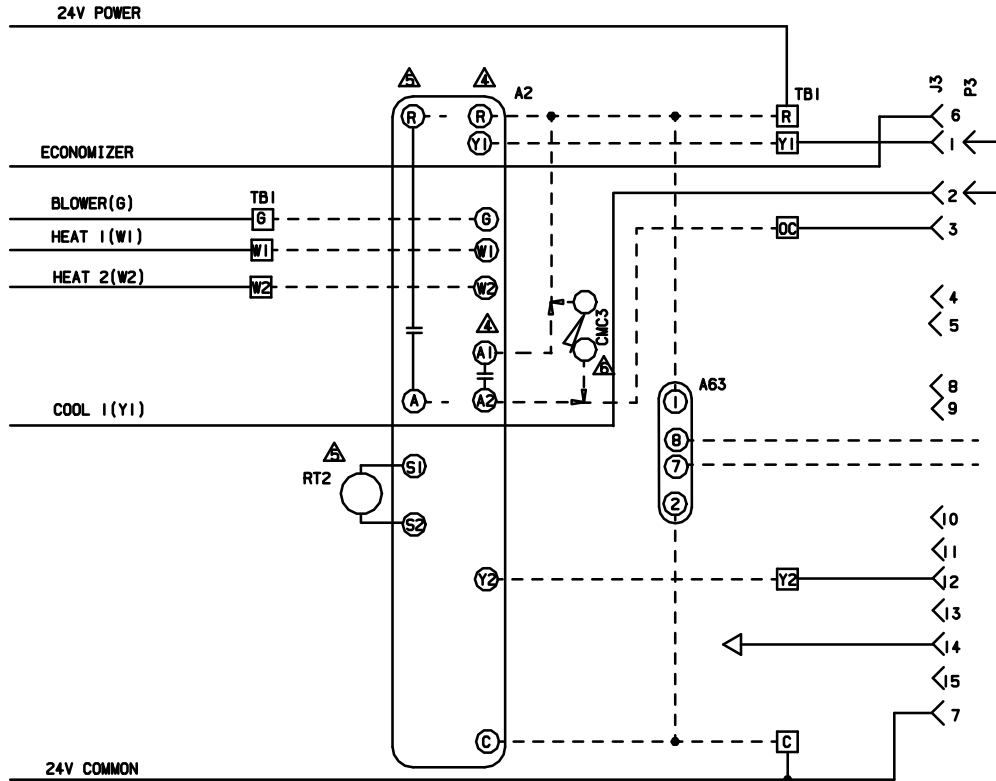
End of First Stage Heat:

13. Heating demand is satisfied. Terminal W1 (first stage) is de-energized.
14. Ignition A3 is de-energized in turn de-energizing gas valve GV1 and combustion air inducer B6.

Optional Low Ambient Kit: (C.S.A. -50°C Low Ambient Kit)

15. Line voltage is routed through the N.C. low ambient kit thermostats S60 and S61, to energize low ambient kit heater HR6.

ELECTRONIC OR ELECTROMECHANICAL THERMOSTAT



| KEY | DESCRIPTION |
|------|---------------------------------|
| | COMPONENT |
| 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 |

© 2008 Litho U.S.A.

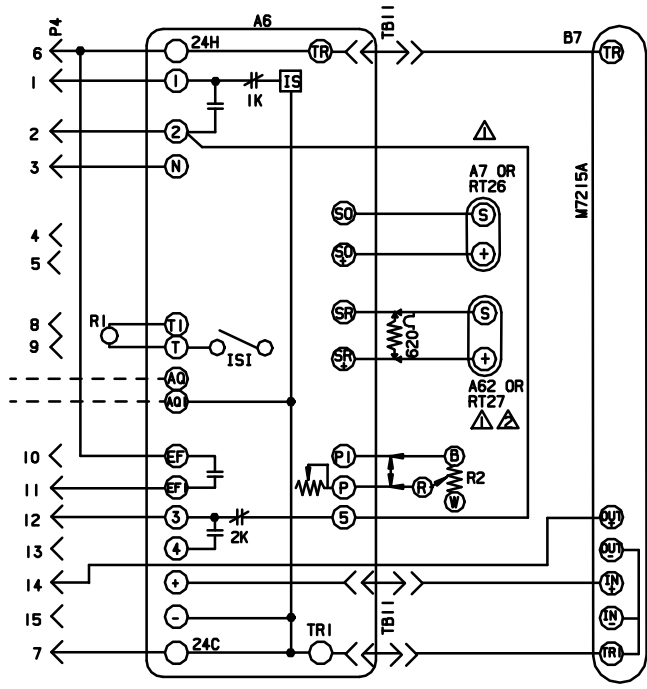
POWER:

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

OPERATION:

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

"T" SERIES ECONOMIZER



| KEY | DESCRIPTION |
|------|--------------------------------|
| A6 | CONTROL-SOLID STATE ENTHALPY |
| A7 | SENSOR-SOLID STATE ENTHALPY |
| A62 | SENSOR-ENTHALPY, INDOOR |
| B7 | MOTOR-DAMPER, ECONOMIZER |
| P4 | PLUG-ECONOMIZER |
| R1 | SENSOR-MIXED AIR OR SUPPLY AIR |
| R2 | POT-MINIMUM POSITION |
| RT26 | SENSOR-OUTDOOR AIR TEMP |
| RT27 | SENSOR-INDOOR AIR TEMP |
| TB1 | TERMINAL STRIP |

- △ A62 ENTHALPY SENSOR OR RT27 USED FOR DIFFERENTIAL SENSING
- △ RT26 AND RT27, TEMPERATURE SENSORS MAY BE USED INSTEAD OF A7 AND A62 ENTHALPY SENSORS

————— DESIGNATES OPTIONAL WIRING
 - - - - - CLASS II FIELD WIRING

| | | |
|--|--------------------------|-------|
| WIRING DIAGRAM | | 11/05 |
| ACCESSORIES | | |
| ECONOMIZER FOR TCA/TGA UNITS A BOX | | |
| ECONOMIZER SECTION D1 | | |
| Supersedes Form No. | New Form No. 535,059W | |

© 2005 Litho U.S.A.

SEQUENCE OF OPERATION

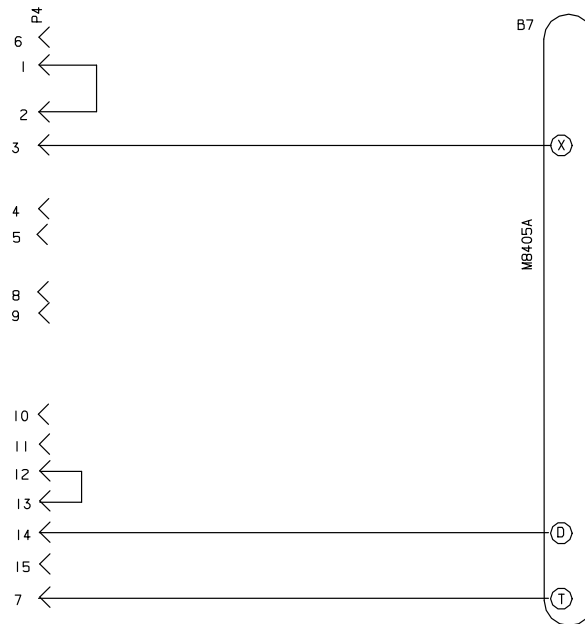
POWER:

1. Terminal strip TB1 found in the main control panel energizes the economizer components with 24VAC.

OPERATION:

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



| KEY | DESCRIPTION |
|-----|--------------------------|
| 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 | |

© 2006

Litho U.S.A.

SEQUENCE OF OPERATION

OPERATION:

Occupied Mode

1. 24 volt signal from terminal "OC" on TB1 opens B7 dampers to minimum position.

Unoccupied Mode

2. Dampers remain closed.