

---

# OWNER'S MANUAL

## Centrifugal Fan INSTALLATION AND OPERATION

PNEG-163-04

Model #:

\_\_\_\_\_

Serial #:

\_\_\_\_\_



DATE: 4-1-05

---

# CHECK LIST

---

- \_\_\_\_\_ 1. All wire connections
- \_\_\_\_\_ 2. Tip clearance on blade
- \_\_\_\_\_ 3. Fan blade torqued to torque specs
- \_\_\_\_\_ 4. Grill guard in place and tight
- \_\_\_\_\_ 5. Fuse in place, extra fuse provided
- \_\_\_\_\_ 6. Motor rotation correct
- \_\_\_\_\_ 7. Contactor engages properly
- \_\_\_\_\_ 8. Running amperage
- \_\_\_\_\_ 9. Vibration
- \_\_\_\_\_ 10. All fasteners tight
- \_\_\_\_\_ 11. Indicator light
- \_\_\_\_\_ 12. All decals and serial number tag
- \_\_\_\_\_ 13. Aesthetic appearance
- \_\_\_\_\_ 14. Manual
- \_\_\_\_\_ 15. Manual Supplements for Double Inlet Fans

Tester Signature \_\_\_\_\_

Date \_\_\_\_\_

---

# TABLE OF CONTENTS

- Safety ..... 4
  - Safety Guidelines ..... 4
  - Safety Decals ..... 7
  - Roof Damage Warning and Disclaimer ..... 8
- Installation ..... 9
  - Pre-Installation Requirements ..... 9
  - Fan Installation ..... 9
  - Electrical Installation ..... 10
    - Test Run ..... 10
  - Ground Rod Installation ..... 11
- Fan Specifications ..... 12
  - 1750 rpm Fan Electrical Specifications ..... 12
  - 3500 rpm Fan Electrical Specifications ..... 13
  - Fan Dimensions ..... 14
    - Discharge Bolt Pattern Dimensions ..... 15
    - Inlet Cone Dimensions ..... 16
    - Fan Wheel Dimensions ..... 17
  - Fan Pad Location ..... 18
- Operation ..... 19
- Maintenance and Troubleshooting ..... 20
  - Fan Wheel Removal and Installation ..... 20
  - Fan Wheel Inspection and Maintenance ..... 21
  - Taper Bushing Torque Requirements ..... 21
  - Fan Motor Removal & Installation ..... 22
  - General Inspections ..... 22
  - Lubrication & Bearings ..... 23
  - Troubleshooting Charts ..... 24
- Parts ..... 26
  - Main Assembly - 1750 rpm Fans ..... 26
    - CF-3; CF-5 ..... 26
    - CF-7.5; CF-10 ..... 27
    - CF-15; CF-20 ..... 28
    - CF-25; CF-30 ..... 29
    - CF-40; CF-50 ..... 30
  - Main Assembly - 3500 rpm Fans ..... 31
    - CHS-3; CHS-5 ..... 31
    - CHS-7.5; CHS-10 ..... 32
    - CHS-15; CHS-20 ..... 33
    - CHS-30; CHS-40 ..... 34
    - CHS-50 ..... 35
  - Main Assembly - Single Inlet Direct Drive Fans ..... 36
  - Main Assembly - Double Inlet Fans ..... 37
  - Component Sub-Assemblies - Direct Drive and Double Inlet Fans ..... 38
    - Companion Flange - C-8570 ..... 38
    - Double Inlet Electric Motor Drives ..... 39
    - Shaft Coupling ..... 39
  - Control Box Assembly ..... 40
    - Control Box Sub-Assembly ..... 40
    - 230 Volt Single Phase ..... 41
    - 230 Volt Three Phase ..... 42
    - 460 Volt Three Phase ..... 44
  - Motor Conduit Assembly ..... 47
- Schematics/Wiring Diagrams ..... 50
  - 230 Volt Single Phase ..... 50
    - CF-3-1C ..... 50
    - CHS-3-1C ..... 52
    - CF-5-1C; CF-7.5-1C; CHS-5-1C; CHS-7.5-1C ..... 54
    - CF-10-1C; CHS-10-1C ..... 56
    - CF-15-1C ..... 58
  - 230 Volt Three Phase ..... 60
  - 460 Volt Three Phase ..... 62
- Appendix A - Additional Double Inlet Information ..... 64
- Warranty ..... 65

Double Inlet Fan Supplements ..... Pneg-1436 (Bearings) & Pneg-1437 (Shaft Coupling)

# SAFETY GUIDELINES

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below.

Please read the manual and pay attention to these sections. Failure to read this manual and it's safety instructions is a misuse of the equipment and may lead to serious injury or death.



**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**



**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



**NOTE** indicates information about the equipment that you should pay special attention to.

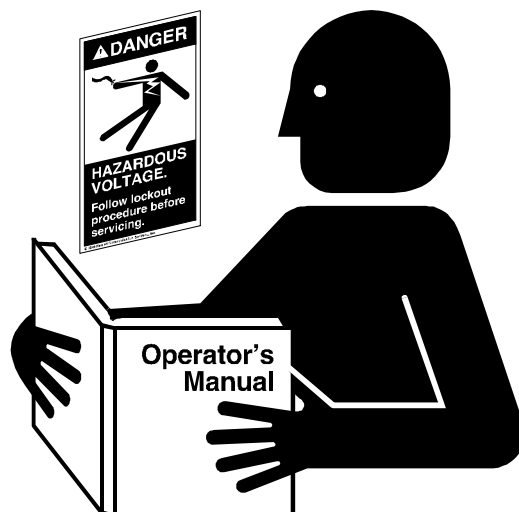
## FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and safety signs on your equipment. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your dealer.



## PRACTICE SAFE MAINTENANCE

Understand service procedures before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is in operation. Keep hands, feet, and clothing from rotating belt and idlers.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any build up grease, oil, or debris.

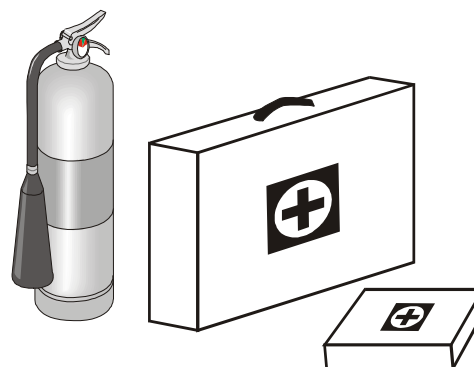


## PREPARE FOR EMERGENCIES

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



# SAFETY

## WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Ear Plugs or Muffs should be worn at all times to protect ears from high noise levels.

Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

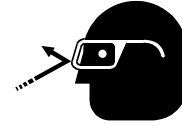
A respirator may be needed to prevent breathing potentially toxic fumes and dust.

Wear hard hat and steel toe boots to help protect your head and toes from falling debris.

## Hearing Protection



## Eye Protection



## Gloves



## Steel Toe Boots



## Respirator



## Hard Hat



## INSTALL & OPERATE ELECTRICAL EQUIPMENT PROPERLY

Electrical controls should be installed by a qualified electrician and must meet the standards set by the national electrical code and all local and state codes.

Disconnect and lock out all power sources before installing wires/cables or servicing equipment .



## INSTALL & OPERATE GAS-FIRED EQUIPMENT PROPERLY

Fuel supply should be installed by a qualified gas technician and must meet local and state codes for gaseous fuel supplies.

Disconnect and lock out all fuel sources before servicing equipment .



# SAFETY DECALS

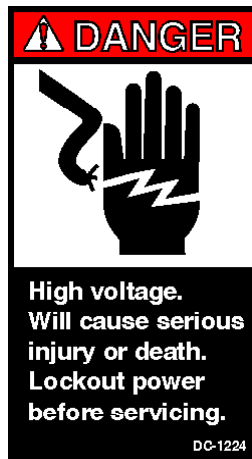
Safety decals should be read and understood by all people in the grain handling area. If a decal is damaged or is missing contact:

The GSI Group, Inc.  
1004 E. Illinois St.  
Assumption, IL 62510  
217-226-4421

A free replacement will be sent to you.



Part Number: DC-1225  
Size: 4.875" x 2.25"  
Located on fan housing side near fan inlet.



Part Number: DC-1224  
Size: 2.625" x 4.625"  
Located on fan housing side above motor & located on outside of control box lid.



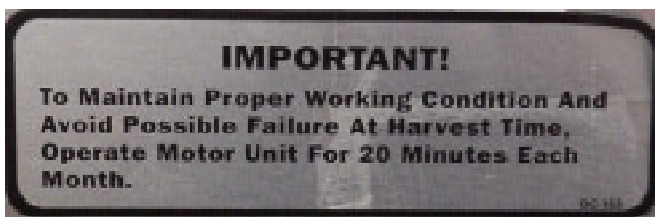
Part Number: DC-113  
Size: 4.75" x 1.625"  
Located on painted inlet cone of fan housing.



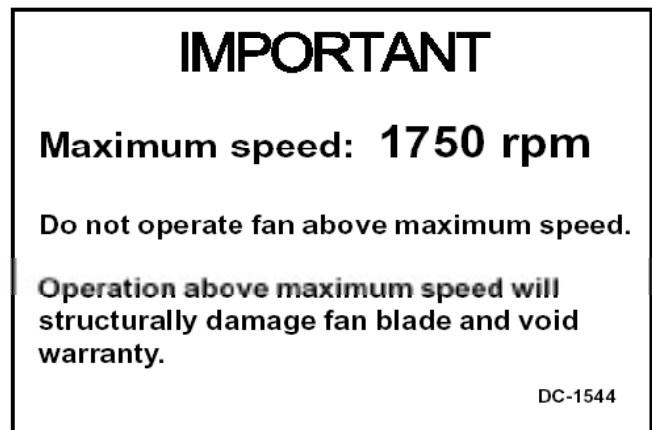
Part Number: DC-1749  
Size: 1.75" x 3.75"  
Located on fan coupling guard on motor driven fans.



Part Number: DC-889  
Size: 2.813" x 1.375"  
Located inside control box.



Part Number: DC-163  
Located on fan housing motor side.

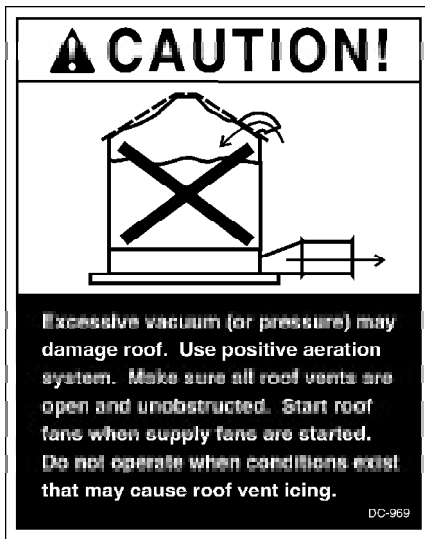


Part Number: DC-1544  
Size: 4.00" x 6.00"  
Located on fan housing motor side.

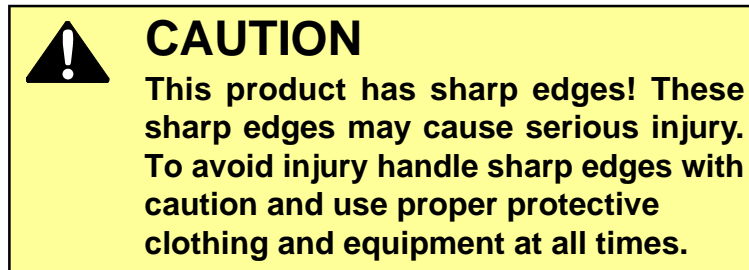


Part Number: DC-219  
Located on fan inlet cone.

**Roof Damage Warning And Disclaimer**



GSI DOES NOT WARRANT ANY ROOF DAMAGE CAUSED BY EXCESSIVE VACUUM OR INTERNAL PRESSURE FROM FANS OR OTHER AIR MOVING SYSTEMS. ADEQUATE VENTILATION AND/OR "MAKEUP AIR" DEVICES SHOULD BE PROVIDED FOR ALL POWERED AIR HANDLING SYSTEMS. GSI DOES NOT RECOMMEND THE USE OF DOWNWARD FLOW SYSTEMS (SUCTION). SEVERE ROOF DAMAGE CAN RESULT FROM ANY BLOCKAGE OF AIR PASSAGES. RUNNING FANS DURING HIGH HUMIDITY/COLD WEATHER CONDITIONS CAN CAUSE AIR EXHAUST OR INTAKE PORTS TO FREEZE.



**General Safety Statements**

Thank you for choosing a GSI Group product. It is designed to give excellent performance and service for many years.

It is the plan of The GSI Group to improve its product whenever possible and practical to do so. We reserve the right to change, improve, and modify products at any time without obligation to make changes, improvements, and modifications on equipment sold previously.

The principal concern of the The GSI Group Inc. ("GSI") is your safety and the safety of others associated with grain handling equipment. This manual is written to help you understand safe operating procedures, and some of the problems that may be encountered by the operator or other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment, or who are in the dryer area. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation, where serious injury or death may occur.

**THIS MANUAL DESCRIBES THE OPERATION OF THE CENTRIFUGAL FAN. THIS PRODUCT IS IDEAL FOR THE CONDITIONING OF CORN, SOYBEANS, AND OTHER SELECT GRAINS. ANY OTHER USE IS CONSIDERED A MISUSE OF THE PRODUCT.**



## Pre-Installation Requirements

**Foundation** Use the dimension illustration in the specifications section of this manual to determine the physical size of the fan to be installed. Use the dimensions shown to determine the position of the fan installation with respect to other equipment.

For proper operation of your fan, the unit is to be mounted on a level pad. The fan should not be anchored to the pad, but it should be allowed to “float” on the pad. The fan pad should be offset 2.00” below the top of the bin foundation. Refer to the dimension illustration “Fan Pad Location” in the specifications section of this manual for recommendations of pad placement with respect to various catalog transition ducts.

**Transition** The transition duct should be all metal construction, with a gradual angle to the rectangular opening in the bin wall. The duct should allow for a smooth transition with minimal resistance of the airflow from the fan discharge to the bin plenum. Keep the entrance of the plenum as clear as possible from obstructions by floor support.

**Roof Exhaust** Adequate exhaust air openings in the roof are required to prevent any additional back pressure from building in the bin. See “Roof Damage Warning” on the previous page.

**Power Supply** Adequate power must be supplied to the fan for reliable operation. Consult the local power company and have a representative survey the installation. Only the power company can ensure that their system is sized properly to provide adequate service to the installation and new equipment.

**Wire Size** Undersized wire can lead to voltage drop which causes motor overheating and shortened motor life. Use the electrical specifications chart in this manual to size the supply wire according to the horsepower of the fan and the distance to the power supply. Refer to the “Fan Specifications” section of this manual to find the full load current of the motor for a given fan size. The full load current can also be found on the motor nameplate.

**Service Disconnect** Each fan motor must be supplied with an independent power circuit, equipped with a fused disconnect switch. Locate this switch near the unit, as the power should be shut off before servicing the fan.

It is the customer’s responsibility to provide a fused disconnect and motor overload protection. These must be properly sized and connected to allow proper motor operation. Failure to provide these components could cause severe motor damage and void the manufacturer’s warranty.

## Fan Installation


1. Remove packaging materials and inspect fan for any shipping damages. Report these at once to the shipper.
2. Check all fasteners on the fan to make sure they are tight ( fasteners may loosen during shipment ). Tighten any loose fasteners, check for proper clearance and retighten.
3. Check all electrical connections that may have loosened during shipment.
4. Rotate the fan wheel. Wheel should rotate freely and should not make contact with the housing sides or inlet cone.
5. Place fan in proper location on the fan pad. Attach fan to transition duct and seal connection with caulk.
6. Check all joints and seams around the lower part of the bin. Verify that these are well sealed to prevent air leakage from the bin plenum. Inspect the transition duct as well. Seal any leaks that may be present to prevent air losses that reduce fan efficiency.
7. Level fan. Fan pad should be poured flat and level, however, it may be necessary to adjust the legs provided on the fan housing to level the fan. The legs should be adjusted so that when level all five

# INSTALLATION

---

legs touch the pad. Fans not resting on support legs may have excess vibration which can lead to premature wear and tear on fan components.

6. The starter controls require 115VAC power to operate. On 230 Volt 3 Phase units, this power is supplied by L1 to neutral.

 **DANGER**  
ALWAYS DISCONNECT AND LOCK OUT POWER BEFORE WORKING ON OR AROUND FAN.

**CAUTION**  
THE VOLTAGE BETWEEN L1 AND N MUST BE 115VAC. ANY OTHER VOLTAGE WILL CAUSE DAMAGE TO EQUIPMENT.

**IMPORTANT**  
ELECTRICAL INSTALLATION MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. ANY VIOLATION OF ELECTRICAL WIRING CODES COULD JEOPARDIZE THE WARRANTY.

Check this voltage before starting unit. If voltage is not within 105-125VAC, check for proper voltage on L2 or L3 and move to appropriate leg. If voltage is not acceptable, install a 0.25 KVA step-down transformer. (Note: Grounded B and some open delta power supplies will require this transformer kit.)

## Electrical Installation

1. Verify that the incoming power supply has been deemed adequate by the local power company.
2. Verify that the wiring supplying power to the fan is sized correctly for the distance away from supply and fan horsepower. (See tables in specification section of this manual)
3. Verify that the safety disconnect is installed and sized correctly for the fan size. (See tables in specification section of this manual)
4. Install a machine to earth ground for each individual fan. Refer to the "Ground Rod Installation" page in this manual.
5. The following wires must be supplied to each fan. Units without control transformers require a separate neutral and earth ground connection.

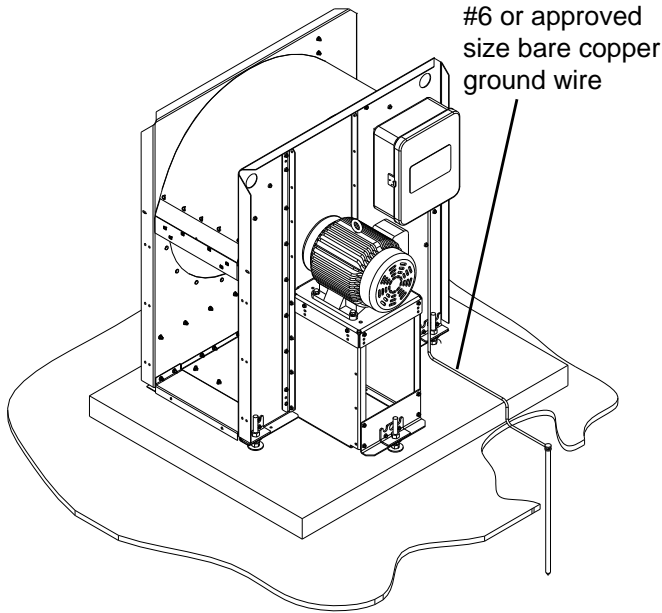
1PH 230V	L1, L2, N, G
3PH 230V	L1, L2, L3, N, G
3PH 230V with optional transformer kit	L1, L2, L3, G
3PH 460V/575V	L1, L2, L3, G

## Final Check

Check to make sure all safety guards are in place and not damaged. Replace damaged parts.  
Check to make sure all decals are visible and not damaged. Replace damaged decals.  
Check to make sure all control boxes are closed and no wiring is exposed.

## Test Run

When the fan is completely installed, the unit will need to be checked for proper rotation. Provide power to the fan controls and start the fan momentarily. Make sure that the fan wheel rotation is in the direction that the decal on the fan housing illustrates. If the decal is missing, note that the wheel should operate counterclockwise when viewed through the inlet guard on standard construction fans. If the wheel is rotating the wrong direction, have your electrician correct the wiring.



**Use a #6 or approved size bare copper ground wire. Install a 5/8" diameter 8' long copper-clad ground rod, 2' away from the foundation and 1' below the surface of the ground or in accordance with local requirements.**

## Machine To Earth Ground

It is very important that a machine to earth ground rod be installed at the fan. This is true even if there is a ground at the pole 15 feet away. This ground needs to be as close to the fan as possible, but no more than 8 feet away. The ground rod should be connected to the fan control panel with at least a #6 solid bare copper ground wire, or in accordance with local requirements. The machine to earth ground provides additional safety if there is a short. It also provides the grounding necessary for long life and operation of the solid state circuit boards used on control circuits and the electronic ignition systems.

## Previously Installed Units

It is recommended that previously installed units be checked to see that a machine to earth ground has been installed by an electrician.

## Proper Installation of the Ground Rod

(Ground rods and wires are not supplied ). It is recommended that the rod not be driven into dry ground. The following steps ensure proper ground rod installation:

1. Dig a hole large enough to hold 1 to 2 gallons of water.
2. Fill hole with water.
3. Insert rod through water and jab it into the ground.
4. Continue jabbing the rod up and down, the water will work its way down the hole, making it possible to work the rod completely into the ground. This method of installing the rod gives a good conductive bond with the surrounding soil.
5. Connect the bare copper ground wire to the rod with the proper ground rod clamp.
6. Connect the bare ground wire to the fan control boxes with a grounding lug.
7. Ground wire must not have any breaks or splices. Insulated wire is not recommended for grounding.



**Dig a hole large enough to hold 1 or 2 gallons of water.**

**Work the ground rod into the earth until it is completely in the ground.**

# FAN SPECIFICATIONS

## 1750 rpm Fan Electrical Specifications

FAN HORSEPOWER	3				5				7.1/2				10			
PHASE	1	3			1	3			1	3			1	3		
VOLTS	230	230	460	575	230	230	460	575	230	230	460	575	230	230	460	575
FULL LOAD CURRENT (AMPS) *	17	9.6	4.8	3.9	28	15.2	7.6	6.1	40	22	11	9	50	28	14	11
MINIMUM WIRE SIZE	Copper Wire				Copper Wire				Copper Wire				Copper Wire			
50' RUN	12	14	14	14	10	14	14	14	8	10	14	14	6	10	14	14
100' RUN	12	14	14	14	8	12	14	14	8	10	14	14	6	10	14	14
200' RUN	8	12	14	14	6	10	14	14	4	8	14	14	4	6	12	14
300' RUN	6	10	14	14	4	8	14	14	3	6	12	14	2	4	10	12
MINIMUM WIRE SIZE	Aluminum Wire				Aluminum Wire				Aluminum Wire				Aluminum Wire			
50' RUN	10	12	12	12	8	12	12	12	6	10	12	12	4	8	12	12
100' RUN	8	12	12	12	6	10	12	12	6	8	12	12	4	8	12	12
200' RUN	6	10	12	12	4	8	12	12	3	6	12	12	2	4	10	12
300' RUN	4	8	12	12	3	6	12	12	1	4	10	12	0	3	8	10
FUSE SIZE (SLOW BLOW)	30	15	8	6	50	25	12	10	70	40	20	15	90	45	25	20
BREAKER SIZE	50	15	15	15	70	30	15	15	100	40	20	15	125	50	30	20

\* Based on NEC Tables 430-148 & 430-150

FAN HORSEPOWER	15				20			25			30			40			50		
PHASE	1	3			3			3			3			3			3		
VOLTS	230	230	460	575	230	460	575	230	460	575	230	460	575	230	460	575	230	460	575
FULL LOAD CURRENT (AMPS) *	65	42	21	17	54	27	22	68	34	27	80	40	32	104	52	41	130	65	52
MINIMUM WIRE SIZE	Copper Wire				Copper Wire			Copper Wire			Copper Wire			Copper Wire			Copper Wire		
50' RUN	4	6	10	12	4	10	10	4	8	10	3	8	8	1	6	6	00	4	6
100' RUN	4	6	10	12	4	10	10	4	8	10	3	8	8	1	6	6	00	4	6
200' RUN	3	4	10	12	4	10	10	3	8	10	3	8	8	1	6	6	00	4	6
300' RUN	1	4	10	10	3	8	10	2	6	8	1	6	8	0	6	6	00	4	6
MINIMUM WIRE SIZE	Aluminum Wire				Aluminum Wire			Aluminum Wire			Aluminum Wire			Aluminum Wire			Aluminum Wire		
50' RUN	2	4	10	10	3	8	10	2	6	8	1	6	8	00	4	4	0000	2	4
100' RUN	2	4	10	10	3	8	10	2	6	8	1	6	8	00	4	4	0000	2	4
200' RUN	1	3	8	10	2	8	10	1	6	8	0	6	8	00	4	4	0000	2	4
300' RUN	00	1	6	8	0	6	8	00	4	6	00	4	6	000	4	4	0000	2	4
FUSE SIZE (SLOW BLOW)	125	70	40	30	90	45	40	110	60	45	125	60	50	175	80	70	200	100	80
BREAKER SIZE	175	70	40	30	90	50	40	110	60	50	125	60	50	175	80	70	200	100	80

\* Based on NEC Tables 430-148 & 430-150

### IMPORTANT

THE VALUES LISTED IN THIS CHART ARE RECOMMENDATIONS ONLY. ELECTRICAL INSTALLATION MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. ANY VIOLATION OF ELECTRICAL WIRING CODES COULD JEOPARDIZE THE WARRANTY.

# FAN SPECIFICATIONS

## 3500 rpm Fan Electrical Specifications

FAN HORSEPOWER	3				5				7.1/2				10			
PHASE	1	3			1	3			1	3			1	3		
VOLTS	230	230	460	575	230	230	460	575	230	230	460	575	230	230	460	575
FULL LOAD CURRENT (AMPS) *	17	9.6	4.8	3.9	28	15.2	7.6	6.1	40	22	11	9	50	28	14	11
MINIMUM WIRE SIZE	Copper Wire				Copper Wire				Copper Wire				Copper Wire			
50 ' RUN	12	14	14	14	10	14	14	14	8	10	14	14	6	10	14	14
100 ' RUN	12	14	14	14	8	12	14	14	8	10	14	14	6	10	14	14
200 ' RUN	8	12	14	14	6	10	14	14	4	8	14	14	4	6	12	14
300 ' RUN	6	10	14	14	4	8	14	14	3	6	12	14	2	4	10	12
MINIMUM WIRE SIZE	Aluminum Wire				Aluminum Wire				Aluminum Wire				Aluminum Wire			
50 ' RUN	10	12	12	12	8	12	12	12	6	10	12	12	4	8	12	12
100 ' RUN	8	12	12	12	6	10	12	12	6	8	12	12	4	8	12	12
200 ' RUN	6	10	12	12	4	8	12	12	3	6	12	12	2	4	10	12
300 ' RUN	4	8	12	12	3	6	12	12	1	4	10	12	0	3	8	10
FUSE SIZE (SLOW BLOW)	30	15	8	6	50	25	12	10	70	40	20	15	90	45	25	20
BREAKER SIZE	50	15	15	15	70	30	15	15	100	40	20	15	125	50	30	20

\* Based on NEC Tables 430-148 & 430-150

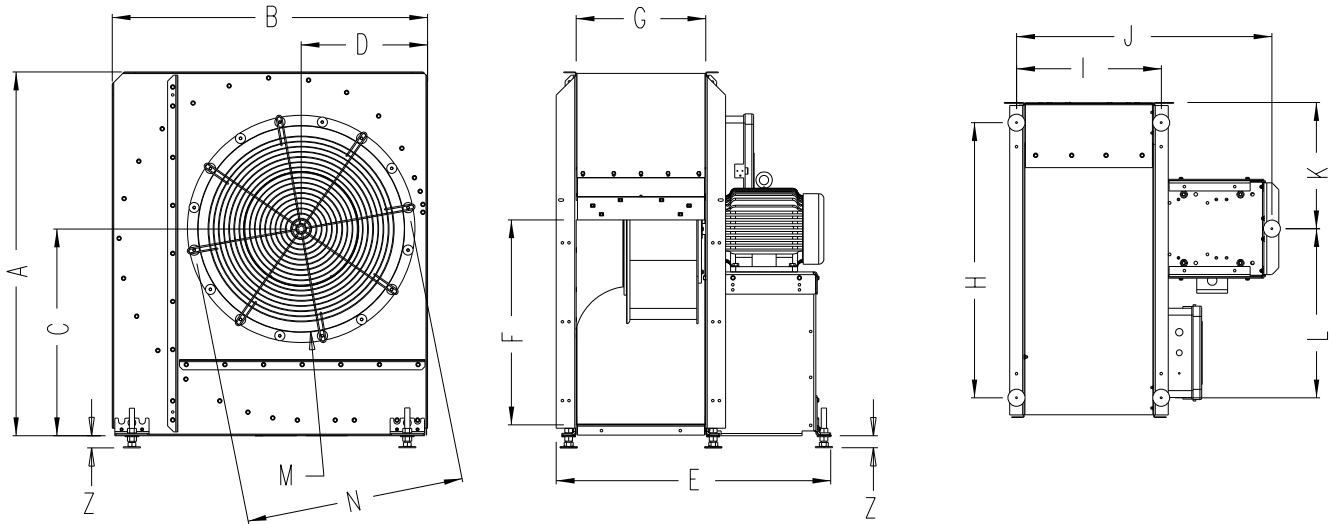
FAN HORSEPOWER	15			20			30			40			50		
PHASE	3			3			3			3			3		
VOLTS	230	460	575	230	460	575	230	460	575	230	460	575	230	460	575
FULL LOAD CURRENT (AMPS) *	42	21	17	54	27	22	80	40	32	104	52	41	130	65	52
MINIMUM WIRE SIZE	Copper Wire			Copper Wire			Copper Wire			Copper Wire			Copper Wire		
50' RUN	6	10	12	4	10	10	3	8	8	1	6	6	00	4	6
100' RUN	6	10	12	4	10	10	3	8	8	1	6	6	00	4	6
200' RUN	4	10	12	4	10	10	3	8	8	1	6	6	00	4	6
300' RUN	4	10	10	3	8	10	1	6	8	0	6	6	00	4	6
MINIMUM WIRE SIZE	Aluminum Wire			Aluminum Wire			Aluminum Wire			Aluminum Wire			Aluminum Wire		
50' RUN	4	10	10	3	8	10	1	6	8	00	4	4	0000	2	4
100' RUN	4	10	10	3	8	10	1	6	8	00	4	4	0000	2	4
200' RUN	3	8	10	2	8	10	0	6	8	00	4	4	0000	2	4
300' RUN	1	6	8	0	6	8	00	4	6	000	4	4	0000	2	4
FUSE SIZE (SLOW BLOW)	70	40	30	90	45	40	125	60	50	175	80	70	200	100	80
BREAKER SIZE	70	40	30	90	50	40	125	60	50	175	80	70	200	100	80

\* Based on NEC Tables 430-148 & 430-150

**IMPORTANT**

THE VALUES LISTED IN THIS CHART ARE RECOMMENDATIONS ONLY. ELECTRICAL INSTALLATION MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN, IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES. ANY VIOLATION OF ELECTRICAL WIRING CODES COULD JEOPARDIZE THE WARRANTY.

# FAN SPECIFICATIONS



Minimum Leg Height ( Z ) = 1.875"

## 1750 rpm Fan Housing Dimensions

FAN	A	B	C	D	E	F	G	H	I	J	K	L	M	N
CF-3	44	37.875	25.094	15.313	30.813	23.593	13.5	32.094	15.688	28.813	15.313	19.656	24.875	26.125
CF-5	48.563	42	27.719	17.063	34.688	27.25	14.25	36.125	16.438	32.563	17.063	21.968	27.375	29.125
CF-7.5	48.563	42	27.719	17.063	38.438	27.25	18	36.125	20.188	36.313	17.063	21.968	27.375	29.125
CF-10	53	45.938	30.125	18.406	38.625	29.875	17.438	40.094	19.781	35.844	18.406	24.656	30	31.75
CF-15	53	45.938	30.125	18.406	40.063	29.875	18.875	40.094	21.219	37.281	18.406	24.656	30	31.75
CF-20	58.906	50.563	33.34	20.094	45.438	33.25	19.563	44.438	21.813	42.906	20.094	27.281	33.625	35.125
CF-25	58.906	50.563	33.34	20.094	47.75	33.25	21.875	44.438	24.063	45.125	20.094	27.281	33.625	35.125
CF-30	64.406	55.75	36.219	22.25	47.688	33.25	21.875	49.844	24.125	45.25	22.313	30.532	36.5	38.375
CF-40	64.406	55.75	36.219	22.25	49.5	33.25	23.688	49.844	25.938	47.063	22.313	30.532	36.5	38.375
CF-50	64.406	55.75	36.219	22.25	50.625	33.25	25.25	49.844	27.5	48.625	22.313	30.532	36.5	38.375
CF-30D- CF-50D	56.498	51.756	32.938	22.688	90.625	33.25	44	42.5	46.532	89.563	22.688	25.089	33.5	35.125

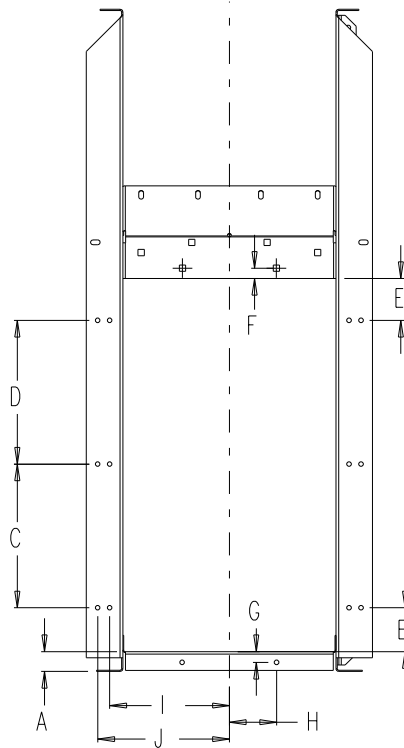
## 3500 rpm Fan Housing Dimensions

FAN	A	B	C	D	E	F	G	H	I	J	K	L	M	N
CHS-3	30.031	29.813	17.375	12.813	27.188	16.5	8.125	24.156	10.281	25.375	12.813	14.156	16.5	17.875
CHS-5	30.031	29.813	17.375	12.813	28.969	16.5	10	24.156	12.156	27.25	12.813	14.156	16.5	17.875
CHS-7.5	36.375	33.375	20.875	13.281	29.938	19	10	27.688	12.219	28.219	13.281	17.219	20.5	21.75
CHS-10	36.375	33.375	20.875	13.281	30.938	19	11	27.688	13.219	29.219	13.281	17.219	20.5	21.75
CHS-15	36.375	33.375	20.875	13.281	32.938	19	13	27.688	15.219	31.219	13.281	17.219	20.5	21.75
CHS-20	44	37.875	25.094	15.313	37.813	23.563	12.563	32.094	14.75	35.813	15.313	19.656	24.875	26.125
CHS-30	44	37.875	25.094	15.313	39.313	23.563	14.063	32.094	16.25	37.313	15.313	19.656	24.875	26.125
CHS-40	44	37.875	25.094	15.313	41.75	23.563	16.5	32.094	18.688	39.75	15.313	19.656	24.875	26.125
CHS-50	48.563	42	27.719	17.063	41.125	27.25	15.75	36.125	17.938	39	17.063	21.968	27.375	29.125

**Note:** All dimensions in inches to nearest 1/32".

**Note:** Add 8.125" to ' A ' dimension for 3500 rpm fans with control boxes

# FAN SPECIFICATIONS



## 1750 rpm Discharge Dimensions

FAN	A	B	C	D	E	F	G	H	I	J
CF-3	1.531	4.688	5.906	5.906	7.094	1.094	0.875	2.406	7.844	***
CF-5	1.813	5.125	8.438	8.438	5.218	0.875	0.75	2.75	8.031	***
CF-7.5	1.813	5.125	8.438	8.438	5.218	0.875	0.75	3.75	9.906	***
CF-10	1.594	3.5	11.5	11.5	3.344	0.813	0.688	3.75	9.594	10.563
CF-15	1.594	3.5	11.5	11.5	3.344	0.813	0.688	5.75	10.313	11.281
CF-20	1.656	8.156	8.469	8.469	8.188	0.75	0.75	5.75	10.5	11.656
CF-25	1.656	8.156	8.469	8.469	8.188	0.75	0.75	5.75	11.656	12.813
CF-30	1.281	8.188	8.438	8.438	8.156	0.75	0.75	5.75	11.656	***
CF-40	1.281	8.188	8.438	8.438	8.156	0.75	0.75	5.75	12.563	***
CF-50	1.281	8.188	8.438	8.438	8.156	0.75	0.75	5.75	13.344	***
CF-30D- CF-50D	1.313	8.031	8.438	8.438	8.219	0.656	0.813	3.0 *	22.906	***

\* 4 holes @ 6.00" Spacing

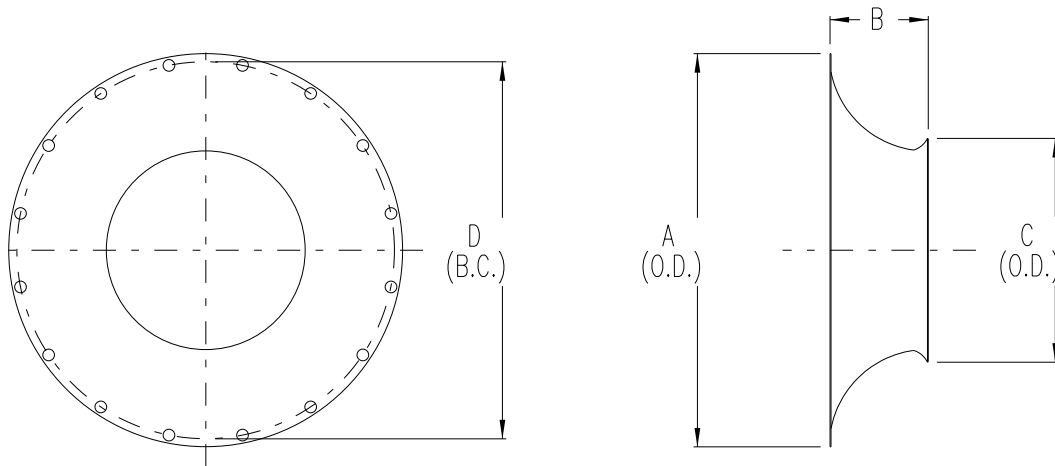
## 3500 rpm Discharge Dimensions

FAN	A	B	C	D	E	F	G	H	I	J
CHS-3	1.625	4.313	4.125	4.125	4.063	1	0.781	2	5.125	***
CHS-5	1.625	4.313	4.125	4.125	4.063	1	0.781	2	6.094	***
CHS-7.5	1.625	3.531	4.75	4.75	6	1.094	0.875	2	6.094	***
CHS-10	1.625	3.531	4.75	4.75	6	1.094	0.875	2	6.094	***
CHS-15	1.625	3.531	4.75	4.75	6	1.094	0.875	2	6.094	***
CHS-20	1.531	4.688	5.906	5.906	7.094	1.094	0.875	2.406	7.375	***
CHS-30	1.531	4.688	5.906	5.906	7.094	1.094	0.875	2.781	8.125	***
CHS-40	1.531	4.688	5.906	5.906	7.094	1.094	0.875	3.063	9.344	***
CHS-50	1.813	5.125	8.438	8.438	5.219	0.875	0.75	3.063	8.781	***

**Note:** All dimensions in inches to nearest 1/32".

# FAN SPECIFICATIONS

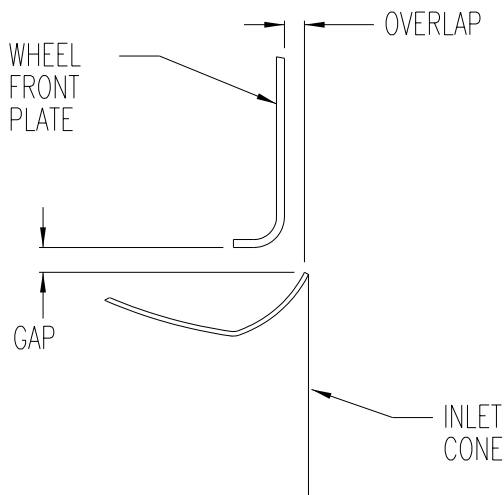
## Inlet Cone Dimensions



Size	Painted Part Number	A	B	C	D	Hole Size	Number of Holes
15	C-7743	18.625	4.000	10.375	9.875	0.688	8
18	C-7745	22.750	5.388	12.625	21.750	0.875	16
22	C-7747	27.125	6.750	15.625	26.125	0.875	16
24	C-7749	30.500	7.250	17.000	29.125	1.000	16
27	C-7751	33.125	8.000	18.813	31.750	1.000	16
30	C-7753	36.500	9.000	21.125	35.125	1.000	16
33	C-7754	38.750	10.000	23.063	38.376	1.000	16

Add suffix to painted part number for correct color. "-Y" = YELLOW, "-R" = RED, "-O" = ORANGE

## Inlet Cone to Wheel Clearances



### GAP

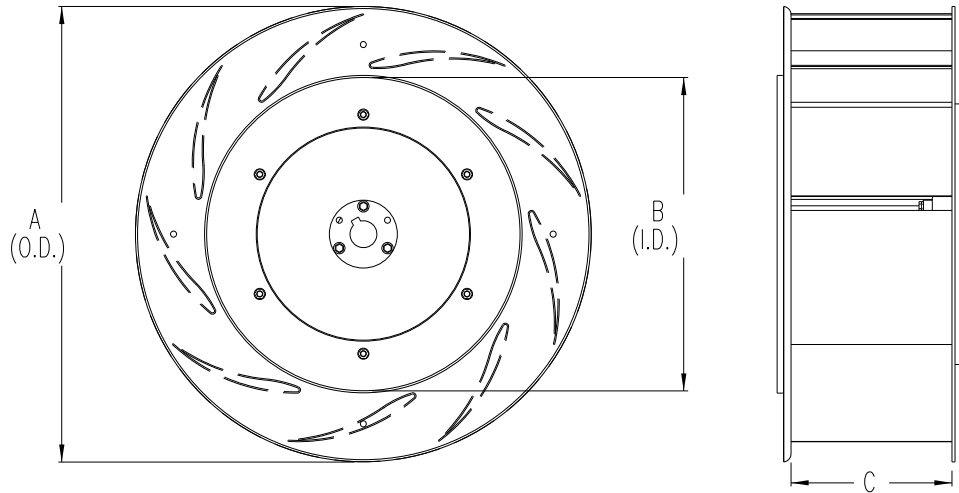
The "GAP" between the cone and wheel should be equal distance all around the cone's inner edge.

### OVERLAP

The "OVERLAP" of the wheel over the cone should be a minimum distance to allow free rotation without interference.



Fan Wheel Dimensions



Fan Model	Wheel Assembly Part Number *	Size	A	B	C
<i>1750 rpm Fans</i>					
CF-3	CH-6878	22	23.000	15.875	4.956
CF-5	C-956	24	25.250	17.188	5.938
CF-7.5	C-957	24	25.250	17.188	8.875
CF-10	C-8533	27	27.625	19.000	8.375
CF-15	C-960	27	27.625	19.000	9.750
CF-20	CH-2076	30	30.625	21.313	9.625
CF-25	C-2046	30	30.625	21.313	10.750
CF-30	C-7319	33	33.156	23.428	9.000
CF-40	C-7320	33	33.156	23.428	11.625
CF-50	C-8517	33	33.156	23.428	13.500
<i>3500 rpm Fans</i>					
CHS-3	FH-5464	15	15.500	10.625	2.875
CHS-5	FH-5465	15	15.500	10.625	4.750
CHS-7.5	FH-5466	18	18.750	12.750	3.000
CHS-10	FH-5467	18	18.750	12.750	4.000
CHS-15	FH-5468	18	18.750	12.750	6.000
CHS-20	FH-5469	22	23.000	15.875	3.938
CHS-30	FH-5470	22	23.000	15.875	5.938
CHS-40	FH-5758	22	23.000	15.875	7.875
CHS-50	FH-5852	24	25.250	17.188	6.938

\* Wheel Assembly is Blade and Bushing

# FAN SPECIFICATIONS

## FAN PAD LOCATION

Fan pad should be perpendicular to bin wall.

Fan discharge centerline should lie on bin centerline.

Recommended thickness for pad is 4.00" minimum.

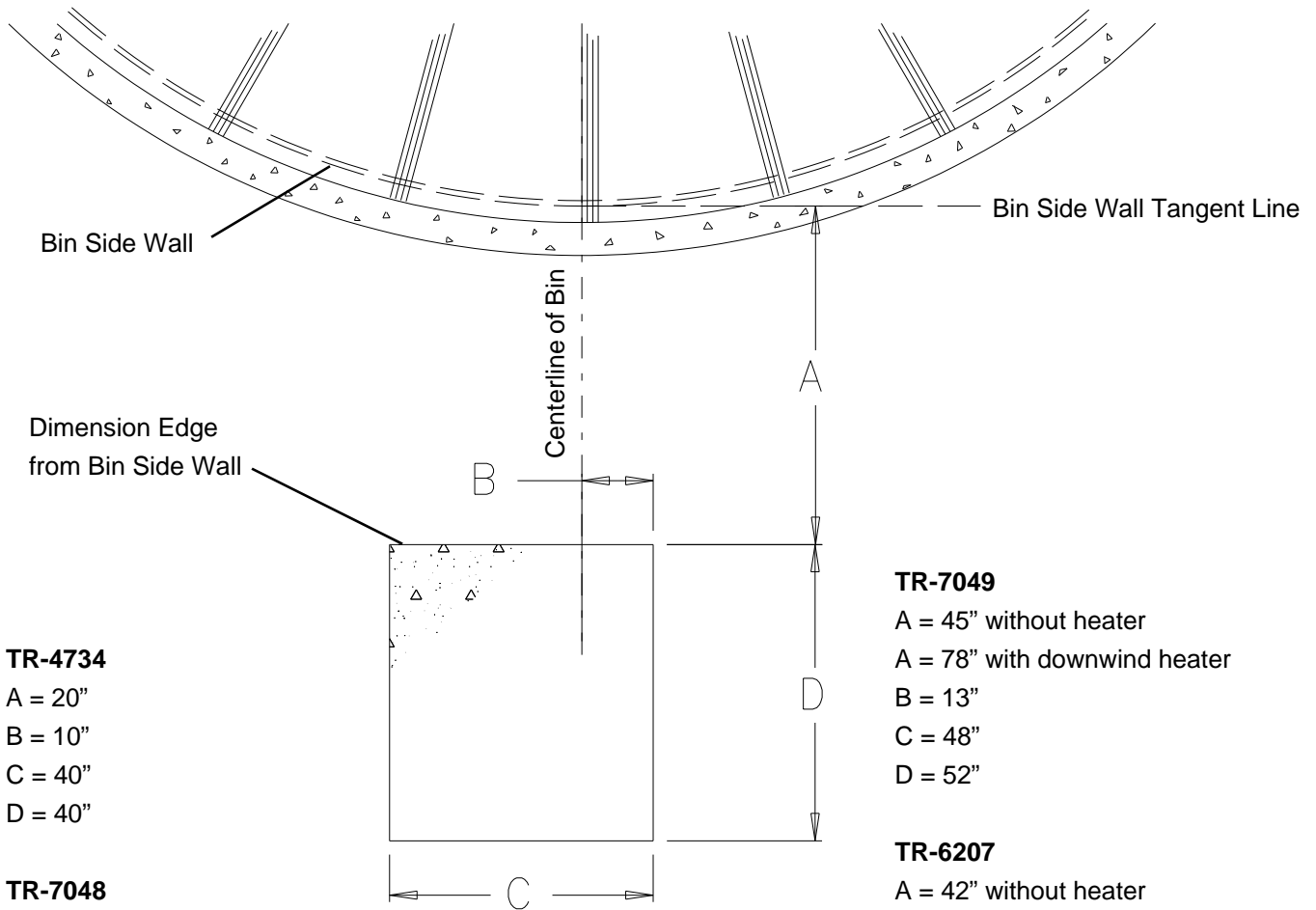
Top surface of pad should be 2.00" below bin foundation.

Fans with downwind heaters require fan pad to be

48.00" wide and add 33.00" onto length ( D ).

**IMPORTANT**

FAN PAD AND FAN MUST BE LEVEL AND SMOOTH FOR PROPER OPERATION. VIBRATION PROBLEMS CAN RESULT FROM IMPROPER FAN LEVELING.



**TR-4734**

- A = 20"
- B = 10"
- C = 40"
- D = 40"

**TR-7048**

- A = 45"
- B = 10"
- C = 40"
- D = 48"

**TR-6918 & TR-6919**

- A = 32" without heater
- A = 65" with downwind heater
- B = 13"
- C = 48"
- D = 52"

**TR-6853 (double inlet)**

- A = 54" without heater
- A = 88" with downwind heater
- B = 28"
- C = 100"
- D = 60"

**TR-7049**

- A = 45" without heater
- A = 78" with downwind heater
- B = 13"
- C = 48"
- D = 52"

**TR-6207**

- A = 42" without heater
- A = 78" with downwind heater
- B = 13"
- C = 48"
- D = 60"

**TR-6958**

- A = 55" without heater
- A = 85" with downwind heater
- B = 13"
- C = 48"
- D = 60"


After initial installation and also prior to using the unit each season, check the operation to ensure proper functioning, adjustment, and reliability.

## FAN START-UP

1. Make certain the unit is properly installed and connected, as described within the installation section of this manual. All air passage joints and seams must be well sealed.
2. With main power supply turned OFF, rotate the wheel by hand to make certain it turns freely without contacting the housing or inlet cone.
3. Open roof doors to allow airflow at all times when fan is operating.

**IMPORTANT**  
REFER TO ROOF DAMAGE DISCLAIMER IN THE SAFETY SECTION OF THIS MANUAL.

4. Turn ON main power disconnect switch.

 **WARNING**  
MAKE CERTAIN ALL GUARDS AND COVERS ARE SECURELY IN PLACE.

5. Press the fan START button and check the following:
  - A. Check direction of wheel rotation. Correct if needed by following the instructions on the motor.
  - B. Check to make sure the wheel comes to full operating speed in less than 10 seconds. If there is any doubt as to proper operation, check the current draw of the motor. The motor amperage should not exceed the maximum full load amps listed on the motor nameplate.

## FAN SHUT-DOWN

1. Press the fan STOP button on units equipped with motor controls.

2. Shut off electrical power at main and at disconnect.
3. Close the roof openings and cover fan inlet to prevent harmful back-draft air currents from passing through the grain and to avoid grain infestation from rodents and insects.

## Maintaining Grain Quality

To properly maintain the quality of stored grain, it is necessary to keep the grain dry, cool and insect free. Any one of these problems can contribute to spoilage. Wet, warm grain promotes insect growth as well as grain spoilage. Cool, dry grain can keep for long periods of time.

It is recommended that the grain be kept cool (avoid freezing as freezing can reduce quality). Grain should be cooled through the fall and winter, warmed in the spring and summer.

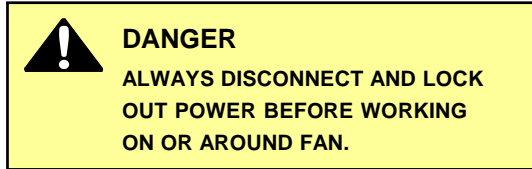
**IMPORTANT**  
CONDITIONS AND REQUIREMENTS MAY VARY FROM AREA TO AREA. CONTACT THE LOCAL AGRICULTURE EXTENSION OFFICE OR STATE AG. UNIVERSITY FOR MORE EXACT GUIDELINES.

## Grain Storage

Average grain temperature should be above 35°F in the winter and below 65°F in the summer. Always try to keep the grain within 10-15°F of the average monthly outside temperature. This means grain may need to be aerated on warm days during the winter to stay above 35°F when freezing temperatures are predominate. During the summer it may be necessary to aerate the grain on cool nights, so the 65°F temperature is not exceeded during the hot days of summer.

If the grain is to be stored more than one year, it has to be recooled the following fall and winter, repeating the process as long as the grain is in storage. **Frequent and regular inspection (at least weekly during fall and spring) is the best prevention against grain spoilage).**

# MAINTENANCE & TROUBLESHOOTING



## Fan Wheel Removal & Installation

The fan wheel is secured to the motor shaft by the use of a taper-lock bushing, motor shaft key, and capscrews. The size, quantity, and torque of capscrews required will depend on the model of the fan.

**CAUTION**

ALTHOUGH THE TAPER-LOCK METHOD OF RETAINING THE WHEEL ONTO THE MOTOR SHAFT IS VERY SIMPLE AND OBVIOUS, IT IS ESSENTIAL THAT THE FOLLOWING POINTS BE READ CAREFULLY AND FULLY UNDERSTOOD, AS IMPROPER INSTALLATION CAN RESULT IN SERIOUS OR FATAL INJURY CAUSED BY A LOOSE, FAST FLYING WHEEL.

**THREADED BUSHING HOLES:** The threaded holes within the bushing are provided for disassembly purposes only. Do not attempt to use these holes for reassembly, as they will not allow the parts to become locked onto the shaft, thereby causing an extremely hazardous operating condition.

**CLEARANCE HOLES:** When reassembling parts, the capscrews must be installed through the UNTAPPED CLEARANCE HOLES to cause the wheel to be pulled forward onto the tapered bushing, thus locking the parts securely onto the motor shaft. Refer to text for assembly details.

## Removal

1. LOCK-OUT THE MAIN POWER SUPPLY and remove the fan guard and inlet cone.
2. Remove the three capscrews from the clearance holes in taper-lock bushing. Inspect for thread damage and set aside for later reinstallation (do not use these bolts for step 3, bushing removal).
3. Install two Grade 5 (or better) capscrews into the THREADED HOLES in the bushing and turn them

in by hand until they bottom against the front surface of the wheel. These capscrews should not be used for reassembly, as some thread distortion could occur during the removal operation. Grade 5 screws are marked with three 120° spokes on the head and are more durable than low strength unmarked bolts.

**NOTE:** DO NOT ATTEMPT TO USE LOW STRENGTH (UNMARKED) BOLTS TO REMOVE THE BUSHING, AS THE BOLTS MAY BREAK OFF.

4. Block wheel to prevent it from turning, and GRADUALLY TURN IN THE CAPSCREWS (up to 1/4 turn at time), until the wheel breaks loose from the bushing and motor shaft. Carefully remove bushing and wheel. ( With the wheel free from the bushing, a wheel puller can be used to pull the bushing off of motor shaft, if required. ) Reattach bushing onto wheel to prevent the loss of parts and also to maintain the original alignment of bushing to wheel. Inspect wheel and bushing at this time, looking for any cracks, thread or bolt damage, warpage, etc. Consult your dealer or the factory for any questions concerning damage.

## Installation

1. Carefully clean motor shaft, key, bushing and bore of wheel. MAKE SURE MAIN POWER IS LOCKED OUT, and that shaft and key are completely free of rust and burrs. Do NOT lubricate the bushing or capscrews. CHECK AND MAKE SURE ALL MOTOR MOUNT BOLTS ARE PROPERLY TIGHTENED. Before installing the wheel, check the following:
  - (1) All foreign material should be removed from the wheel.
  - (2) Carefully inspect the wheel weldment and hub casting for damage, cracks, or other defects. Contact the factory if there is any question regarding the structural integrity of the wheel.

# MAINTENANCE & TROUBLESHOOTING

- Slide wheel over motor shaft and locate it as far onto the motor shaft as possible.
- Align the keyway in the bushing with the key and SLIDE bushing onto motor shaft. Do not attempt to drive the bushing onto the shaft, as it may damage the motor bearings.
- Rotate the bushing and wheel so their key slots are in line, and loosely attach the wheel to the bushing. MAKE SURE THE CAPSCREWS ARE INSERTED INTO THE UNTHREADED CLEARANCE HOLES IN THE BUSHING. Refer to previous CAUTION note on page 20. Locate the bushing so it is approximately flush with the end of motor shaft. Make certain that the proper capscrews are used for reassembly and no damage has occurred to these screws during disassembly! Use only the special type bolts supplied with the original wheel.
- Install inlet cone, checking clearance between fan wheel and inlet cone. Shift the location of inlet cone as required to center it in relation to the fan wheel, providing equal clearance completely around the fan wheel. Tighten inlet cone bolts.
- Slide the wheel forward onto the taper-lock bushing and turn the capscrews in by hand as far as possible. NOTE: The bushing must be located far enough forward so the wheel weldment does not strike cone as it rotates. Blade will move toward cone as it is tightened.
- Use an INCH-POUNDS torque wrench and GRADUALLY TIGHTEN the three capscrews (1/4 turn at a time) until the taper bushing becomes fully seated. Refer to the following chart for recommended capscrew tightening torques. DO NOT EXCESSIVELY OVERTIGHTEN THE BUSHING.
- Turn wheel by hand and check it for freedom of rotation and uniform clearance around inlet cone before reinstalling the fan guard.

## Fan Wheel Inspection & Maintenance

Pre-season inspections should be done on the fan wheel to look for the following.

- Any debris ( stalks, bees wings, mud, insects, and insect nests ) accumulated on the surfaces of the fan wheel. Remove these items as they will likely disrupt airflow over the fan airfoils and can potentially cause vibration problems
- Inspect the fan wheel for any broken, cracked, or loose parts. Blade should NOT be operated with broken or loose parts. Contact dealer for determination of the repairs required.



### WARNING

DO NOT ATTEMPT TO PULL THE FLANGE OF THE BUSHING FLUSH WITH THE WHEEL HUB. A CLEARANCE OF 1/8" TO 1/4" MUST BE MAINTAINED BETWEEN BUSHING FLANGE AND WHEEL HUB SURFACE. WHEEL WILL LOOSEN AND CAUSE DAMAGE OR INJURY.

### Browning Taper-Lock Bushing Bolt Tightening Torque

Bushing Size	Hex Bolt Size	Torque (inch-lbs)
P	5/16-18x1-1/4	192
Q	3/8-16x1-1/2	348

# MAINTENANCE & TROUBLESHOOTING

## Fan Motor


### Removal & Installation

In the event of motor failure, remove the motor, as described, and take it to the nearest Authorized Service Station. AUTHORIZED SERVICE STATIONS ARE THE ONLY PLACES THAT CAN PROVIDE MOTOR WARRANTY. Motor service and repair at other places will be at owner's expense. If service station determines motor failure to be caused by faulty material or workmanship, repair will be under warranty when within the warranty period. Motor failure because of external causes will result in a charge to the owner for repair.

1. LOCK-OUT THE MAIN POWER SUPPLY, then remove fan guard, inlet cone, and wheel as outlined earlier.
2. Open motor junction box cover and disconnect the motor lead wires from within the box.  
**NOTE:** Tag, or otherwise identify wires for ease of reassembly.
3. Remove motor mount bolts. If there are any shims between the motor and its base, note their locations so they can be properly installed during reassembly.
4. Disconnect the motor end of the motor conduit, if required, then carefully pull conduit and wires through hole in the motor junction box. Remove motor. If motor requires service, take it to an Authorized Service Station.
5. To reinstall motor, slide onto motor base plate and replace shims (if required) between motor and base plate. Reinstall motor mount bolts and washers, and fully tighten them at this time. Reinstall conduit and wires and carefully remake all electrical wiring connections.  
**NOTE:** Make sure to install and tighten the wheel in accordance with earlier instructions.

### General Inspection

Inspect the motor at regular intervals, approximately every 500 hours of operation or every 3 months, whichever occurs first. Keep the motor clean and the ventilation openings clear. The following steps should be performed at each inspection:



**DANGER**  
DO NOT TOUCH ELECTRICAL CONNECTIONS BEFORE YOU FIRST ENSURE THAT POWER HAS BEEN DISCONNECTED. ELECTRICAL SHOCK CAN CAUSE SERIOUS OR FATAL INJURY. ONLY QUALIFIED PERSONNEL SHOULD ATTEMPT THE INSTALLATION, OPERATION AND MAINTENANCE OF THIS EQUIPMENT.

1. Check that the motor is clean. Check that the interior and exterior of the motor is free of dirt, oil, grease, water, etc. Oily vapor, paper pulp, textile lint, etc. can accumulate and block motor ventilation. If the motor is not properly ventilated, overheating can occur and cause early motor failure.
2. Check all electrical connectors to be sure that they are tight.

### Lubrication & Bearings

Bearing grease will lose its lubricating ability over time, not suddenly. The lubricating ability of a grease (over time) depends primarily on the type of grease, the size of the bearing, the speed at which the bearing operates and the severity of the operating conditions. Good results can be obtained if the following recommendations are used in your maintenance program. Type of Grease: a high grade ball or roller bearing grease should be used.

# MAINTENANCE & TROUBLESHOOTING

Recommended grease for standard service conditions:

Polyrex EM (Exxon Mobil)

Equivalent and compatible greases include:

Texaco Polystar

Rykon Premium #2

Pennzoil Pen 2 Lube

Chevron SRI.

**CAUTION**

**TO AVOID DAMAGE TO MOTOR BEARINGS,  
GREASE MUST BE FREE OF DIRT.**

## Lubrication Procedure

Be sure that the grease you are adding to the motor is compatible with the grease already in the motor.

**Volume of Grease to Relubricate  
Bearings (teaspoons)**

NEMA Frame Size	
Up to 210 incl.	2
Over 210 to 280 incl.	3.9
Over 280 to 360 incl.	5.2
Over 360 to 449 incl.	13.4

### With Grease Outlet Plug

1. Clean all grease fittings.
2. Remove grease outlet plug.
3. Add the recommended amount of grease.
4. Re-install grease outlet plug.

### Without Grease Outlet Plug

This requires disassembly of the motor. Contact local motor shop for assistance.

## Lubrication Intervals - Ball Bearing Motors

Type of Annual Usage	1800 rpm - NEMA Frame Size			3600 rpm - NEMA Frame Size		
	Up to 280 incl.	Over 280 to 360 incl.	Over 360	Up to 280 incl.	Over 280 to 360 incl.	Over 360
<b>Continuous Normal Duty *</b>	9500 Hrs	7400 Hrs	3500 Hrs	3600 Hrs	2200 Hrs	2200 Hrs
<b>Continuous Severe Duty **</b>	4750 Hrs	3700 Hrs	1750 Hrs	1800 Hrs	1100 Hrs	1100 Hrs
<b>Seasonal Service Motor (idle 6 months)</b>	Lube at the <b>Beginning of Season</b> and then follow the <b>Appropriate Duty Interval</b> above.					

\* Clean, Little Corrosion with 40° C max Temperature.

\*\* Moderate Dirt, Corrosion with 50° C max Temperature.

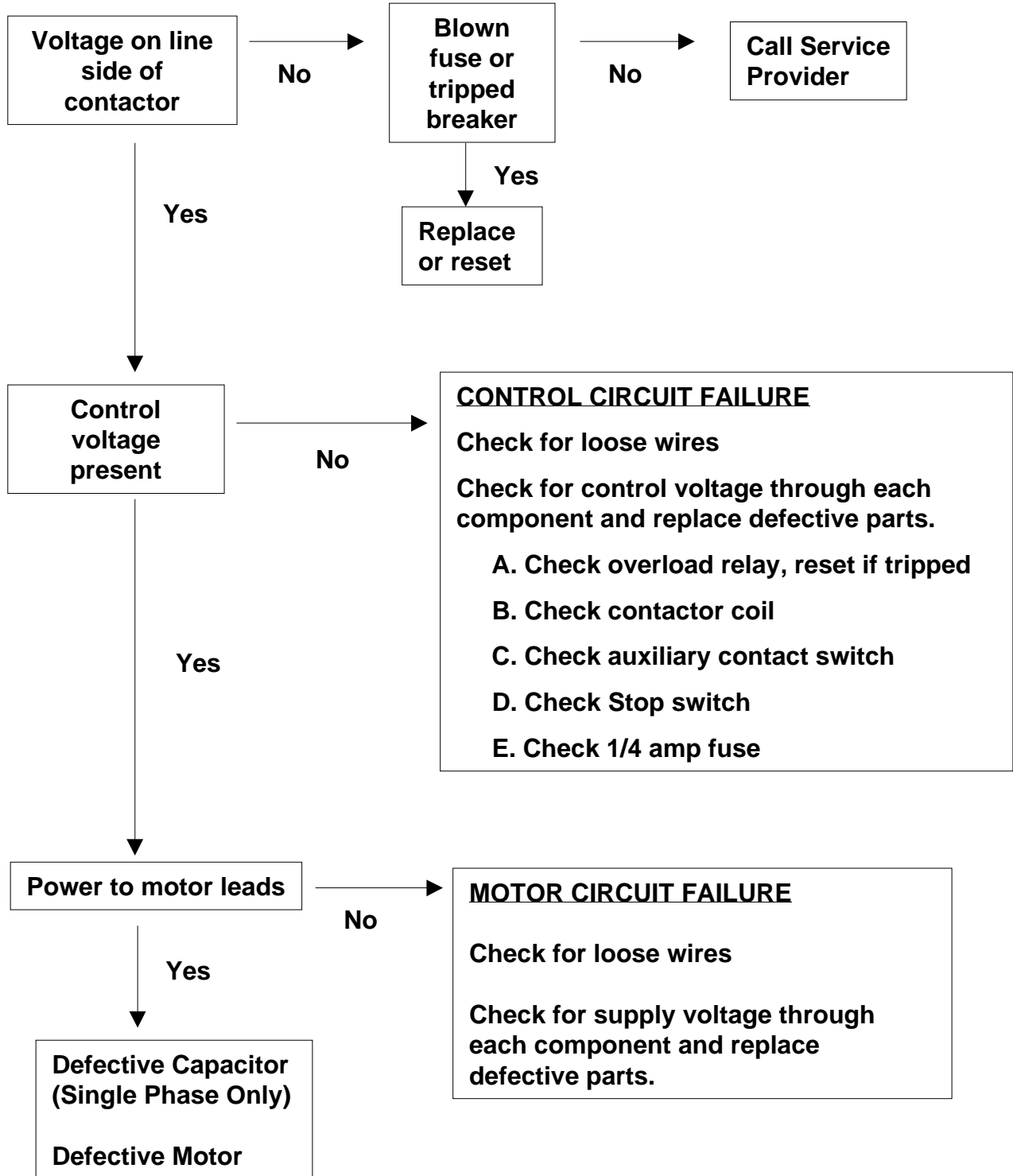
Average Hours Per Month = 730

## Fan Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Fan will not run.	<p>Blown fuse or breaker in disconnect switch</p> <p>Main power not turned on</p> <p>Defective wiring or loose connection</p> <p>Incorrect wire size</p> <p>Overload kicked out</p> <p>Defective motor</p> <p>Defective magnetic contactor</p>	<p>Replace fuse or reset breakers.</p> <p>Turn power on at all disconnects ahead of the unit</p> <p>Follow wiring diagram and tighten any loose connections</p> <p>See wire size charts for proper wire size and change if needed</p> <p>Check manual reset, push in to reset</p> <p>Replace motor</p> <p>Check the magnetic contactor</p>
Fan runs for a short period of time then shuts off	<p>Undersize wiring</p> <p>Low line voltage at the installation</p> <p>Power failure</p> <p>Magnetic contactor malfunctioning</p> <p>Defective start/stop button</p> <p>Overload setting incorrect</p>	<p>Check to see that power supply wires are the proper size, contact you local power company.</p> <p>Call power company after making sure wire size is correct.</p> <p>Change magnetic contactor</p> <p>Replace necessary part</p> <p>Adjust overload to proper setting</p>
Fan makes ticking noise	<p>Fan blade hitting housing</p> <p>Motor bearing bad</p>	<p>Stop fan and turn off power. Remove fan guard and check to see if fan blade is hitting the housing. Adjust motor or fan wheel position to obtain proper clearance.</p> <p>Replace motor bearing</p>
Fan vibrates	<p>Fan not level</p> <p>Fan has dirt deposits on blade</p> <p>Motor shaft is bent</p> <p>Blade not mounted properly on shaft</p> <p>Blade out of balance</p>	<p>Level fan</p> <p>Clean blade</p> <p>Replace motor</p> <p>Mount blade properly on shaft</p> <p>Replace or have blade rebalanced</p>

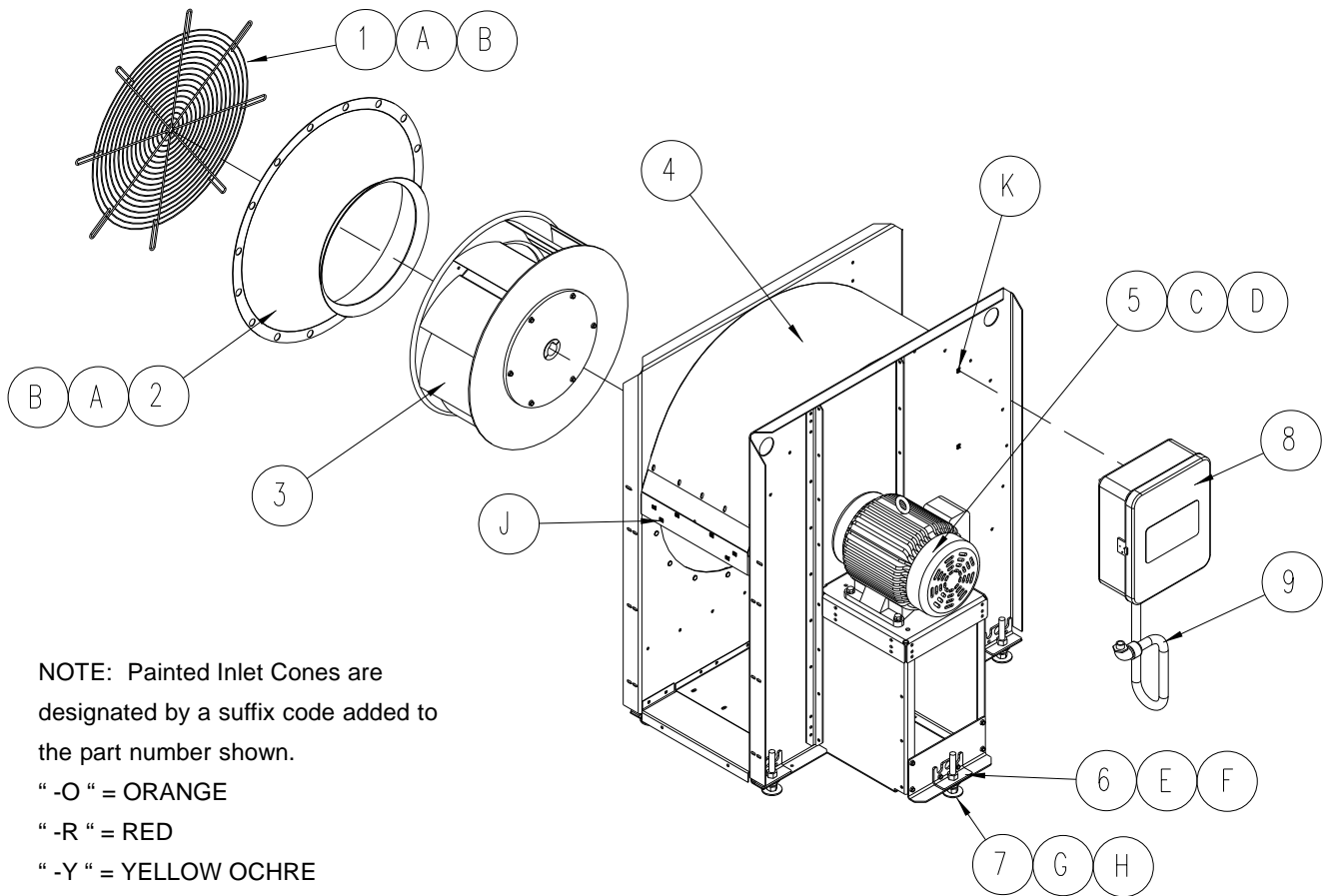


Fan Troubleshooting Flow Chart



# PARTS

## Main Assembly - 1750 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“ -O “ = ORANGE

“ -R “ = RED

“ -Y “ = YELLOW OCHRE

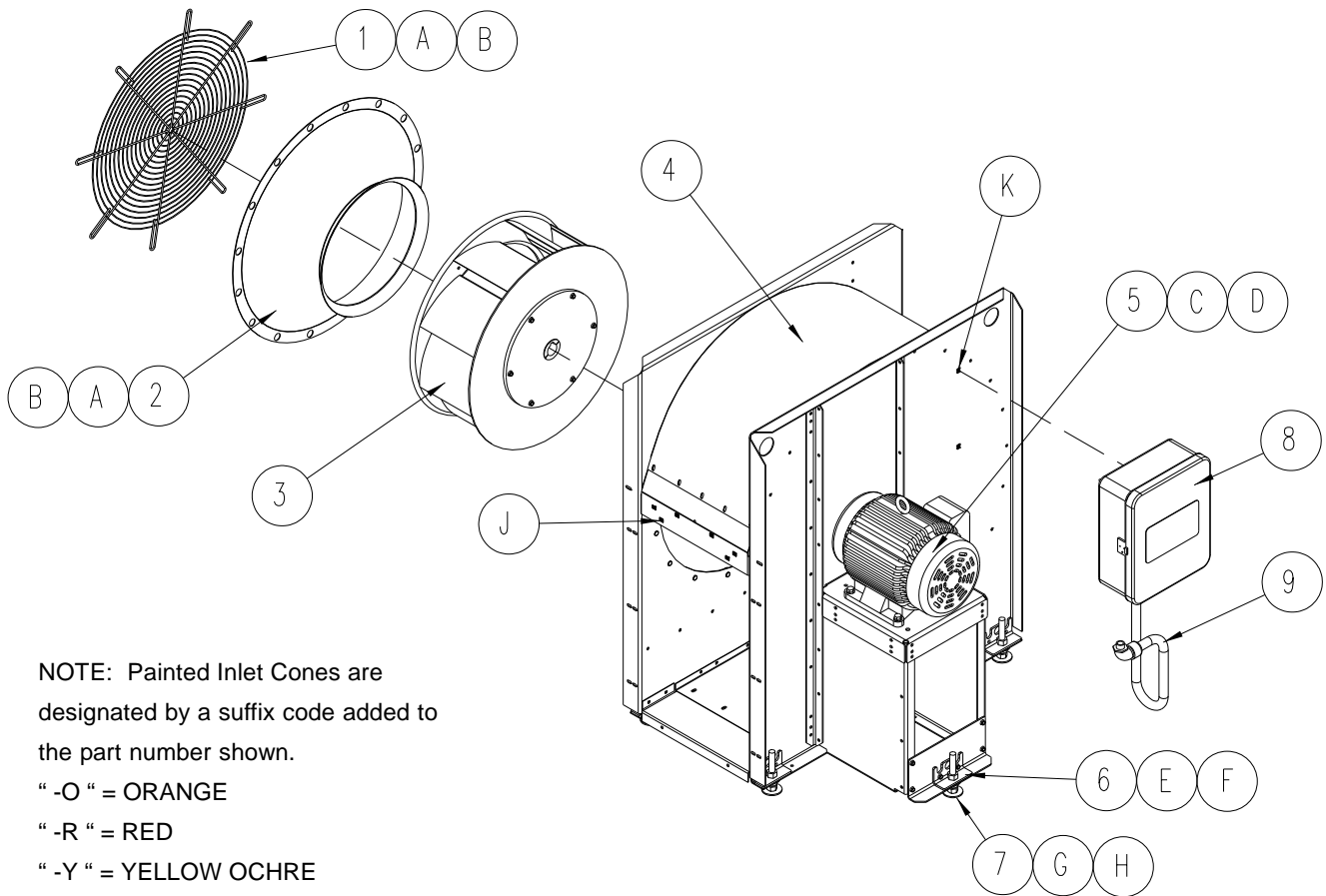
### Model: CF-3

Key	Qty	Part Number	Description
1	1	C-7746	Grill Guard
2	1	C-7747	Inlet Cone - Painted
3	1	CH-6878	Blade and Hub Assembly
4	1	C-8136	Housing Assembly
5	1	C-7979	Motor - 1 Phase 230 Volt
		C-7984	Motor - 3 Phase 208-230/460 Volt
		300-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

### Model: CF-5

Key	Qty	Part Number	Description
1	1	C-7748	Grill Guard
2	1	C-7749	Inlet Cone - Painted
3	1	C-956	Blade and Hub Assembly
4	1	C-8114	Housing Assembly
5	1	C-7980	Motor - 1 Phase 230 Volt
		C-7985	Motor - 3 Phase 208-230/460 Volt
		500-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

Main Assembly - 1750 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

Model: CF-7.5

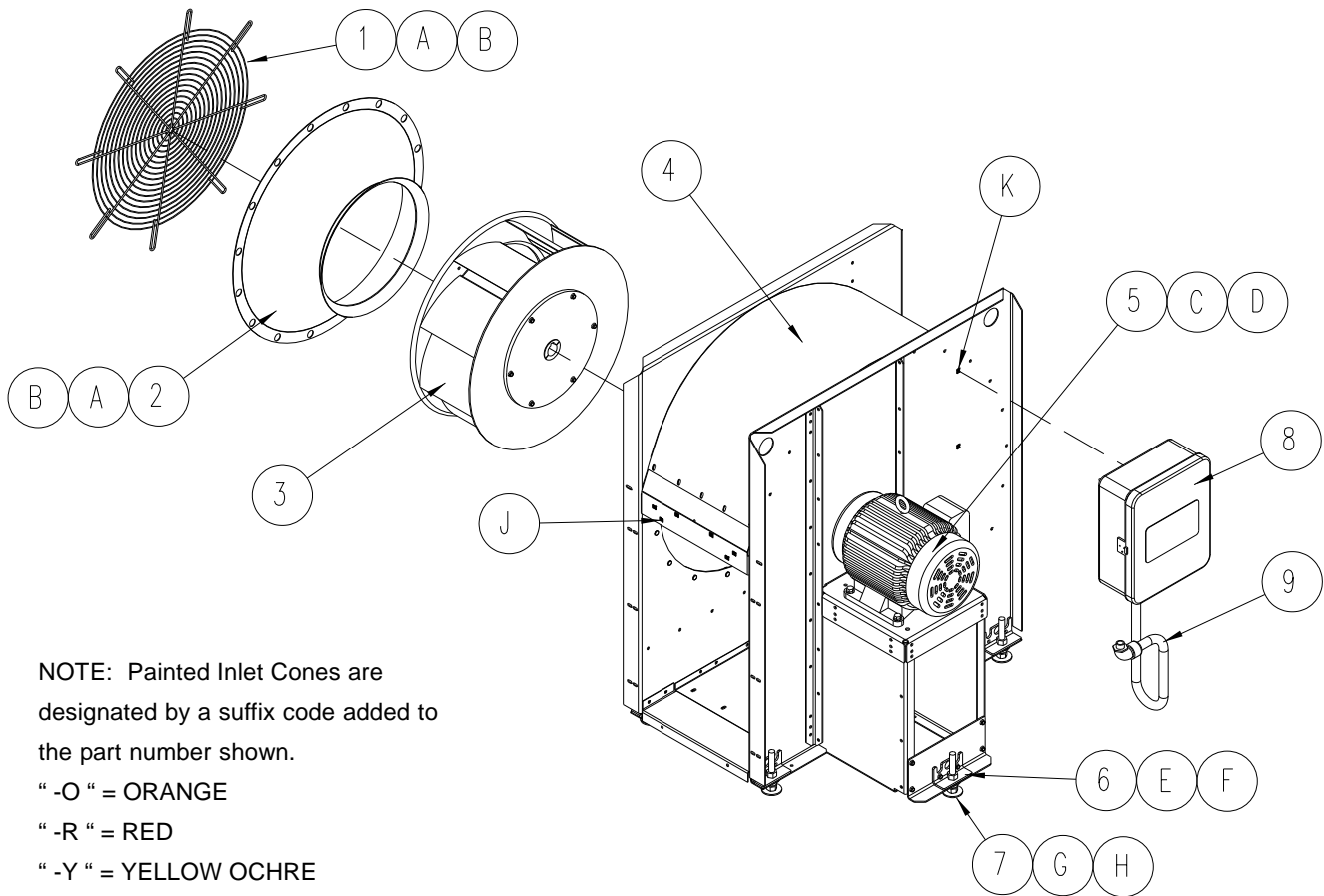
Key	Qty	Part Number	Description
1	1	C-7748	Grill Guard
2	1	C-7749	Inlet Cone - Painted
3	1	C-957	Blade and Hub Assembly
4	1	C-8108	Housing Assembly
5	1	C-7981	Motor - 1 Phase 230 Volt
		C-7986	Motor - 3 Phase 208-230/460 Volt
		712-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

Model: CF-10

Key	Qty	Part Number	Description
1	1	C-7750	Grill Guard
2	1	C-7751	Inlet Cone - Painted
3	1	C-8533	Blade and Hub Assembly
4	1	C-8528	Housing Assembly
5	1	C-7982	Motor - 1 Phase 230 Volt
		C-7987	Motor - 3 Phase 230/460 Volt
		1000-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	6	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

# PARTS

## Main Assembly - 1750 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

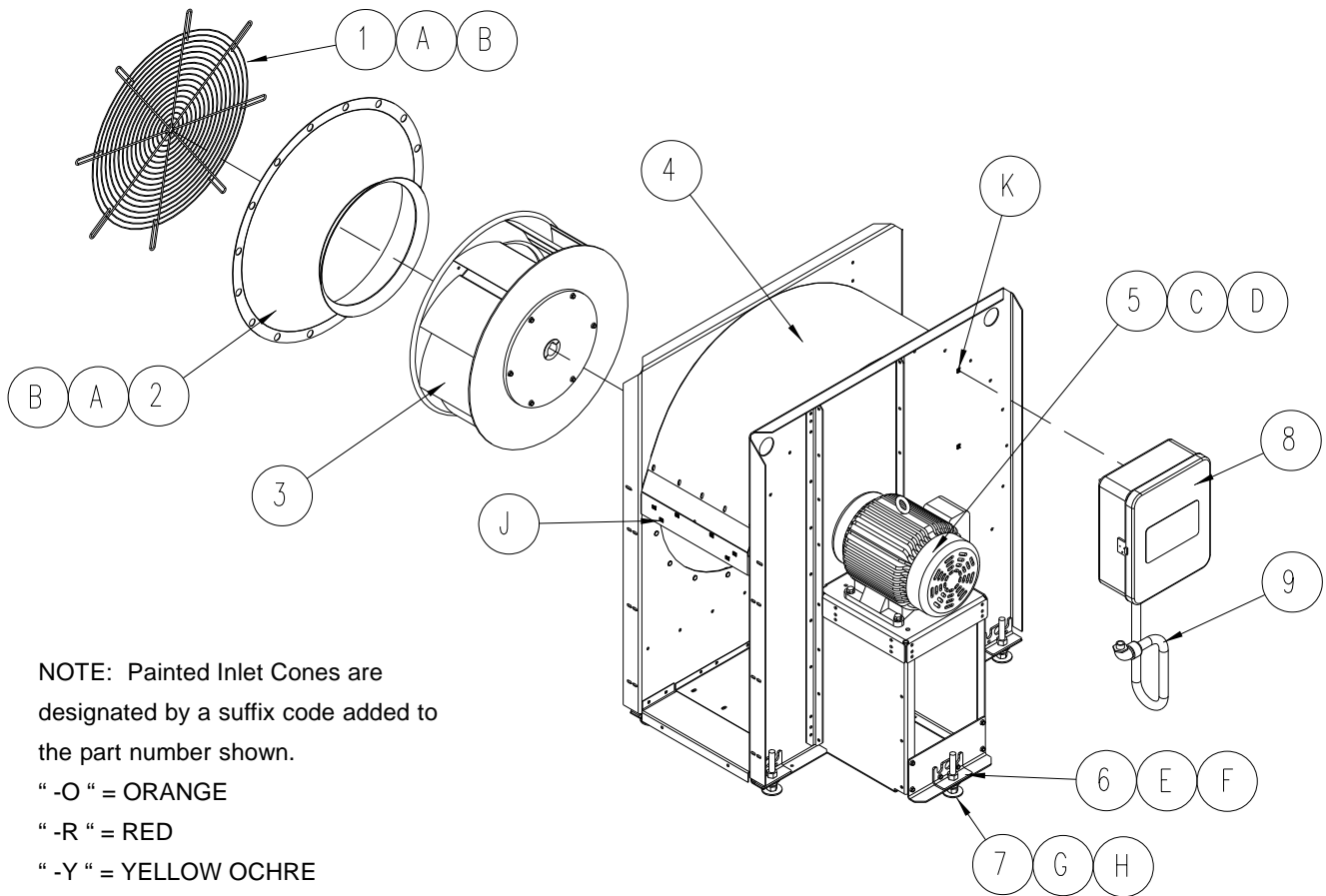
### Model: CF-15

Key	Qty	Part Number	Description
1	1	C-7750	Grill Guard
2	1	C-7751	Inlet Cone - Painted
3	1	C-960	Blade and Hub Assembly
4	1	C-8093	Housing Assembly
5	1	C-7983	Motor - 1 Phase 230 Volt
		C-7988	Motor - 3 Phase 208-230/460 Volt
		1500-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	6	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

### Model: CF-20

Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard
2	1	C-7753	Inlet Cone - Painted
3	1	CH-2076	Blade and Hub Assembly
4	1	C-8097	Housing Assembly
5	1	C-7989	Motor - 3 Phase 208-230/460 Volt
		2000-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

Main Assembly - 1750 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

Model: CF-25

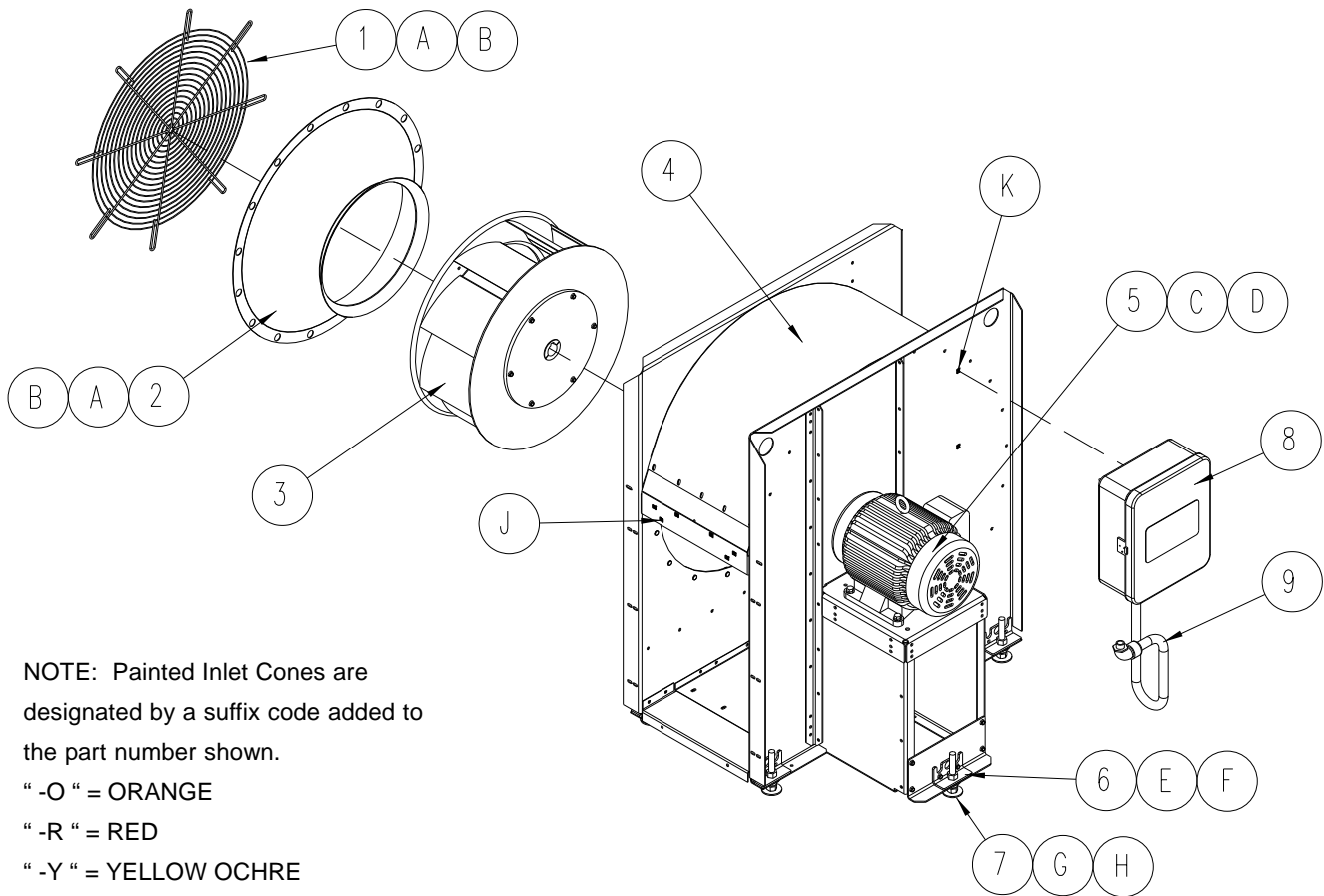
Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard
2	1	C-7753	Inlet Cone - Painted
3	1	C-2046	Blade and Hub Assembly
4	1	C-8096	Housing Assembly
5	1	C-7990	Motor - 3 Phase 208-230/460 Volt
		2500-3-5	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

Model: CF-30

Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard
2	1	C-7754	Inlet Cone - Painted
3	1	C-7319	Blade and Hub Assembly
4	1	C-8125	Housing Assembly
5	1	C-7991	Motor - 3 Phase 208-230/460 Volt
		CH-6917	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

# PARTS

## Main Assembly - 1750 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

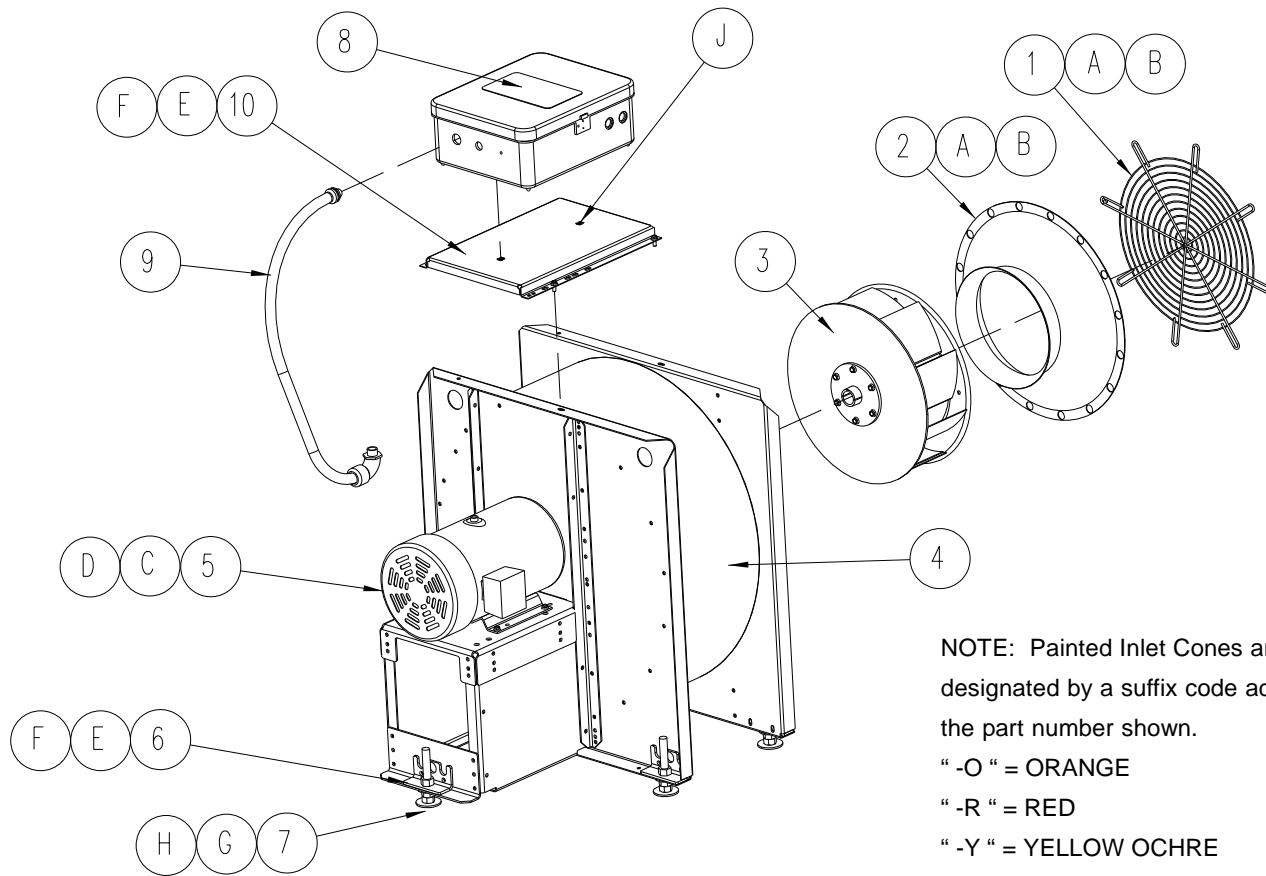
### Model: CF-40

Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard
2	1	C-7754	Inlet Cone - Painted
3	1	C-7320	Blade and Hub Assembly
4	1	C-8130	Housing Assembly
5	1	C-7992	Motor - 3 Phase 208-230/460 Volt
		CH-6918	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

### Model: CF-50

Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard
2	1	C-7754	Inlet Cone - Painted
3	1	C-8517	Blade and Hub Assembly
4	1	C-8233	Housing Assembly
5	1	C-7993	Motor - 3 Phase 208-230/460 Volt
		C-8003	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	3	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN
K	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

**Main Assembly - 3500 rpm Fans**



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.  
 “-O “ = ORANGE  
 “-R “ = RED  
 “-Y “ = YELLOW OCHRE

**Model: CHS-3**

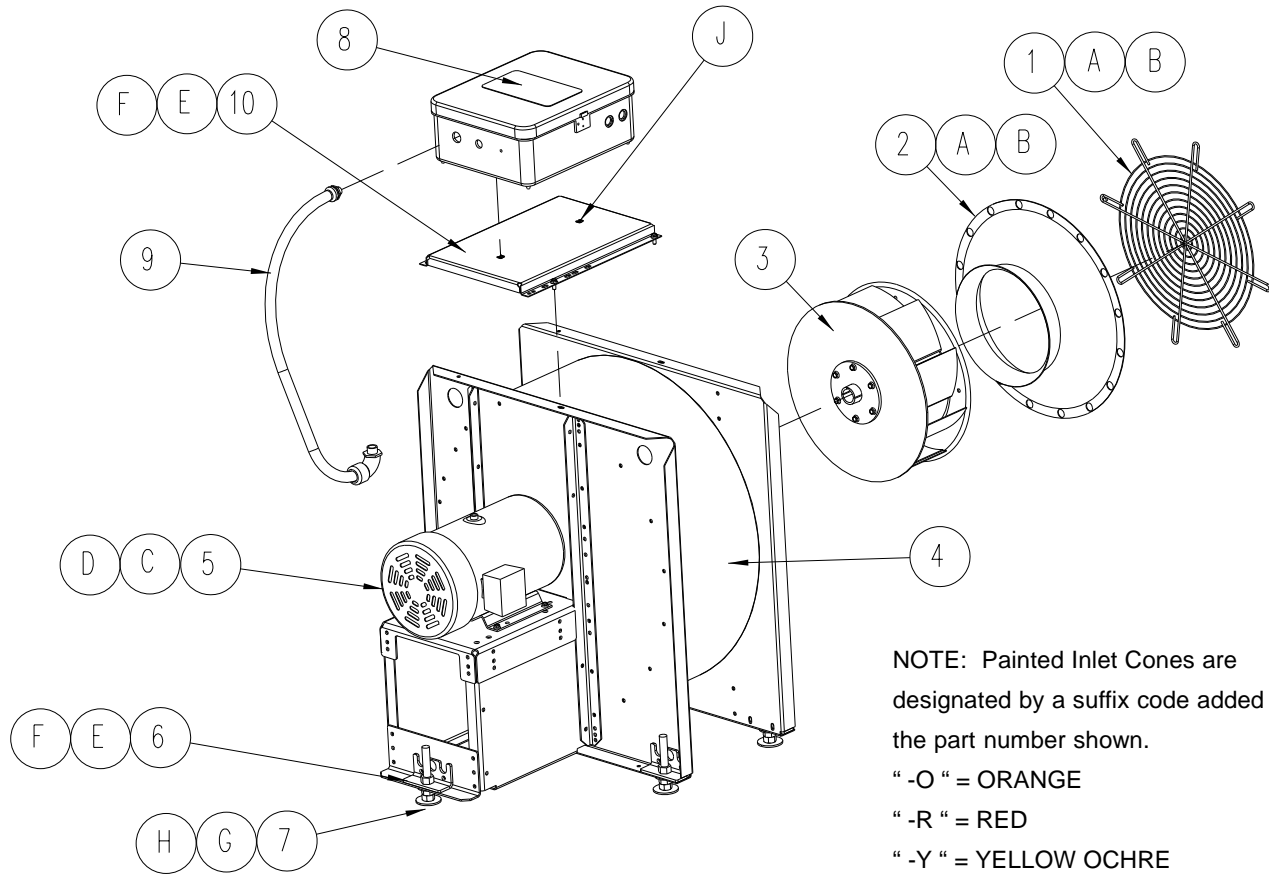
Key	Qty	Part Number	Description
1	1	C-7742	Grill Guard
2	1	C-7743	Inlet Cone - Painted
3	1	FH-5464	Blade and Hub Assembly
4	1	C-8223	Housing Assembly
5	1	FH-5474	Motor - 1 Phase 230 Volt
		FH-5475	Motor - 3 Phase 208-230/460 Volt
		CH-6826	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

**Model: CHS-5**

Key	Qty	Part Number	Description
1	1	C-7742	Grill Guard
2	1	C-7743	Inlet Cone - Painted
3	1	FH-5465	Blade and Hub Assembly
4	1	C-8222	Housing Assembly
5	1	FH-5476	Motor - 1 Phase 230 Volt
		FH-5477	Motor - 3 Phase 208-230/460 Volt
		CH-6827	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

# PARTS

## Main Assembly - 3500 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

### Model: CHS-7.5

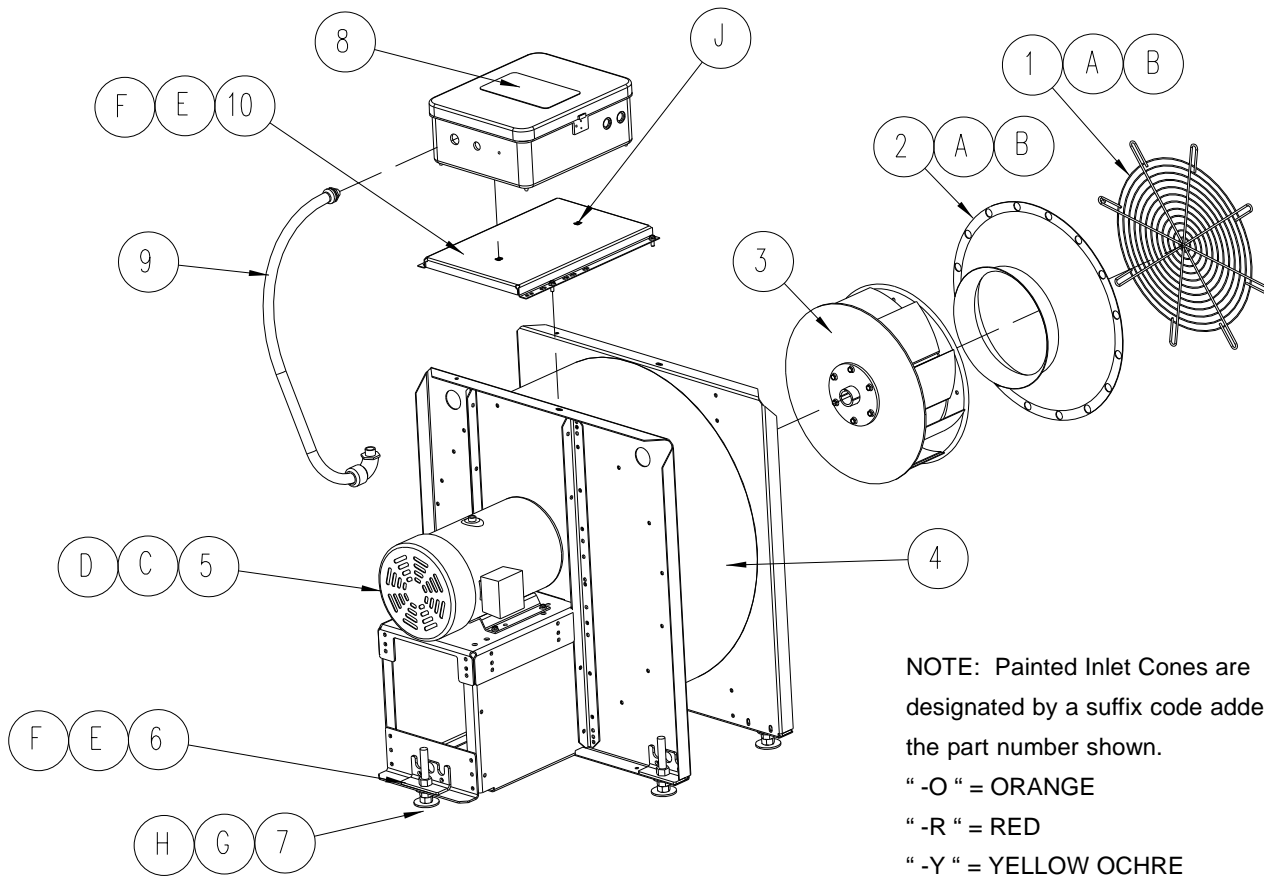
Key	Qty	Part Number	Description
1	1	C-7744	Grill Guard
2	1	C-7745	Inlet Cone - Painted
3	1	FH-5466	Blade and Hub Assembly
4	1	C-8214	Housing Assembly
5	1	FH-5478	Motor - 1 Phase 230 Volt
		FH-5479	Motor - 3 Phase 208-230/460 Volt
		CH-6828	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

### Model: CHS-10

Key	Qty	Part Number	Description
1	1	C-7744	Grill Guard
2	1	C-7745	Inlet Cone - Painted
3	1	FH-5467	Blade and Hub Assembly
4	1	C-8156	Housing Assembly
5	1	FH-5480	Motor - 1 Phase 230 Volt
		FH-5481	Motor - 3 Phase 230/460 Volt
		CH-6829	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN



Main Assembly - 3500 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.  
 “-O “ = ORANGE  
 “-R “ = RED  
 “-Y “ = YELLOW OCHRE

Model: CHS-15

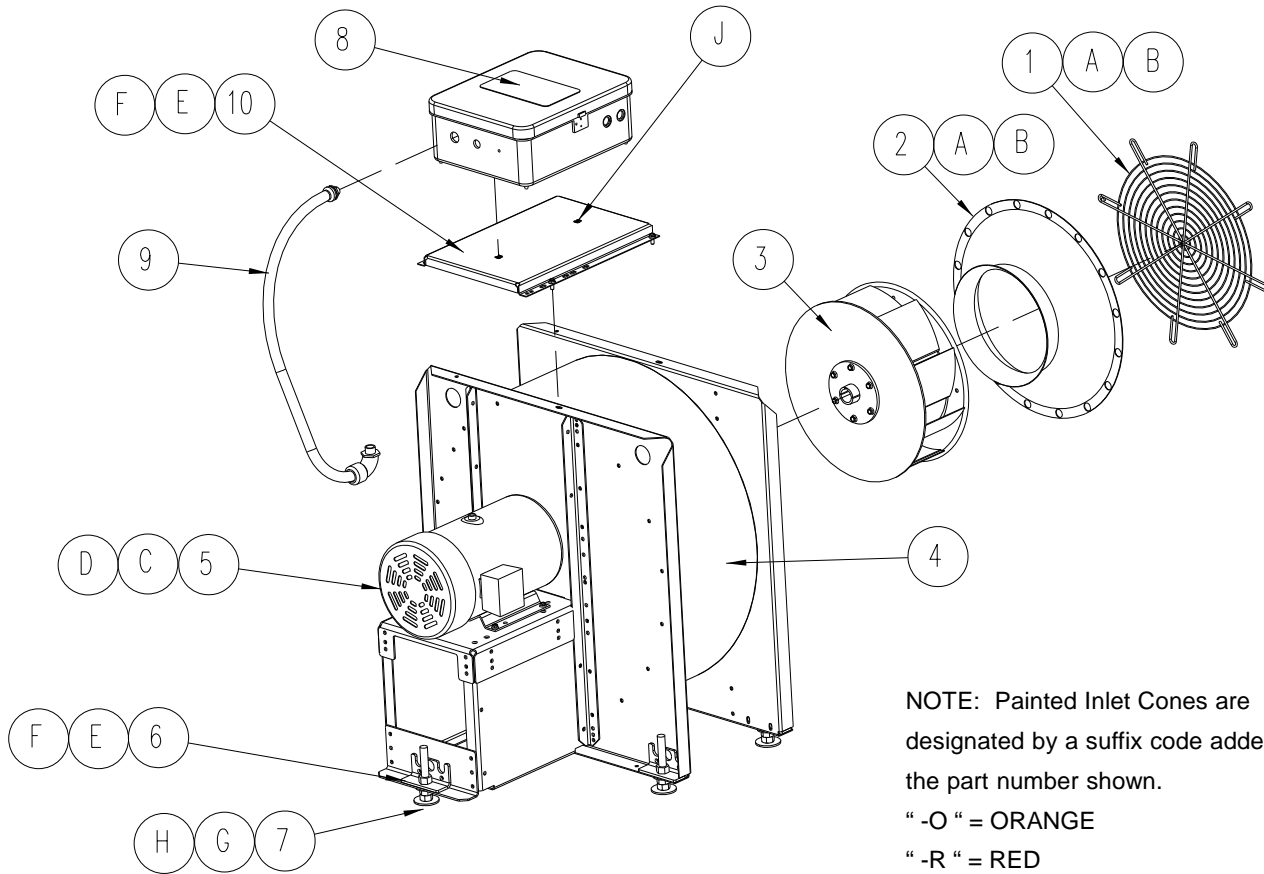
Key	Qty	Part Number	Description
1	1	C-7744	Grill Guard
2	1	C-7745	Inlet Cone - Painted
3	1	FH-5468	Blade and Hub Assembly
4	1	C-8162	Housing Assembly
5	1	FH-5483	Motor - 3 Phase 208-230/460 Volt
		CH-6830	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
D	4	S-968	NUT FLANGWZ 3/8-16 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

Model: CHS-20

Key	Qty	Part Number	Description
1	1	C-7746	Grill Guard
2	1	C-7747	Inlet Cone - Painted
3	1	FH-5469	Blade and Hub Assembly
4	1	C-8194	Housing Assembly
5	1	FH-5484	Motor - 3 Phase 208-230/460 Volt
		CH-6832	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

# PARTS

## Main Assembly - 3500 rpm Fans



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“-O “ = ORANGE

“-R “ = RED

“-Y “ = YELLOW OCHRE

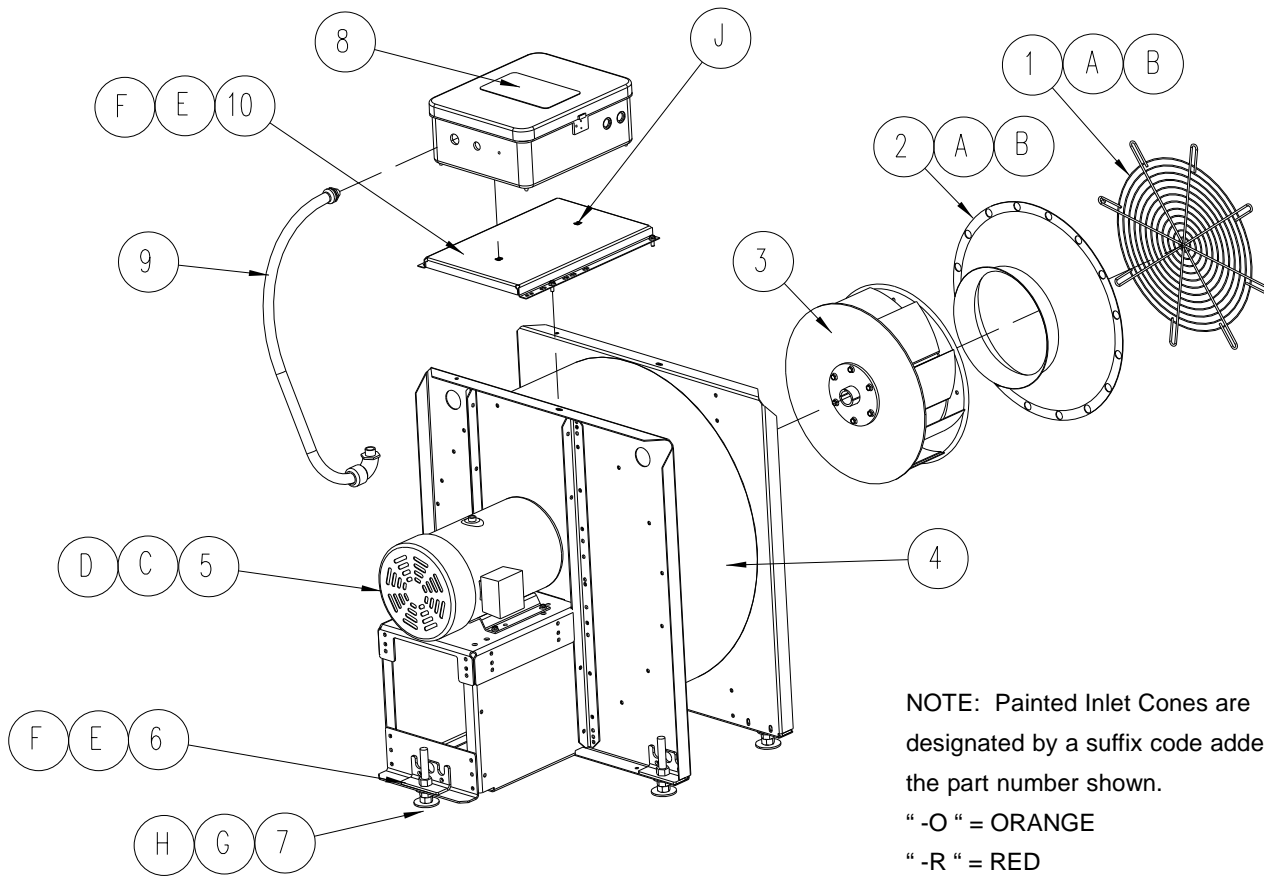
### Model: CHS-30

Key	Qty	Part Number	Description
1	1	C-7746	Grill Guard
2	1	C-7747	Inlet Cone - Painted
3	1	FH-5758	Blade and Hub Assembly
4	1	C-8196	Housing Assembly
5	1	CH-5582	Motor - 3 Phase 208-230/460 Volt
		CH-6836	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

### Model: CHS-40

Key	Qty	Part Number	Description
1	1	C-7746	Grill Guard
2	1	C-7747	Inlet Cone - Painted
3	1	FH-5758	Blade and Hub Assembly
4	1	C-8196	Housing Assembly
5	1	CH-5582	Motor - 3 Phase 230/460 Volt
		CH-6836	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN

Main Assembly - 3500 rpm Fans



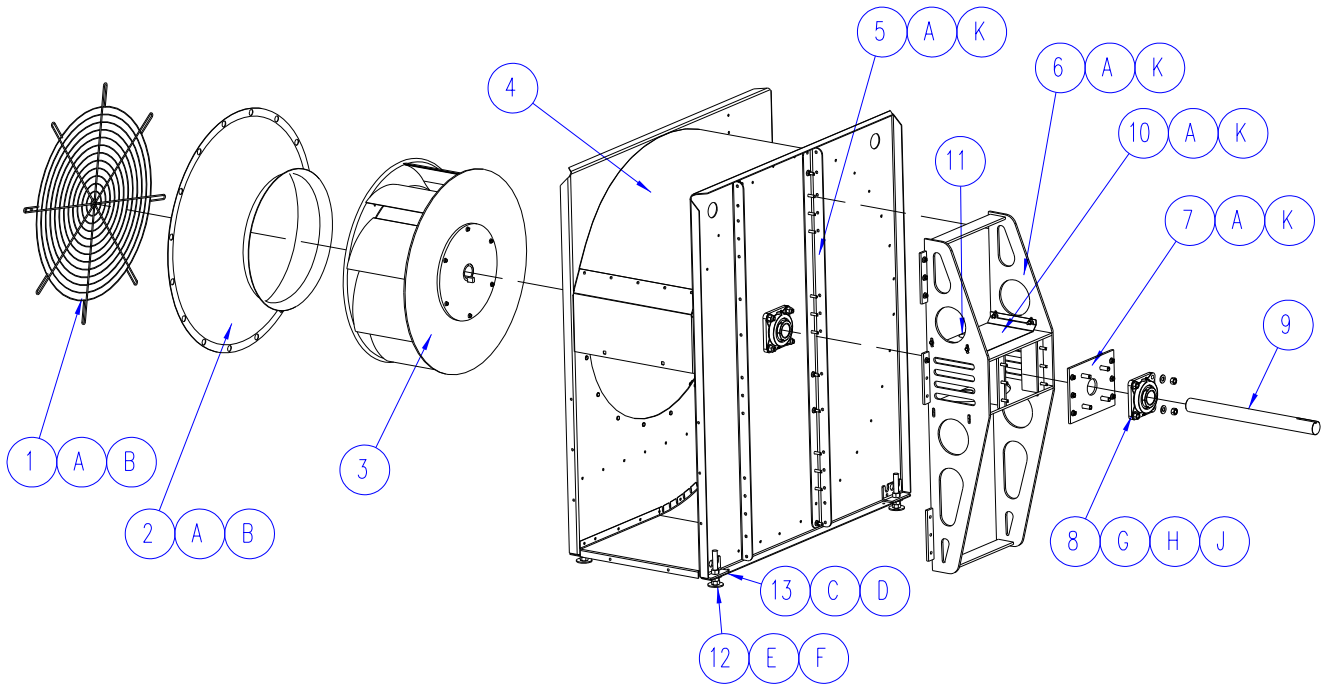
NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.  
 "-O" = ORANGE  
 "-R" = RED  
 "-Y" = YELLOW OCHRE

Model: CHS-50

Key	Qty	Part Number	Description
1	1	C-7748	Grill Guard
2	1	C-7749	Inlet Cone - Painted
3	1	FH-5852	Blade and Hub Assembly
4	1	C-8197	Housing Assembly
5	1	CH-5583	Motor - 3 Phase 208-230/460 Volt
		CH-6838	Motor - 3 Phase 575 Volt
6	5	C-8322	Leg Bracket
7	5	C-7519	Leveling Leg
8	1	Reference	Control Box Assembly
9	1	Reference	Conduit Assembly
10	1	C-8261	Control Box Adapter Plate - CHS
A	16	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	4	S-8506	NUT FLANGWZ 1/2-13 ZN
D	4	S-8856	BOLT FLNGS 1/2-13x1-3/4 ZN GR5
E	14	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
F	14	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
G	5	S-866	WASHER FLAT 3/4 USS ZN
H	10	S-234	NUT HEX 3/4-10 ZN GR5
J	4	S-9344	RETAINER NUT 5/16-18 x .160 ZN

# PARTS

## Main Assembly - Single Inlet Direct Drive Fan



NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

“ -O “ = ORANGE

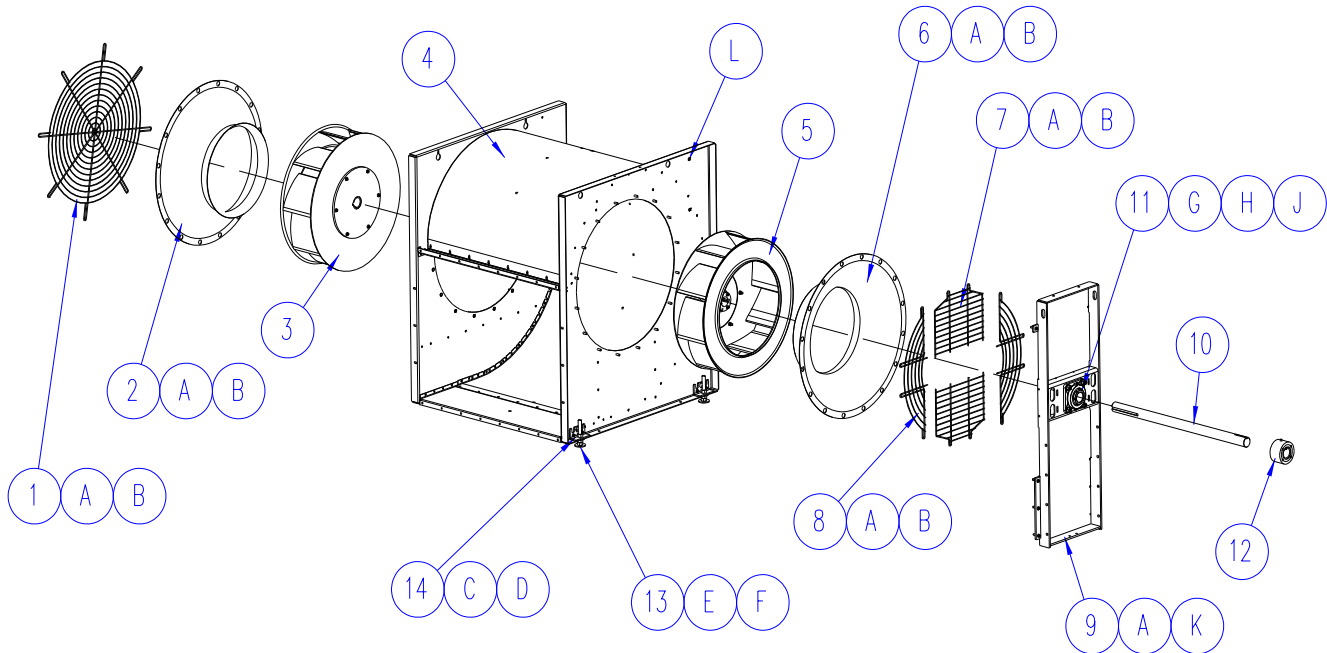
“ -R “ = RED

“ -Y “ = YELLOW OCHRE

### Single Inlet Direct Drive Fan - Main Assembly

Key	Qty	Part Number	Description
1	1	C-7752	Grill Guard: 30"/33" Painted
2	1	C-7753	Inlet Cone: 30" Painted - 20 Hp
	1	C-7754	Inlet Cone: 33" Painted - 30,40,50 Hp
3	1	C-8071	Blade Asy 30" 1750-20 Hp D.D.S.I Std
	1	C-8072	Blade Asy 33" 1750-30 Hp D.D.S.I Std
	1	C-8073	Blade Asy 33" 1750-40 Hp D.D.S.I Std
	1	C-8574	Blade Asy 33" 1750-50 Hp D.D.S.I Std
4	1	C-8145	Housing Asy - 30"Whl-20Hp D.D.S.I
	1	C-8228	Housing Asy - 33"Whl-30Hp D.D.S.I
	1	C-8229	Housing Asy - 33"Whl-40Hp D.D.S.I
	1	C-8298	Housing Asy - 33"Whl-50Hp D.D.S.I
	2	C-8296	Stiffener: Hvy Long 30-50Hp D.D.S.I
5	1	C-7741	Bearing Mount Weldment
6	1	C-7735	Bearing Mount Bearing Plate
7	1	C-7735	Bearing Mount Bearing Plate
8	2	C-8395	Bearing-Griptiontight 211 2.188 4B
9	1	C-8461	Drive Shaft-Si Dd Cent 25.00"
10	2	C-7736	Bearing Mount Shaft Guard
11	1	HH-7041	Plug 2" Plastic Hole
12	4	C-7519	Leveling Leg
13	2	C-8322	Leveling Leg Brkt - .438 Holes
A	REF	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	24	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	10	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
D	10	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
E	4	S-866	WASHER FLAT 3/4 USS ZN
F	8	S-234	NUT HEX 3/4-10 ZN GR5
G	8	S-4329	BOLT HHCS 5/8-11x2 YW ZN GR8
H	8	S-6494	NUT LOCK 5/8-11 ZN GR5 DEFORMD
J	16	S-7400	WASHER FLAT 5/8 SAE ZN GR2
K	REF	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5

### Main Assembly - Double Inlet Fan



#### Double Inlet Fan - Main Assembly

Key	Qty	Part Number	Description
1	1	c-7752	Grill Guard: 30"/33" Painted
2	1	C-7040	Blade Asy D.I. 30Hp Std
	1	C-7315	Blade Asy D.I. 40Hp Std
	1	C-7044	Blade Asy D.I. 50Hp Std
3	1	C-7753	Inlet Cone: 30" Painted
4	1	C-8188	C.F D.I Housing Asy: Bolted
5	1	C-7042	Blade Asy D.I. 30Hp Rev
	1	C-7316	Blade Asy D.I. 40Hp Rev
	1	C-7045	Blade Asy D.I. 50Hp Rev
6	1	C-7753-G	Inlet Cone: 30" Gray C.F
7	2	C-8415-W	Guard- Grill D.I C.F Top/Bot White
8	2	C-8414-W	Guard- Grill D.I C.F Side- White
9	1	C-8409	D.I Ext Bearing Mnt Weldment
10	1	C-8396	D.I Drive Shaft - 2.188"
11	2	C-8395	Bearing-Griptight 211 2.188 4B
12	1	C-8570	Companion Flange Kit- C.F Fans
13	4	C-7519	Leveling Leg
14	2	C-8322	Leveling Leg Brkt - .438 Holes
A	63	S-968	NUT FLANGWZ 3/8-16 ZN GR5
B	52	S-3671	WASHER FENDER 25/64x1-1/2 ZN
C	32	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
D	32	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
E	2	S-866	WASHER FLAT 3/4 USS ZN
F	4	S-234	NUT HEX 3/4-10 ZN GR5
G	8	S-4329	BOLT HHCS 5/8-11x2 YW ZN GR8
H	8	S-6494	NUT LOCK 5/8-11 ZN GR5 DEFORMD
J	17	S-7400	WASHER FLAT 5/8 SAE ZN GR2
K	31	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
L	2	S-9344	RETAINER NUT 5/16-18 x .160 ZN

NOTE: Painted Inlet Cones are designated by a suffix code added to the part number shown.

"-O " = ORANGE

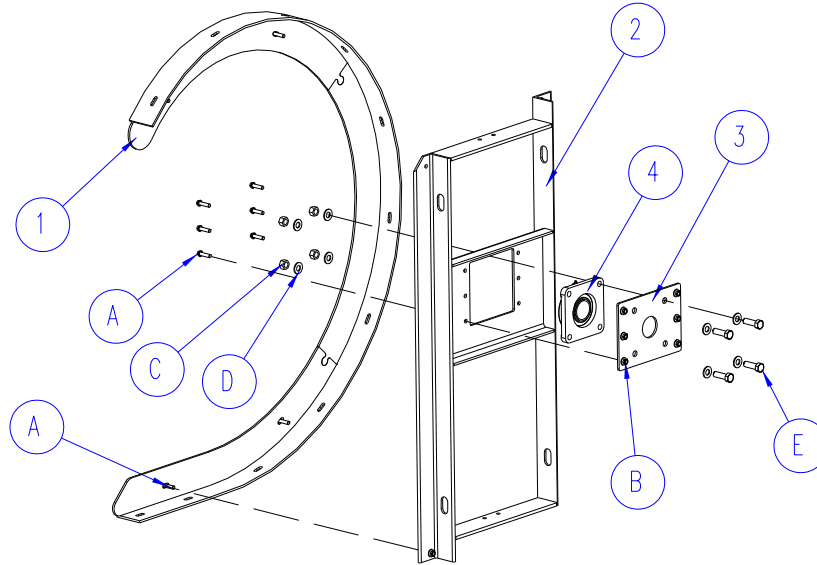
"-R " = RED

"-Y " = YELLOW OCHRE

#### Grease Hose Assembly (not shown)

Key	Qty	Part Number	Description
REF	1	C-7865	HOSE, GREASE 30" W/ 1/4" NPT
REF	0.1	C-8441	GREASE-10PK CART-MOBIL SHC 100
REF	1	HF-7226	NIPPLE 1/8xCLOSE STD BLACK
REF	2	HF-7227	COUPLING 1/4 STD BLK STEEL S/T
REF	1	S-2121	WASHER FLAT 1/2".562X1.375X.10
REF	2	HF-7228	BUSHING 1/4-1/8 BLK HEX

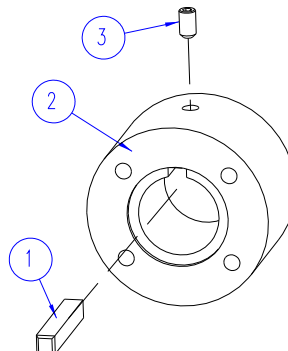
**Internal Bearing Arch Assembly - Double Inlet Fans**



**Internal Bearing Mount Assembly**

Key	Qty	Part Number	Description
1	1	C-7709	Bearing Arch Weldment
2	1	C-8446	C.F D.I Internal Bearing Weld-04
3	1	C-8447	D.I C.F Int Bear Mnt Plate
4	1	C-8395	Bearing-Griptight 211 2.188 4B
A	10	S-9064	BOLT FLNGS 3/8-16x1-1/2 ZN GR5
B	10	S-968	NUT FLANGWZ 3/8-16 ZN GR5
C	4	S-6494	NUT LOCK 5/8-11 ZN GR5 DEFORMD
D	8	S-7400	WASHER FLAT 5/8 SAE ZN GR2
E	4	S-4329	BOLT HHCS 5/8-11x2 YW ZN GR8

**Companion Flange Kit - C-8570**



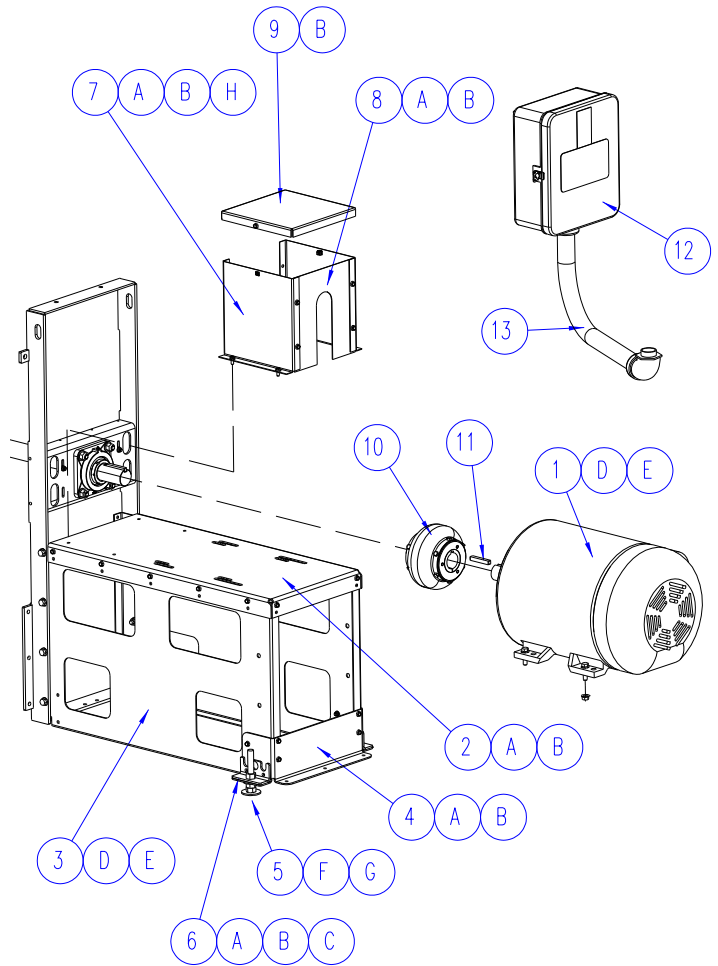
**C-8570 Companion Flange Kit**

Key	Qty	Part Number	Description
1	1	C-8394	KEY: 1/2" SQ. X 3.25"
2	1	C-8550	FLANGE- COMPANION 2.188" SHAFT
3	1	S-9355	SCREW SET 7/16-20x3/4 SKT CUP

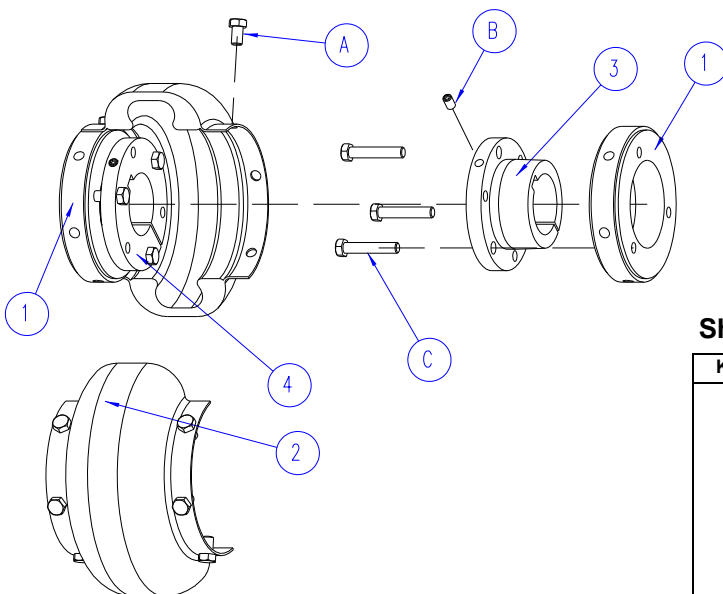
## Motor Drives - Double Inlet Fans

### External Bearing Mount Assembly

Key	Qty	Part Number	Description
1	1	3000-3	Motor 30Hp 3Ph 1800Rpm
	1	4000-3	Motor 40Hp 3Ph 1800Rpm
	1	5000-3	Motor 50Hp 3Ph 1800Rpm
2	1	C-8403	D.I Motor Mnt Top Plate
3	2	C-8404	D.I Motor Mnt Side Plate
4	1	C-8405	D.I Motor Mnt Leg Attach Angle
5	2	C-7519	Leveling Leg
6	2	C-8322	Leveling Leg Brkt - .438 Holes
7	2	C-8417	Guard Side D.I C.F Coupling
8	1	C-8418	Guard Front D.I C.F Coupling
9	1	C-8449	Guard Top Cover Di Cf Coupling
10	1	Reference	Shaft Coupling
11	2	C-8394	Key: 1/2" Sq. X 3.25"
12	1	Reference	Control Box Assembly
13	1	Reference	Conduit Assembly
A	32	S-3611	NUT FLANGWZ 5/16-18 ZN YDP
B	32	S-6606	BOLT FLNGS 5/16-18x3/4 ZN GR5
C	2	S-7470	BOLT FLNG 5/16-18x1 ZN GR5
D	12	S-8506	NUT FLANGWZ 1/2-13 ZN
E	12	S-9062	BOLT FLNGS 1/2-13x1-1/4 ZN GR5
F	2	S-866	WASHER FLAT 3/4 USS ZN
G	2	S-234	NUT HEX 3/4-10 ZN GR5
H	2	090-1709-6	RETAINER NUT 5/16-18 X .120 ZN



### Shaft Coupling

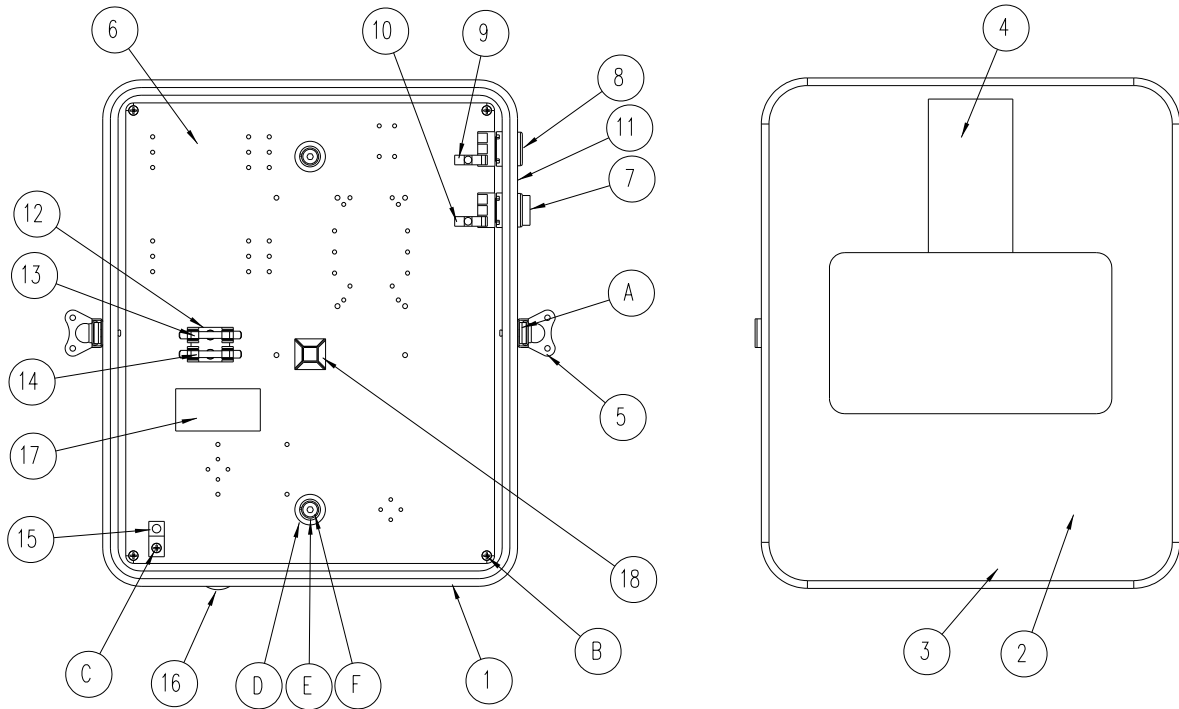


### Shaft Coupling

Key	Qty	Part Number	Description
1	2	C-8411	Coupling Hub - 30 Hqd Steel Qd
2	1	C-8412	Coupling Element Flex W/Bolts (Pair)
3	1	MHC01162	Bushing SF 1-7/8 - 30 Hp
	1	GT3-0068	Bushing QD SF 2-1/8 - 40 & 50 Hp
4	1	CE-00616	Bushing QD SF 2-3/16
A	12	S-7185	BOLT HHCS 3/8-16x5/8 ZN GR2
B	2	S-7371	SCREW SET 5/16-18x1/2 SKT HD
C	6	S-8003	BOLT HHCS 3/8-16x2 ZN GR5

# PARTS

## Control Box Sub- Assembly



Key	Qty	Part Number	Description
1	1	069-1301-6	Control Box-Cf Fan 3/4 Conduit
2	1	069-1376-8	Control Box Lid-Poly Blank
3	5	022-1033-4	Gasket 1/4X1/2 (Ref 1B-0930)
4	1	DC-1224	Decal, Danger Hi-Voltage (Lg)
5	2	D03-0696	Farmfans Cntrl. Box Latch
6	1	C-8166	Backing Plate - Cf Fan Control
7	1	C-8052	Switch P.B. Red Ext
8	1	C-8053	Switch P.B. Green FI
9	1	D63-0006	Block, Contact N/O
10	1	D63-0013	Block, Contact N/C
11	1	420-1436-5	Decal-Start/Stop Cfl Fans
12	1	FH-1058	Fuse Block
13	2	FH-1059	Fuse 5 Amp,250V,Fast Acting
14	2	00147938	Fuse 1/4Amp,250V,Time Delay
15	1	E160-1137	Lug Ground,#Ta-2 (Csa)
16	1	025-1203-6	Hole Plug - .875 Dia Liquid Tight
17	1	DC-889	Decal Danger High Voltage
18	1	D02-0039	Wire Tie Anchors
A	4	090-1699-9	POP RIVET 1/8 X .501-.625
B	4	090-1705-4	PHILLIPS PHSEMS #8-32 X 3/8
C	3	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
D	4	S-248	WASHER FLAT 3/8 USS ZN YDP GR2
E	2	S-1054	WASHER LOCK SPLIT 3/8 ZN
F	2	090-1714-6	SHOULDER BOLT 3/8 X 1-1/4



**Control Box Assembly - Single Phase 230 Volt**

**CBCF-03-1**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0490	CONTACTOR IEC 3POLE 17.5A CL02
3	1	D03-0476	OVERLOAD IEC 18A CLS20 RT12S
4	1 ft	WR-10RD	WIRE 10 GA STRANDED MTW RED
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F

**CBCF-05-1**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0492	CONTACTOR IEC 3POLE 32A CL04
3	1	D03-0479	OVERLOAD IEC 32A CLS20 RT12V
4	1 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F

**CBCF-07-1**

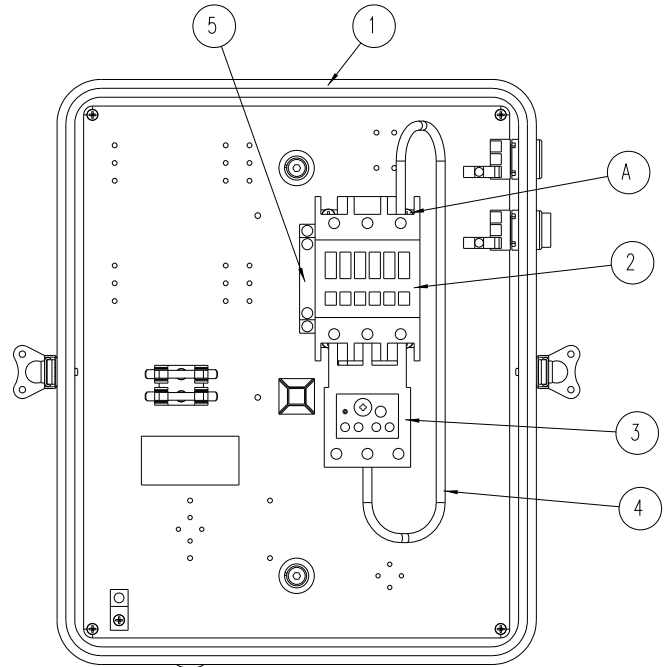
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0494	CONTACTOR IEC 3POLE 48A CL06
3	1	D03-0482	OVERLOAD IEC 30-43A RT22E
4	1 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
5	1	D03-0511	POINTS, AUXILLARY FOR IEC
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN

**CBCF-10-1**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0495	CONTACTOR IEC 3POLE 62A CL07
3	1	D03-0483	OVERLOAD IEC 42-55A RT22G
4	1.3 ft	WR-06RD	WIRE 6 GA. RED
5	1	D03-0511	POINTS, AUXILLARY FOR IEC
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN

**CBCF-15-1**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0497	CONTACTOR IEC 3POLE 80A CL09
3	1	D03-0485	OVERLOAD IEC 64-82A RT22J
4	1.3 ft	WR-06RD	WIRE 6 GA. RED
5	1	D03-0511	POINTS, AUXILLARY FOR IEC
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN



**Common Parts**

Key	Qty	Part Number	Description
3,5,7 hp	4	D02-0039	WIRE TIE ANCHORS
10,15 hp	5	D02-0039	WIRE TIE ANCHORS
REF	16	D03-0247	WIRE TIE 5"PANDUIT #PLT1.5M-M
REF	1	DC-1667	DECAL-WIRING FAN CTL 230V-1PH
REF	1	E105-1100	WIRE KIT-CF/CHS FANS 1&3PH230V

# PARTS

## Control Box Assembly - Three Phase 230 Volt

### CBCF-03-3

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0490	CONTACTOR IEC 3POLE 17.5A CL02
3	1	D03-0475	OVERLOAD IEC 16A CLS20 RT12P
4	0.7 ft	WR-14RD	WIRE 14GA STRANDED MTW RED
5	1.1 ft	WR-14BK	WIRE 14GA STRANDED MTW BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
N/S	1	FH-6998	INSULATOR 18GA. CRIMP CONN.
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

### CBCF-05-3

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0490	CONTACTOR IEC 3POLE 17.5A CL02
3	1	D03-0476	OVERLOAD IEC 18A CLS20 RT12S
4	0.7 ft	WR-10RD	WIRE 10 GA STRANDED MTW RED
5	1.1 ft	WR-10BK	WIRE 10 GA STRANDED MTW BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
N/S	1	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

### CBCF-07-3

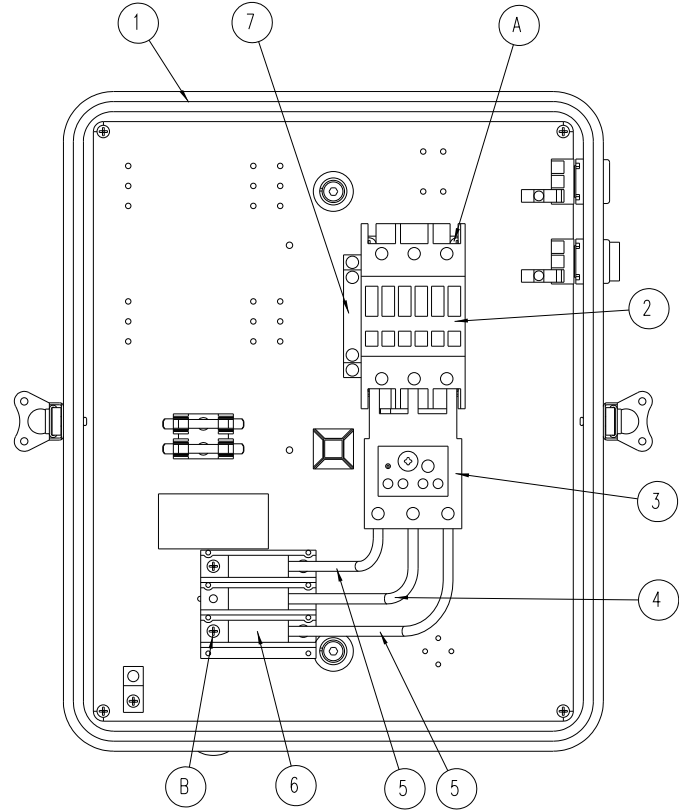
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0492	CONTACTOR IEC 3POLE 32A CL04
3	1	D03-0478	OVERLOAD IEC 26A CLS20 RT12U
4	0.6 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
5	1.1 ft	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
N/S	1	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

### CBCF-10-3

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0492	CONTACTOR IEC 3POLE 32A CL04
3	1	D03-0479	OVERLOAD IEC 32A CLS20 RT12V
4	0.7 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
5	1.1 ft	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
N/S	1	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

### CBCF-15-3

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0494	CONTACTOR IEC 3POLE 48A CL06
3	1	D03-0483	OVERLOAD IEC 42-55A RT22G
4	0.7 ft	WR-06RD	WIRE 6 GA. RED
5	1.1 ft	WR-06BK	WIRE 6 GA. BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
7	1	D03-0511	POINTS, AUXILLARY FOR IEC
N/S	1	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN



### Common Parts

Key	Qty	Part Number	Description
3 hp	2	D02-0039	WIRE TIE ANCHORS
5 to 25 hp	5	D02-0039	WIRE TIE ANCHORS
30,40,50 hp	6	D02-0039	WIRE TIE ANCHORS
N/S	17	D03-0247	WIRE TIE 5"PANDUIT #PLT1.5M-M
N/S	1	DC-1664	DECAL-WIRING FAN CTL 230V-3PH
N/S	1	E105-1100	WIRE KIT-CF/CHS FANS 1&3PH230V
N/S	REF	C-7213	TAPE 3/4 X 66FT 3M PLASTIC

**Control Box Assembly - Three Phase 230 Volt**

**CBCF-25-3**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0496	CONTACTOR IEC 3POLE 68A CL08
3	1	D03-0485	OVERLOAD IEC 64-82A RT22J
4	0.5 ft	WR-04RD	WIRE 4 GA RED WIRE
5	1 ft	WR-04BK	WIRE 4 GA MTW BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
7	1	D03-0511	POINTS, AUXILLARY FOR IEC
N/S	1	FH-6996	WIRE CRIMP #2011S BUCHANAN
N/S	1	FH-6997	INSULATOR #417 IDEAL
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

**CBCF-30-3**

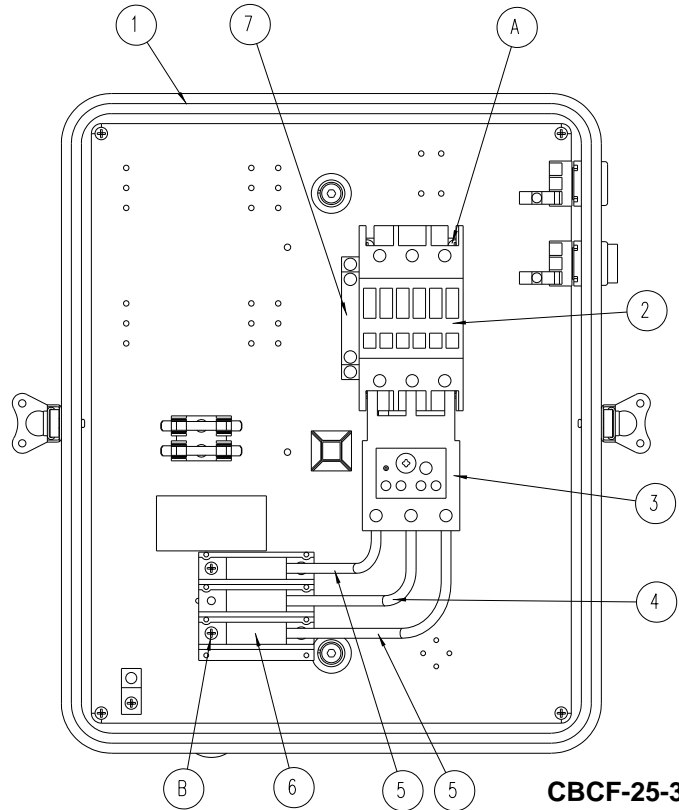
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0498	CONTACTOR IEC 3POLE 96A CL10
3	1	D03-0485	OVERLOAD IEC 64-82A RT22J
4	0.5 ft	WR-04RD	WIRE 4 GA RED WIRE
5	1 ft	WR-04BK	WIRE 4 GA MTW BLACK
6	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
7	1	D03-0511	POINTS, AUXILLARY FOR IEC
N/S	1	FH-6996	WIRE CRIMP #2011S BUCHANAN
N/S	1	FH-6997	INSULATOR #417 IDEAL
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	4	S-2786	SCREW TCSF #8-32x3/8 PHP ZN

**CBCF-40-3**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	056-2275-8	CONTACTOR 150A 110V COIL IEC
3	1	056-2276-6	RELAY - O/L 90-150A ADJ IEC
7	1	056-1951-5	CONTACT - AUX 1NO 1NC IEC SIDE
8	3	056-2072-9	LUG FOR 150A CONTACTOR
N/S	1	FH-6997	INSULATOR #417 IDEAL
N/S	1	FH-7004	CRIMP SLEEVE #412 IDEAL
N/S	1	1EL0559	WIRE NUT-LARGE GRAY
N/S	1	FH-6997	INSULATOR #417 IDEAL
N/S	1	FH-7004	CRIMP SLEEVE #412 IDEAL
A	4	S-8977	SCREW TCSF #10-32x3/4 HWH ZN

**CBCF-50-3**

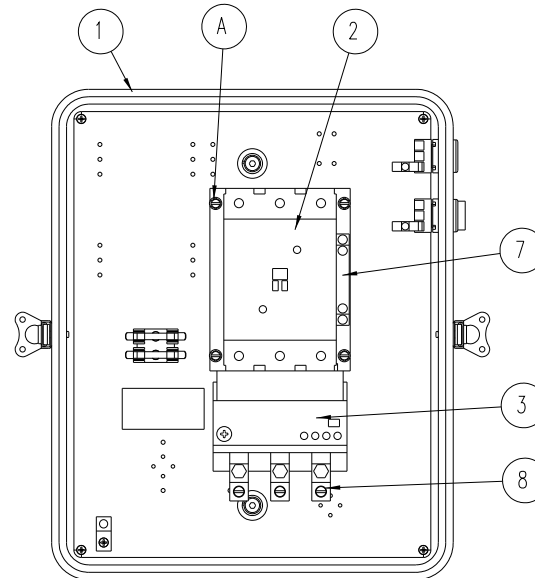
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	056-2275-8	CONTACTOR 150A 110V COIL IEC
3	1	056-2276-6	RELAY - O/L 90-150A ADJ IEC
7	1	056-1951-5	CONTACT - AUX 1NO 1NC IEC SIDE
8	3	056-2072-9	LUG FOR 150A CONTACTOR
N/S	1	FH-6997	INSULATOR #417 IDEAL
N/S	1	FH-7004	CRIMP SLEEVE #412 IDEAL
N/S	1	1EL0559	WIRE NUT-LARGE GRAY
N/S	1	FH-6997	INSULATOR #417 IDEAL
N/S	1	FH-7004	CRIMP SLEEVE #412 IDEAL
A	4	S-8977	SCREW TCSF #10-32x3/4 HWH ZN



**CBCF-25-3**  
**CBCF-30-3**

**Common Parts**

Key	Qty	Part Number	Description
3 hp	2	D02-0039	WIRE TIE ANCHORS
5 to 25 hp	5	D02-0039	WIRE TIE ANCHORS
30,40,50 hp	6	D02-0039	WIRE TIE ANCHORS
N/S	17	D03-0247	WIRE TIE 5" PANDUIT #PLT1.5M-M
N/S	1	DC-1664	DECAL-WIRING FAN CTL 230V-3PH
N/S	1	E105-1100	WIRE KIT-CF/CHS FANS 1&3PH230V
N/S	REF	C-7213	TAPE 3/4 X 66FT 3M PLASTIC



**CBCF-40-3**  
**CBCF-50-3**

# PARTS

## Control Box Assembly - Three Phase 460 Volt

### CBCF-03-4

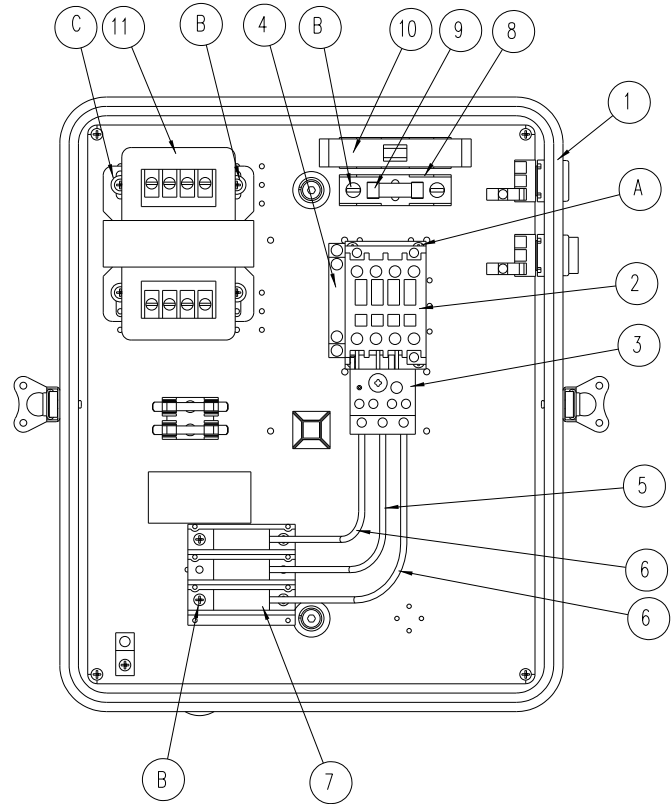
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0488	CONTACTOR IEC 3POLE 10A CL00
3	1	D03-0473	OVERLOAD IEC 8.5A CLS20 RT12M
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	6 ft	WR-14RD	WIRE 14GA STRANDED MTW RED
6	1.1 ft	WR-14BK	WIRE 14GA STRANDED MTW BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6998	INSULATOR 18GA. CRIMP CONN.
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

### CBCF-05-4

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0488	CONTACTOR IEC 3POLE 10A CL00
3	1	D03-0473	OVERLOAD IEC 8.5A CLS20 RT12M
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-14RD	WIRE 14GA STRANDED MTW RED
6	1.1 ft	WR-14BK	WIRE 14GA STRANDED MTW BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

### CBCF-07-4

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0490	CONTACTOR IEC 3POLE 17.5A CL02
3	1	D03-0475	OVERLOAD IEC 16A CLS20 RT12P
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-14RD	WIRE 14GA STRANDED MTW RED
6	1.1 ft	WR-14BK	WIRE 14GA STRANDED MTW BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN



### Common Parts

Key	Qty	Part Number	Description
3 to 7 hp	5	D02-0039	WIRE TIE ANCHORS
10 to 50 hp	6	D02-0039	WIRE TIE ANCHORS
N/S	17	D03-0247	WIRE TIE 5"PANDUIT #PLT1.5M-M
N/S	1	DC-1668	DECAL-WIRING FAN 380-575V-3PH
N/S	REF	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
N/S	1	E105-1101	WIRE KIT-CF/CHS FAN 3PH380/575

### CBCF-10-4

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0490	CONTACTOR IEC 3POLE 17.5A CL02
3	1	D03-0475	OVERLOAD IEC 16A CLS20 RT12P
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-12RD	WIRE 12GA STRANDED MTW RED
6	1.1 ft	WR-12BK	WIRE 12GA STRANDED MTW BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
12	3	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

## Control Box Assembly - Three Phase 460 Volt

**CBCF-15-4**

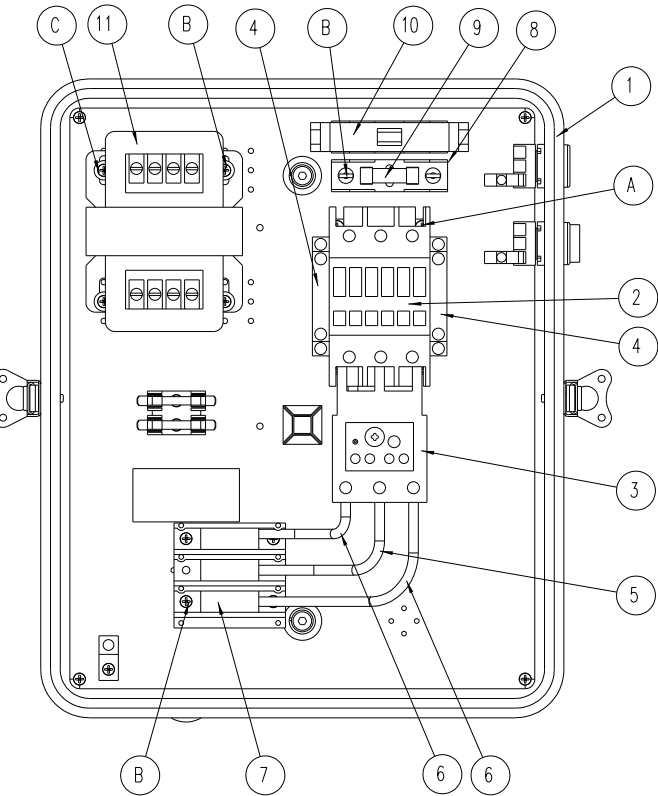
Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0492	CONTACTOR IEC 3POLE 32A CL04
3	1	D03-0478	OVERLOAD IEC 26A CLS20 RT12U
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-10RD	WIRE 10 GA STRANDED MTW RED
6	1.1 ft	WR-10BK	WIRE 10 GA STRANDED MTW BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

**CBCF-20-4**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0492	CONTACTOR IEC 3POLE 32A CL04
3	1	D03-0479	OVERLOAD IEC 32A CLS20 RT12V
4	1	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
6	1.1 ft	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6999	INSULATOR 16GA. INSUL. CRIMP
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

**CBCF-25-4**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0493	CONTACTOR IEC 3POLE 34A CL45
3	1	D03-0480	OVERLOAD IEC 40A CLD20 RT12W
4	2	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.6 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
6	1.1 ft	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6996	WIRE CRIMP #2011S BUCHANAN
N/S	3	FH-6997	INSULATOR #417 IDEAL
A	4	090-1702-1	PHILLIPS PHST #8-32 X 1/2 F
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN



**Common Parts**

Key	Qty	Part Number	Description
3 to 7 hp	5	D02-0039	WIRE TIE ANCHORS
10 to 50 hp	6	D02-0039	WIRE TIE ANCHORS
N/S	17	D03-0247	WIRE TIE 5"PANDUIT #PLT1.5M-M
N/S	1	DC-1668	DECAL-WIRING FAN 380-575V-3PH
N/S	REF	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
N/S	1	E105-1101	WIRE KIT-CF/CHS FAN 3PH380/575

**CBCF-30-4**

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0494	CONTACTOR IEC 3POLE 48A CL06
3	1	D03-0482	OVERLOAD IEC 30-43A RT22E
4	2	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.7 ft	WR-08RD	WIRE 8GA. STRANDED THNN RED
6	1.1 ft	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
NS	3	FH-6996	WIRE CRIMP #2011S BUCHANAN
NS	3	FH-6997	INSULATOR #417 IDEAL
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

# PARTS

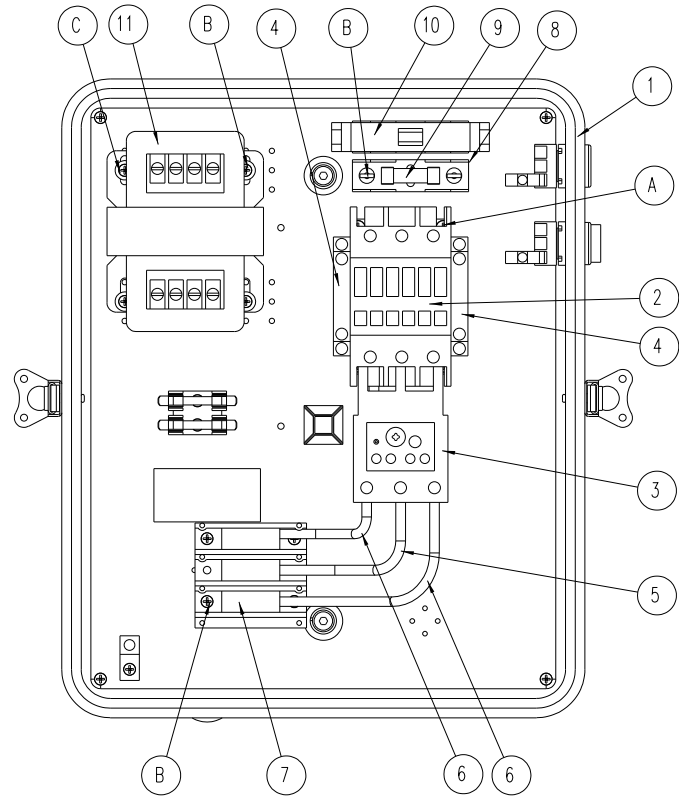
## Control Box Assembly - Three Phase 460 Volt

### CBCF-40-4

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0495	CONTACTOR IEC 3POLE 62A CL07
3	1	D03-0483	OVERLOAD IEC 42-55A RT22G
4	2	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.7 ft	WR-06RD	WIRE 6 GA. RED
6	1.1 ft	WR-06BK	WIRE 6 GA. BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6996	WIRE CRIMP #2011S BUCHANAN
N/S	3	FH-6997	INSULATOR #417 IDEAL
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN

### CBCF-50-4

Key	Qty	Part Number	Description
1	1	C-8183	GRP-ELECT BOX-CF FAN.75CONDUIT
2	1	D03-0497	CONTACTOR IEC 3POLE 80A CL09
3	1	D03-0484	OVERLOAD IEC 65A CLS20 RT22H
4	2	D03-0511	POINTS, AUXILLARY FOR IEC
5	0.7 ft	WR-06RD	WIRE 6 GA. RED
6	1.1 ft	WR-06BK	WIRE 6 GA. BLACK
7	1	C-8018	TERMINAL BLOCK 185A 3POLE 1:4
8	2	D36-0003	FUSE BLOCK PANEL MOUNT 1 FUSE
9	2	D36-0002	FUSE #FNQ5 500V SLO-BLOW
10	2	D03-0562	COVER, FUSE BLOCK BUSSMAN
11	1	056-2187-5	TRANSFORMER .25KVA PRI-460/230
N/S	3	FH-6996	WIRE CRIMP #2011S BUCHANAN
N/S	3	FH-6997	INSULATOR #417 IDEAL
A	4	S-8984	SCREW TCSF #10-32x5/8 RHP ZN
B	10	S-2786	SCREW TCSF #8-32x3/8 PHP ZN
C	4	S-3674	WASHER FLAT #10 SAE ZN



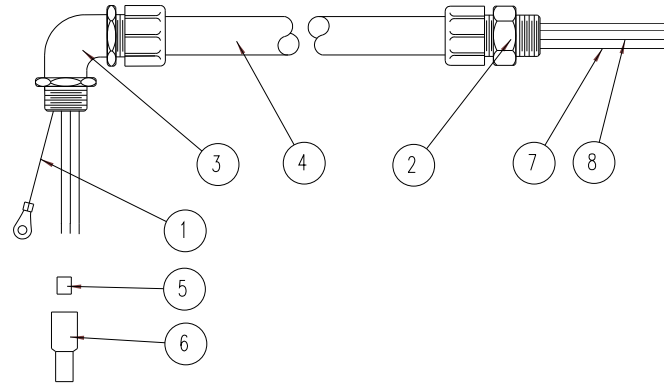
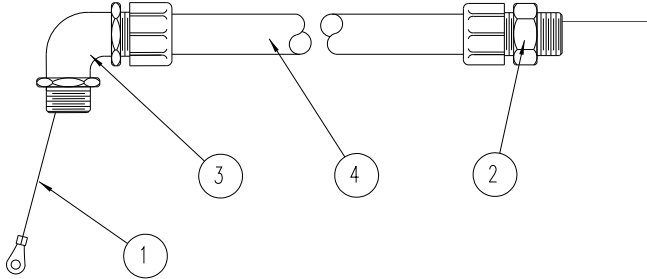
### Common Parts

Key	Qty	Part Number	Description
3 to 7 hp	5	D02-0039	WIRE TIE ANCHORS
10 to 50 hp	6	D02-0039	WIRE TIE ANCHORS
N/S	17	D03-0247	WIRE TIE 5"PANDUIT #PLT1.5M-M
N/S	1	DC-1668	DECAL-WIRING FAN 380-575V-3PH
N/S	REF	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
N/S	1	E105-1101	WIRE KIT-CF/CHS FAN 3PH380/575

## Motor Conduit Assembly

Fan Model	Conduit Assembly		
	1P230V	3P230V	3P460V
CF-3	C-8236	C-8236	C-8236
CF-5	C-8236	C-8236	C-8236
CF-7.5	C-8236	C-8236	C-8236
CF-10	C-8236	C-8236	C-8236
CF-15	C-8240	C-8240	C-8240
CF-20	-	C-8240	C-8240
CF-25	-	C-8239	C-8239
CF-30	-	C-8239	C-8239
CF-40	-	C-8301	C-8301
CF-50	-	C-8301	C-8301

Fan Model	Conduit Assembly		
	1P230V	3P230V	3P460V
CHS-3	C-8267	C-8265	C-8568
CHS-5	C-8264	C-8265	C-8568
CHS-7.5	C-8264	C-8569	C-8568
CHS-10	C-8266	C-8569	C-8568
CHS-15	-	C-8272	C-8571
CHS-20	-	C-8572	C-8571
CHS-30	-	C-8309	C-8310
CHS-40	-	C-8309	C-8310
CHS-50	-	C-8311	C-8312



### C-8236 CONDUIT ASY-3/4"X2FT STR/ELBOW

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0160	WR 36"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	2	FT	FH-7063	SEALTITE PVC 3/4"

### C-8240 CONDUIT ASY-1"X2FT STR/ELBOW

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0160	WR 36"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7055	STRAIGHT PVC W/LOCKNUT 1"
3	1	EA	FH-7056	ELBOW PVC 90DEG W/LOCKNUT 1"
4	2	FT	FH-7040	SEALTITE PVC 1"

### C-8239 CONDUIT ASY-1.5"X2FT STR/ELBOW

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0160	WR 36"(10GRN/YLW).25/RING TERM
2	1	EA	C-8039	STRAIGHT PVC W/LOCKNUT 1.5"
3	1	EA	C-8040	ELBOW PVC 90DEG W/LOCKNUT 1.5"
4	2	FT	C-8038	SEALTITE PVC 1.5"

### C-8301 CONDUIT ASY-2"X2FT STR/ELBOW

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0160	WR 36"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	2	FT	C-8041	SEALTITE PVC 2"

### C-8264 CONDUIT ASY-3/4"X3'STR/ELB 1PH

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
5	2	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	2	EA	FH-6997	INSULATOR #417 IDEAL
7	4	FT	WR-08BK	WIRE 8GA. STRANDED THNN BLACK
8	4	FT	WR-08RD	WIRE 8GA. STRANDED THNN RED

### C-8266 CONDUIT ASY-3/4"X3'STR/ELB 1PH

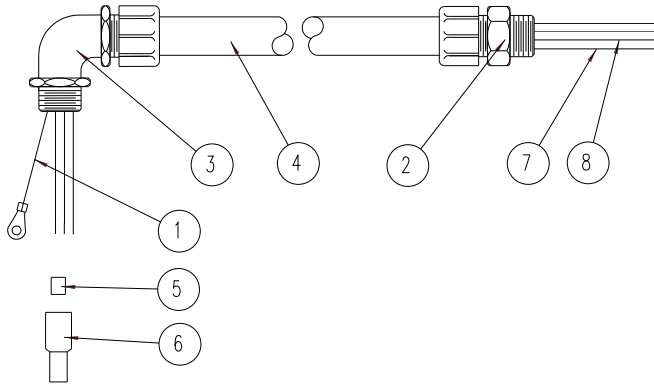
Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
5	2	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	2	EA	FH-6997	INSULATOR #417 IDEAL
7	4	FT	WR-06BK	WIRE 6 GA. BLACK
8	4	FT	WR-06RD	WIRE 6 GA. RED

### C-8267 CONDUIT ASY-3/4"X3'STR/ELB 1PH

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
6	2	EA	FH-6999	INSULATOR 16GA. INSUL. CRIMP
7	1	EA	E305-0163	WR 48"(12BLK).50/.50
8	1	EA	E305-0164	WR 48"(12RED).50/.50

# PARTS

## Motor Conduit Assembly



Fan Model	Conduit Assembly		
	1P230V	3P230V	3P460V
CHS-3	C-8267	C-8265	C-8568
CHS-5	C-8264	C-8265	C-8568
CHS-7.5	C-8264	C-8569	C-8568
CHS-10	C-8266	C-8569	C-8568
CHS-15	-	C-8272	C-8571
CHS-20	-	C-8572	C-8571
CHS-30	-	C-8309	C-8310
CHS-40	-	C-8309	C-8310
CHS-50	-	C-8311	C-8312

### C-8265 CONDUIT ASY-3/4"X3' 14GA 230V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
5	4	EA	FH-6999	INSULATOR 16GA. INSUL. CRIMP
6	-	-	-	-
7	8	FT	WR-14BK	WIRE 14GA STRANDED MTW BLACK
8	4	FT	WR-14RD	WIRE 14GA STRANDED MTW RED

### C-8310 CONDUIT ASY-1.5"X5'STR/ELB 6GA

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	C-8039	STRAIGHT PVC W/LOCKNUT 1.5"
3	1	EA	C-8040	ELBOW PVC 90DEG W/LOCKNUT 1.5"
4	5	FT	C-8038	SEALTITE PVC 1.5"
5	6	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	6	EA	FH-6997	INSULATOR #417 IDEAL
7	13	FT	WR-06BK	WIRE 6 GA. BLACK
8	6.5	FT	WR-06RD	WIRE 6 GA. RED

### C-8569 CONDUIT ASY-3/4"X3' 10GA 230V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
5	4	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	4	EA	FH-6997	INSULATOR #417 IDEAL
7	8	FT	WR-10BK	WIRE 10 GA STRANDED MTW BLACK
8	4	FT	WR-10RD	WIRE 10 GA STRANDED MTW RED

### C-8311 CONDUIT ASY-2"X5FT 1GA 230V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	5	FT	C-8041	SEALTITE PVC 2"
5	3	EA	C-7218	SPLICE,BOLT 1H3 BLACKBURN
6	0.14	RL	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
	0.3	RL	C-7214	TAPE RUBBER WRAP 3/4 X 30FT
7	19.5	FT	WR-01BK	WIRE 1 GA BLACK STRANDED CSA

### C-8272 CONDUIT ASY-1"X5' 6GA 230V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7055	STRAIGHT PVC W/LOCKNUT 1"
3	1	EA	FH-7056	ELBOW PVC 90DEG W/LOCKNUT 1"
4	5	FT	FH-7040	SEALTITE PVC 1"
5	6	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	6	EA	FH-6997	INSULATOR #417 IDEAL
7	12	FT	WR-06BK	WIRE 6 GA. BLACK
8	6	FT	WR-06RD	WIRE 6 GA. RED

### C-8312 CONDUIT ASY-2"X5FT 4GA 460V

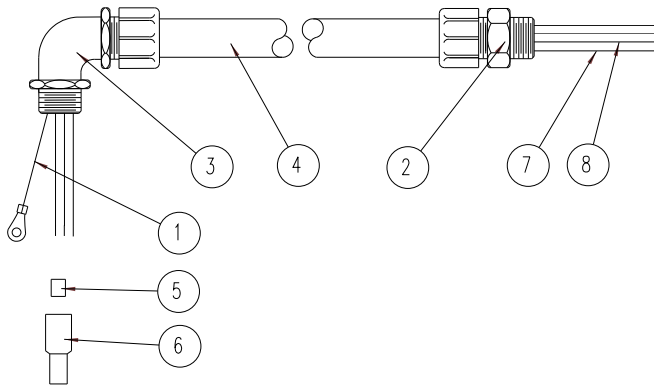
Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	5	FT	C-8041	SEALTITE PVC 2"
5	3	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
	3	EA	C-7215	SPLICE,BOLT 2H BLACKBURN
6	3	EA	FH-6997	INSULATOR #417 IDEAL
	0.23	RL	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
	0.3	RL	C-7214	TAPE RUBBER WRAP 3/4 X 30FT
7	6.5	FT	WR-04RD	WIRE 4 GA RED WIRE
8	6.5	FT	WR-04RD	WIRE 4 GA RED WIRE

### C-8309 CONDUIT ASY-1.5"X5'STR/ELB 2GA

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	C-8039	STRAIGHT PVC W/LOCKNUT 1.5"
3	1	EA	C-8040	ELBOW PVC 90DEG W/LOCKNUT 1.5"
4	5	FT	C-8038	SEALTITE PVC 1.5"
5	3	EA	C-7215	SPLICE,BOLT 2H BLACKBURN
6	0.14	RL	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
	0.3	RL	C-7214	TAPE RUBBER WRAP 3/4 X 30FT
7	13	FT	WR-02BK	WIRE 2 GA BLACK WIRE
8	6.5	FT	WR-02RD	WIRE 2 GA RED WIRE



## Motor Conduit Assembly



Fan Model	Conduit Assembly		
	1P230V	3P230V	3P460V
CF-30D	-	C-8439	C-8440
CF-40D	-	C-8450	C-8438
CF-50D	-	C-8450	C-8436

### C-8439 GRP-DI CONDUIT 3P230 #2 1.5X48

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	C-8039	STRAIGHT PVC W/LOCKNUT 1.5"
3	1	EA	C-8040	ELBOW PVC 90DEG W/LOCKNUT 1.5"
4	3	FT	C-8038	SEALTITE PVC 1.5"
5	1	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
	3	EA	FH-7004	CRIMP SLEEVE #412 IDEAL
6	4	EA	FH-6997	INSULATOR #417 IDEAL
7	10	FT	WR-02BK	WIRE 2 GA BLACK WIRE
8	5	FT	WR-02RD	WIRE 2 GA RED WIRE

### C-8450 GRP-DI CONDUIT 3P230 #1 2.0X48

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	4	FT	C-8041	SEALTITE PVC 2"
5	3	EA	C-7218	SPLICE,BOLT 1H3 BLACKBURN
6	0.3	RL	C-7214	TAPE RUBBER WRAP 3/4 X 30FT
	0.14	RL	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
7	15	FT	WR-01BK	WIRE 1 GA BLACK STRANDED CSA

### C-8572 CONDUIT ASY-1"X5' 4GA 230V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0267	WR 78"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7055	STRAIGHT PVC W/LOCKNUT 1"
3	1	EA	FH-7056	ELBOW PVC 90DEG W/LOCKNUT 1"
4	5	FT	FH-7040	SEALTITE PVC 1"
5	4	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	4	EA	FH-6997	INSULATOR #417 IDEAL
7	12	FT	WR-04BK	WIRE 4 GA MTW BLACK
8	6	FT	WR-04RD	WIRE 4 GA RED WIRE

### C-8568 CONDUIT ASY-3/4"X3' 14GA 460V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0153	WR 48"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	3	FT	FH-7063	SEALTITE PVC 3/4"
5	6	EA	FH-6999	INSULATOR 16GA. INSUL. CRIMP
7	8	FT	WR-14BK	WIRE 14GA STRANDED MTW BLACK
8	4	FT	WR-14RD	WIRE 14GA STRANDED MTW RED

### C-8571 CONDUIT ASY-3/4"X5' 10GA 460V

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	FH-7053	STRAIGHT PVC W/LOCKNUT 3/4"
3	1	EA	FH-7054	ELBOW 3/4" 90 DEGREE PVC WITH
4	5	FT	FH-7063	SEALTITE PVC 3/4"
5	6	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	6	EA	FH-6997	INSULATOR #417 IDEAL
7	12	FT	WR-10BK	WIRE 10 GA STRANDED MTW BLACK
8	6	FT	WR-10RD	WIRE 10 GA STRANDED MTW RED

### C-8440 GRP-DI CONDUIT 3P460 #6 1.5X48

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	C-8039	STRAIGHT PVC W/LOCKNUT 1.5"
3	1	EA	C-8040	ELBOW PVC 90DEG W/LOCKNUT 1.5"
4	3	FT	C-8038	SEALTITE PVC 1.5"
5	6	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	6	EA	FH-6997	INSULATOR #417 IDEAL
7	10	FT	WR-06BK	WIRE 6 GA. BLACK
8	5	FT	WR-06RD	WIRE 6 GA. RED

### C-8438 GRP-DI CONDUIT 3P460 #6 2.0X48

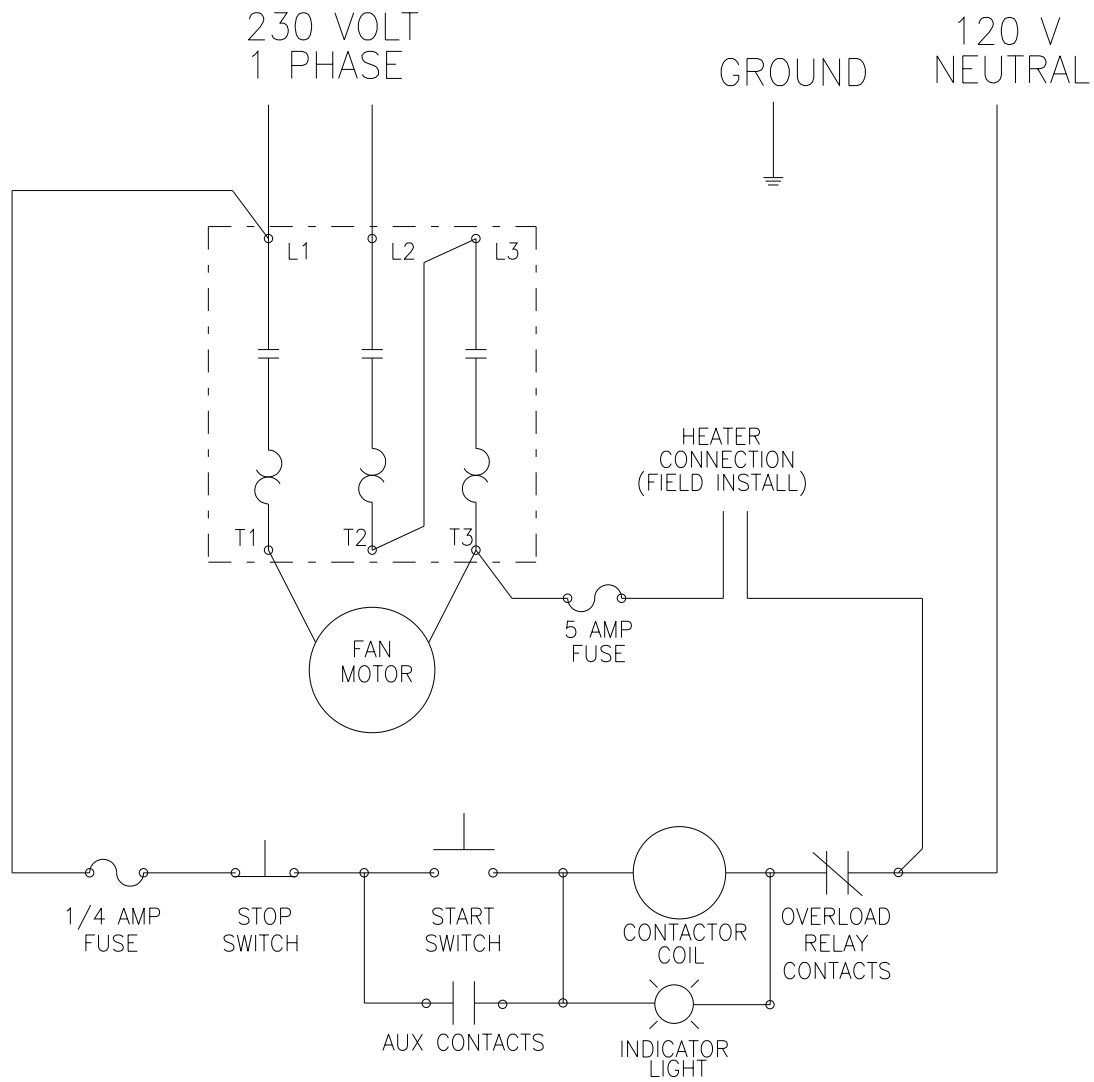
Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	4	FT	C-8041	SEALTITE PVC 2"
5	6	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
6	6	EA	FH-6997	INSULATOR #417 IDEAL
7	10	FT	WR-06BK	WIRE 6 GA. BLACK
8	5	FT	WR-06RD	WIRE 6 GA. RED

### C-8436 GRP-DI CONDUIT 3P230 #2 2.0X48

Key	Qty	U/M	Part Number	Description
1	1	EA	E305-0188	WR 60"(10GRN/YLW).25/RING TERM
2	1	EA	C-8042	STRAIGHT PVC W/LOCKNUT 2"
3	1	EA	C-8043	ELBOW PVC 90DEG W/LOCKNUT 2"
4	4	FT	C-8041	SEALTITE PVC 2"
5	3	EA	FH-6996	WIRE CRIMP #2011S BUCHANAN
	3	EA	C-7215	SPLICE,BOLT 2H BLACKBURN
6	3	EA	FH-6997	INSULATOR #417 IDEAL
	0.14	RL	C-7213	TAPE 3/4 X 66FT 3M PLASTIC
	0.3	RL	C-7214	TAPE RUBBER WRAP 3/4 X 30FT
7	10	FT	WR-02BK	WIRE 2 GA BLACK WIRE
8	5	FT	WR-02RD	WIRE 2 GA RED WIRE

# SCHEMATICS / WIRING DIAGRAMS

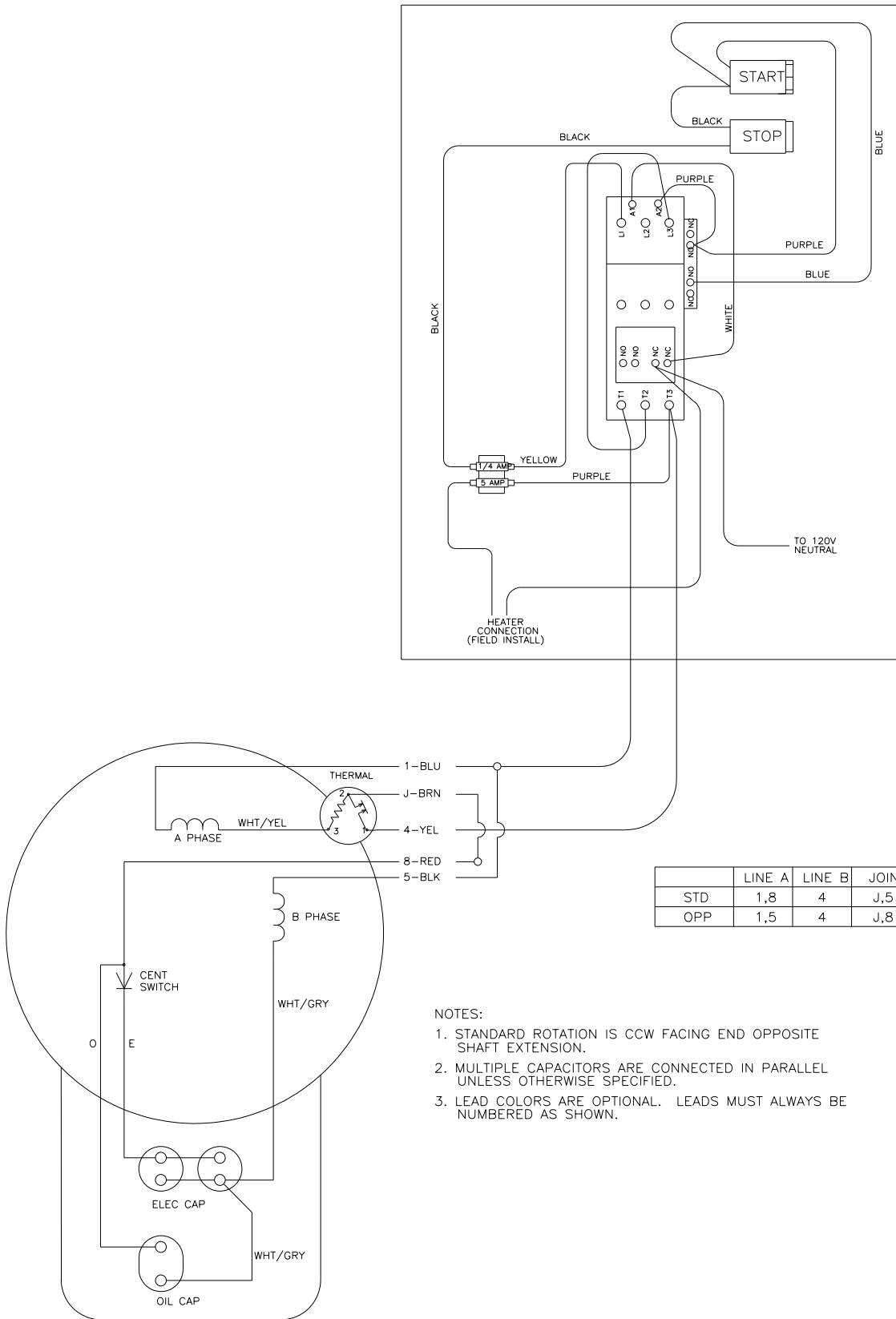
## Wiring Schematic - 230 Volt 1 Phase



### CF-3-1 Capacitor Specifications

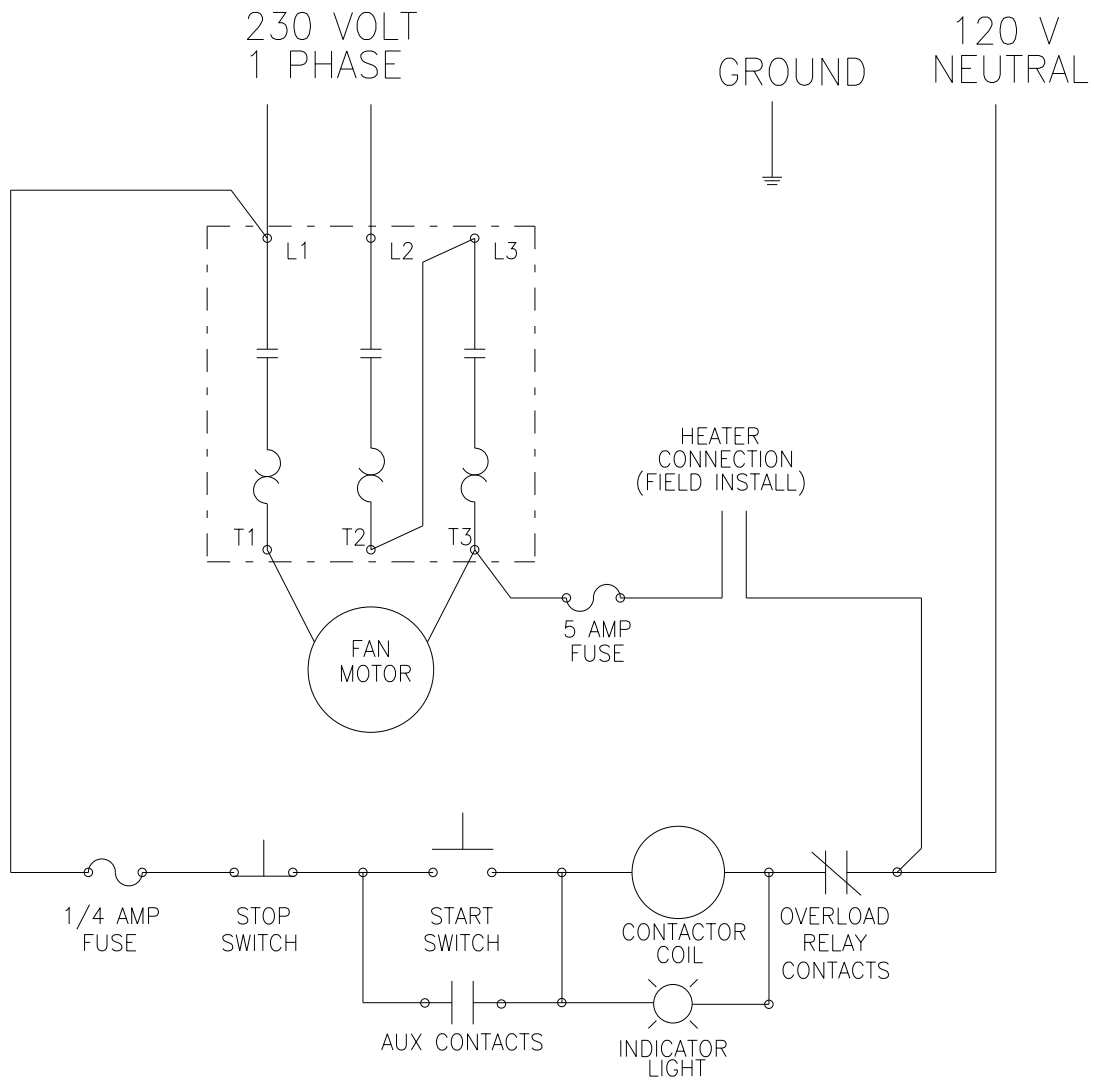
Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
C-7979	FH-7012	Electrolytic	161	250	1
	FH-7000	Electrolytic	216	250	1
	FH-7011	Oil	35	370	1

**Wiring Diagram - CF-3-1C**



# SCHEMATICS / WIRING DIAGRAMS

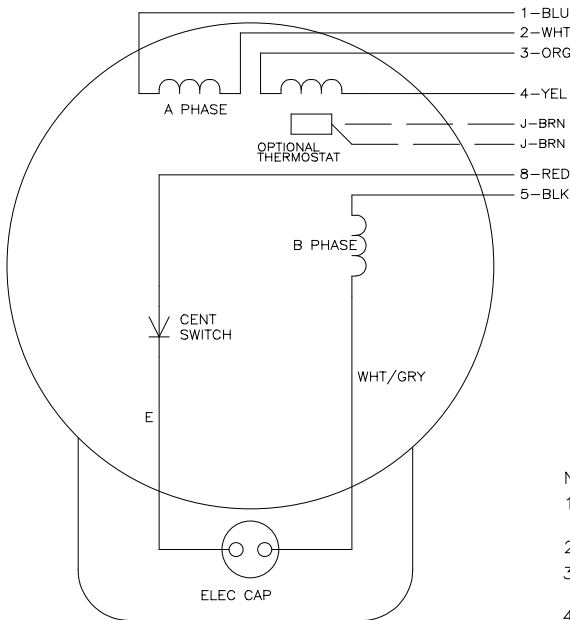
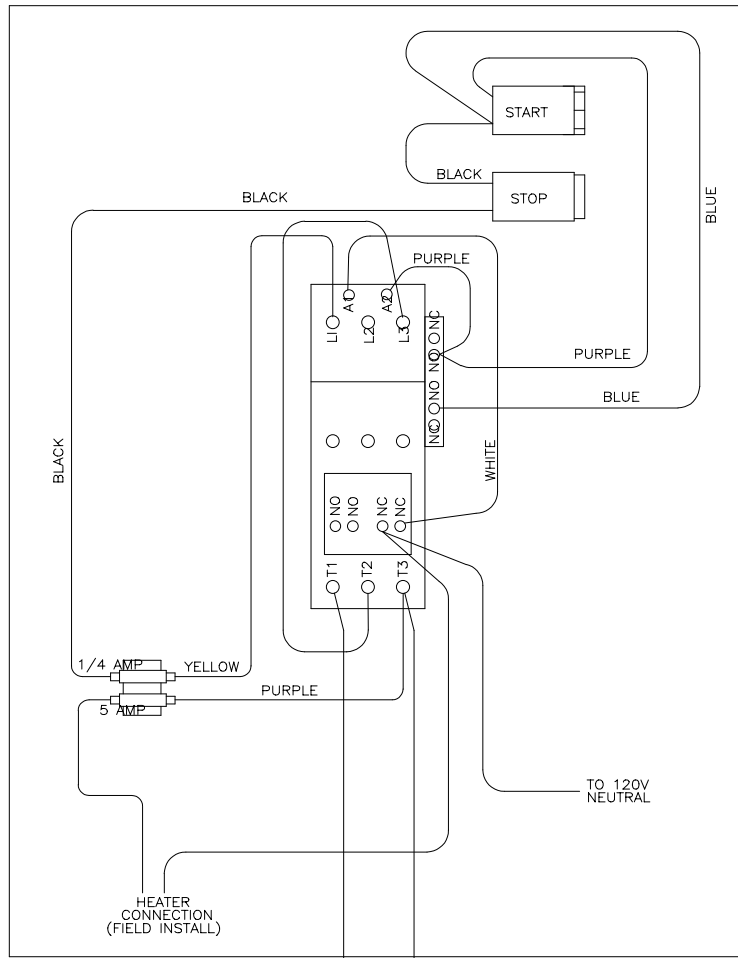
## Wiring Schematic - 230 Volt 1 Phase



### CHS-3-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
FH-5474	FH-7013	Electrolytic	850	115	1

**Wiring Diagram - CHS-3-1C**



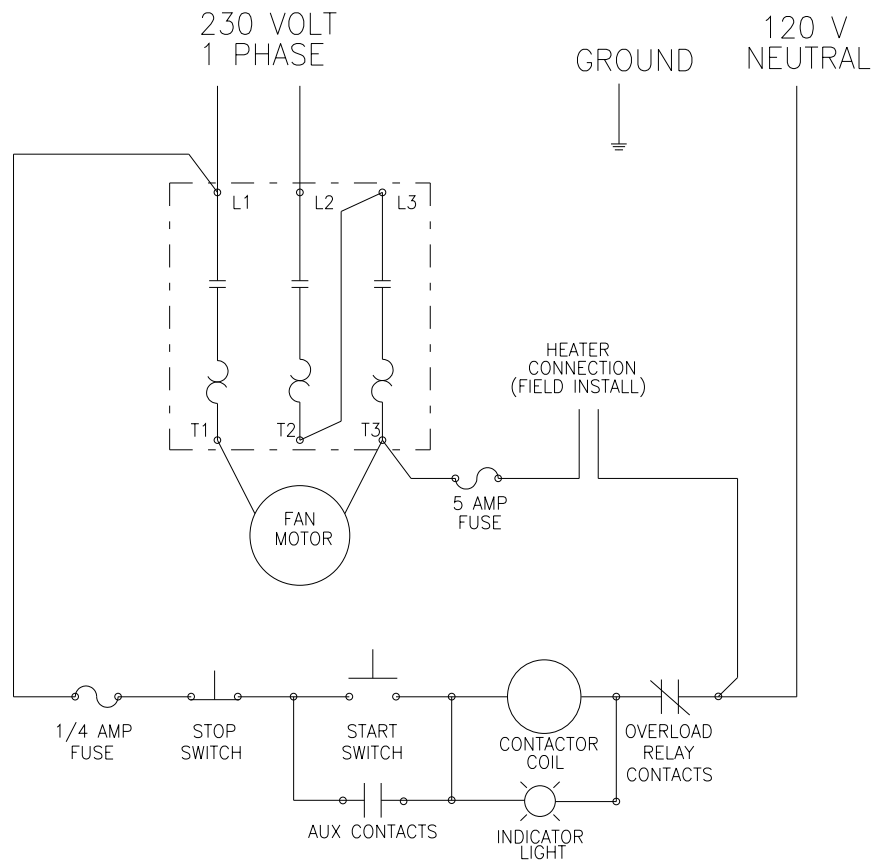
	LINE A	LINE B	JOIN
HIGH STD	1	4,5	2,3,8
HIGH OPP	1	4,8	2,3,5
LOW STD	1,3,8	2,4,5	-
LOW OPP	1,3,5	2,4,8	-

**NOTES:**

1. STANDARD ROTATION IS CCW FACING END OPPOSITE SHAFT EXTENSION.
2. OPTIONAL THERMOSTAT IS PROVIDED WHEN SPECIFIED.
3. MULTIPLE CAPACITORS ARE CONNECTED IN PARALLEL UNLESS OTHERWISE SPECIFIED.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

# SCHEMATICS / WIRING DIAGRAMS

## Wiring Schematic - 230 Volt 1 Phase



### CF-5-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
C-7980	FH-7000	Electrolytic	216	250	2
	CH-6898	Oil	40	370	1

### CF-7.5-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
C-7981	FH-7000	Electrolytic	216	250	2
	CH-6898	Oil	40	370	1

### CHS-5-1 Capacitor Specifications

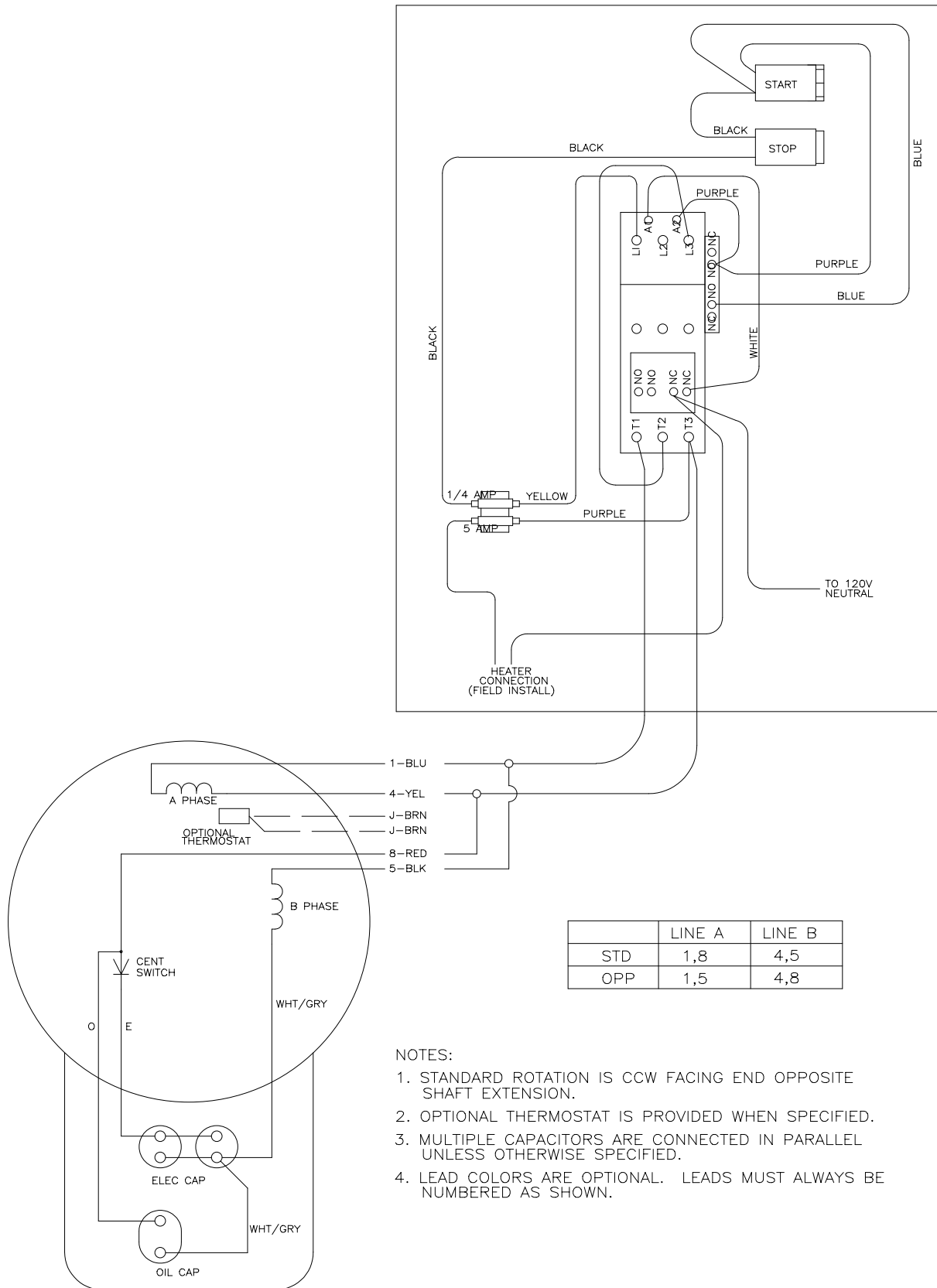
Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
FH-5476	FH-7012	Electrolytic	161	250	2
	CH-6898	Oil	40	370	1

### CHS-7.5-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
FH-5478	FH-7000	Electrolytic	216	250	2
	FH-7010	Oil	25	370	1

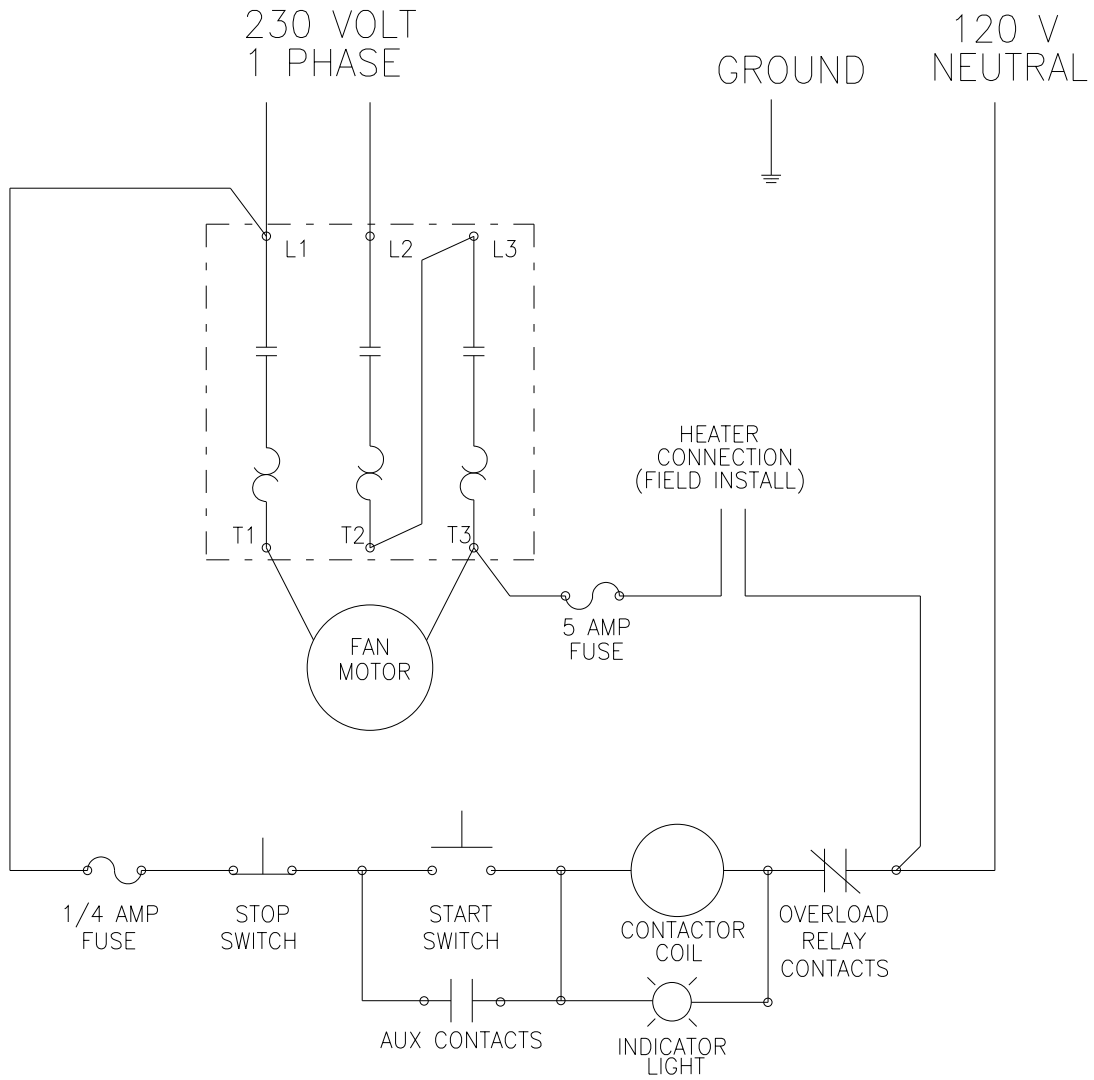
# SCHEMATICS / WIRING DIAGRAMS

## Wiring Diagram - CF-5-1C, CF-7.5-1C, CHS-5-1C, & CHS-7.5-1C



# SCHEMATICS / WIRING DIAGRAMS

## Wiring Schematic - 230 Volt 1 Phase



### CF-10-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
C-7982	FH-7000	Electrolytic	216	250	3
	CH-6898	Oil	40	370	3

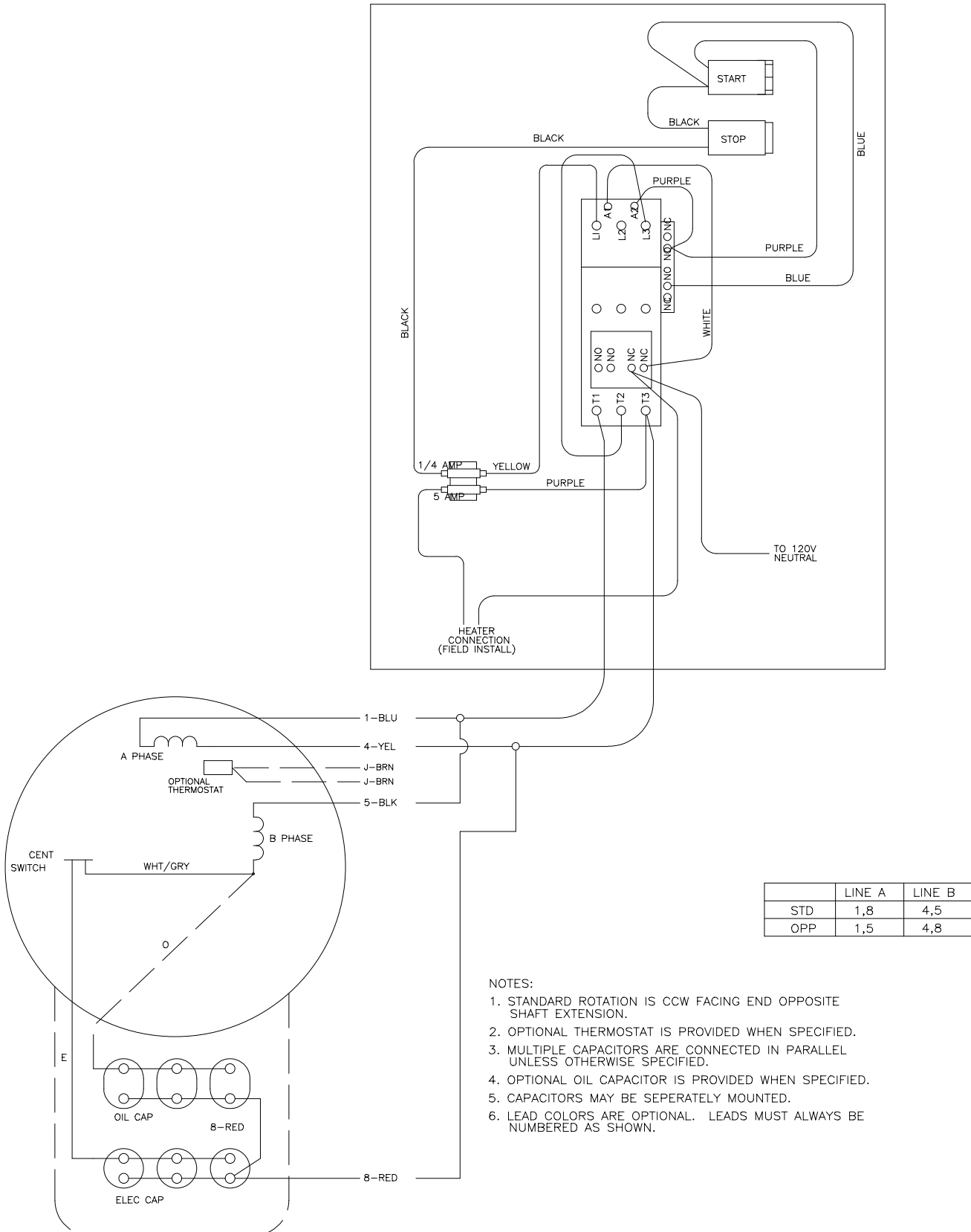
### CHS-10-1 Capacitor Specifications

Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
FH-5480	FH-7000	Electrolytic	216	250	3
	CH-6897	Oil	30	370	2



# SCHEMATICS / WIRING DIAGRAMS

## Wiring Diagram - CF-10-1C & CHS-10-1C



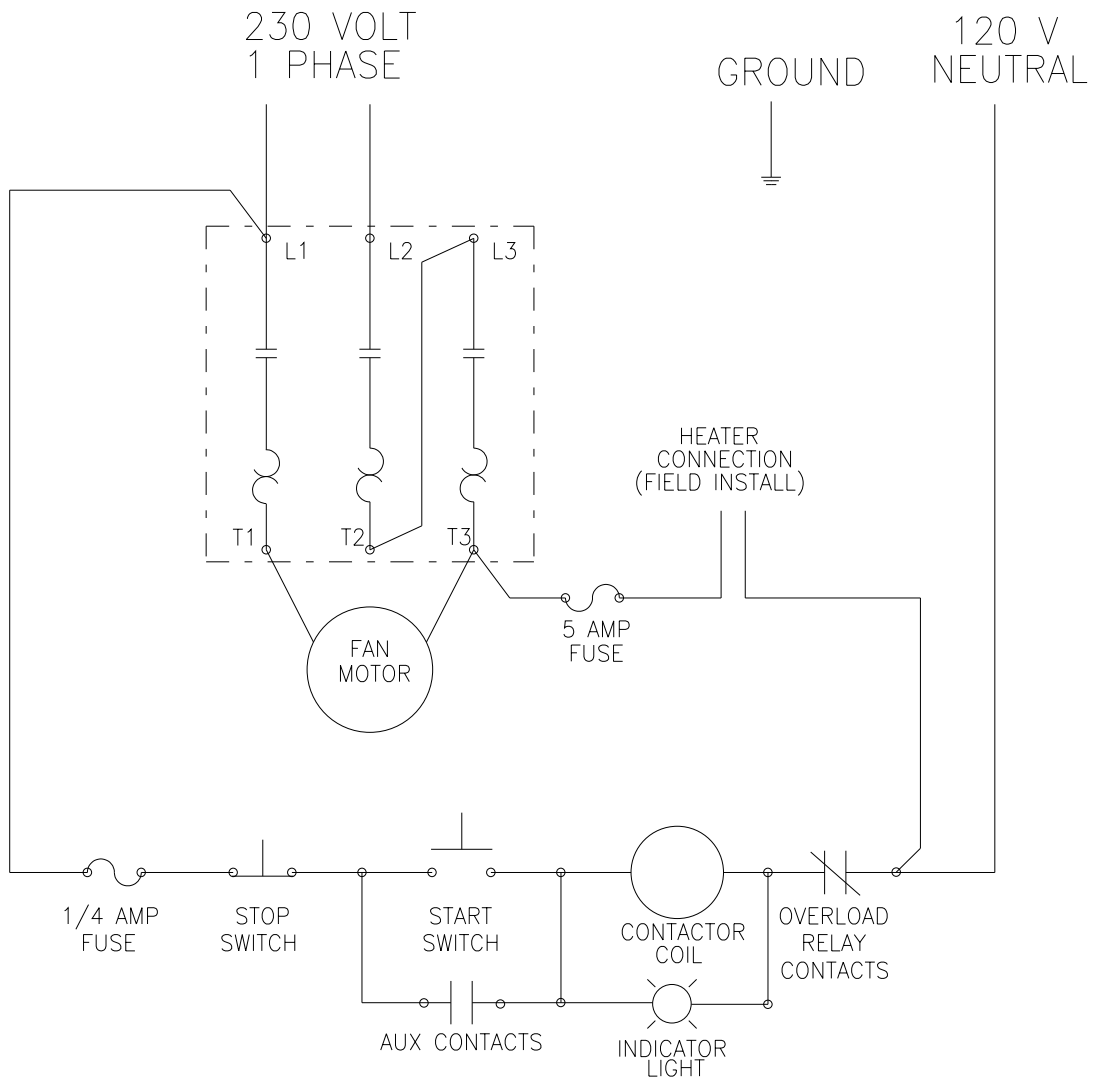
	LINE A	LINE B
STD	1,8	4,5
OPP	1,5	4,8

**NOTES:**

1. STANDARD ROTATION IS CCW FACING END OPPOSITE SHAFT EXTENSION.
2. OPTIONAL THERMOSTAT IS PROVIDED WHEN SPECIFIED.
3. MULTIPLE CAPACITORS ARE CONNECTED IN PARALLEL UNLESS OTHERWISE SPECIFIED.
4. OPTIONAL OIL CAPACITOR IS PROVIDED WHEN SPECIFIED.
5. CAPACITORS MAY BE SEPERATELY MOUNTED.
6. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

# SCHEMATICS / WIRING DIAGRAMS

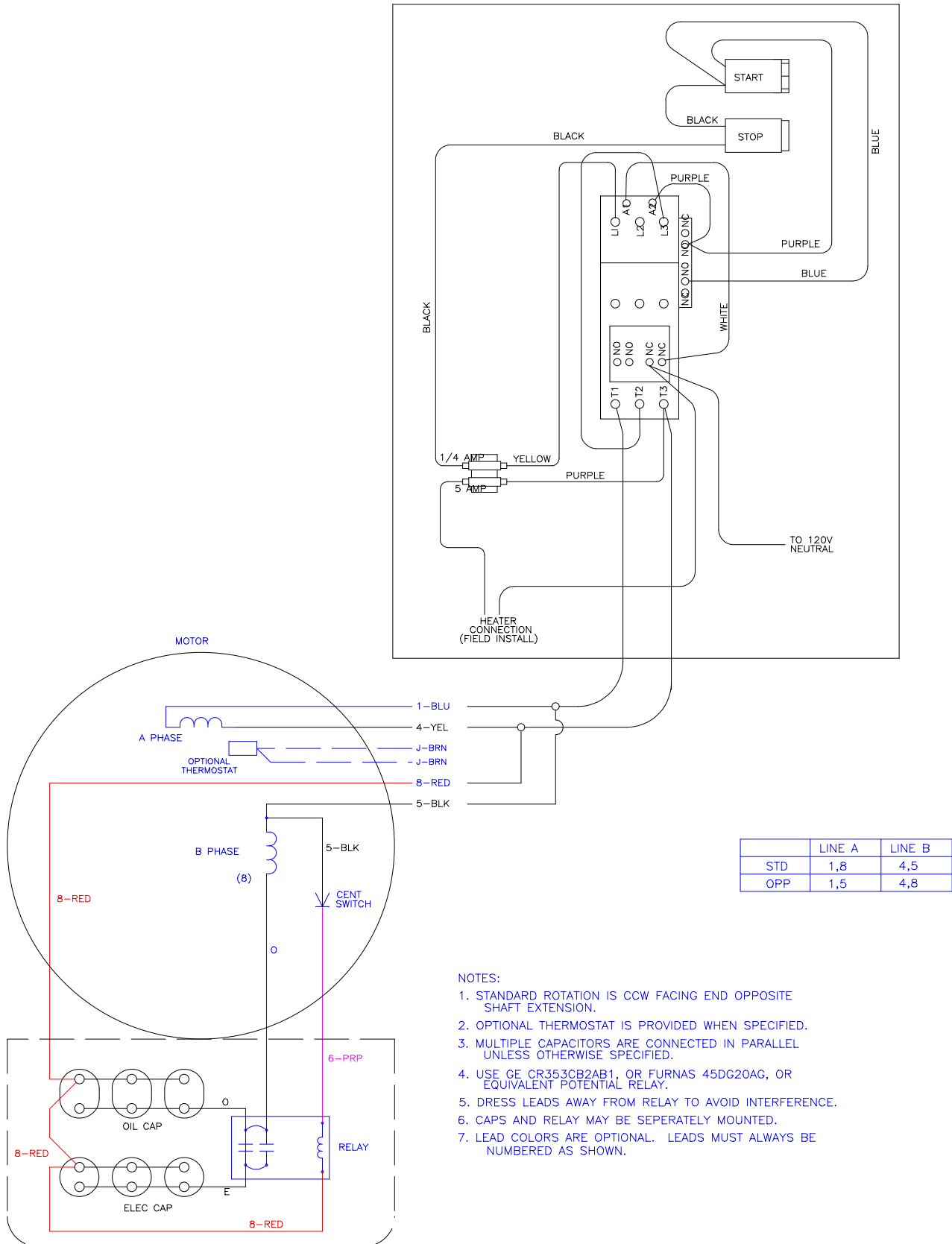
## Wiring Schematic - 230 Volt 1 Phase



### CF-15-1 Capacitor Specifications

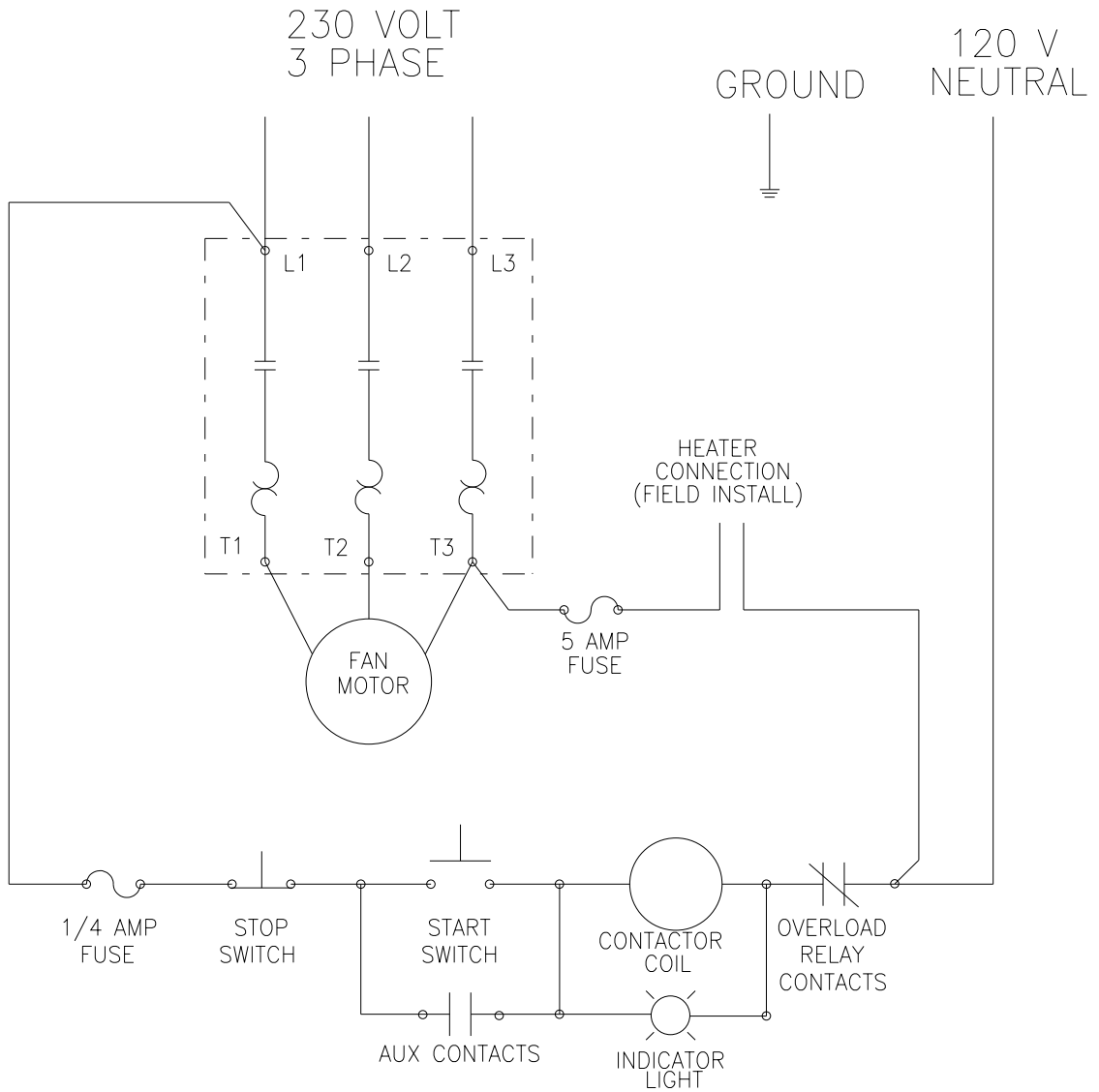
Motor Part Number	Capacitor Part Number	Capacitor Type	MFD	Voltage	Quantity
C-7983	FH-7000	Electrolytic	216	250	3
	CH-6899	Oil	50	370	3

**Wiring Diagram - CF-15-1C**



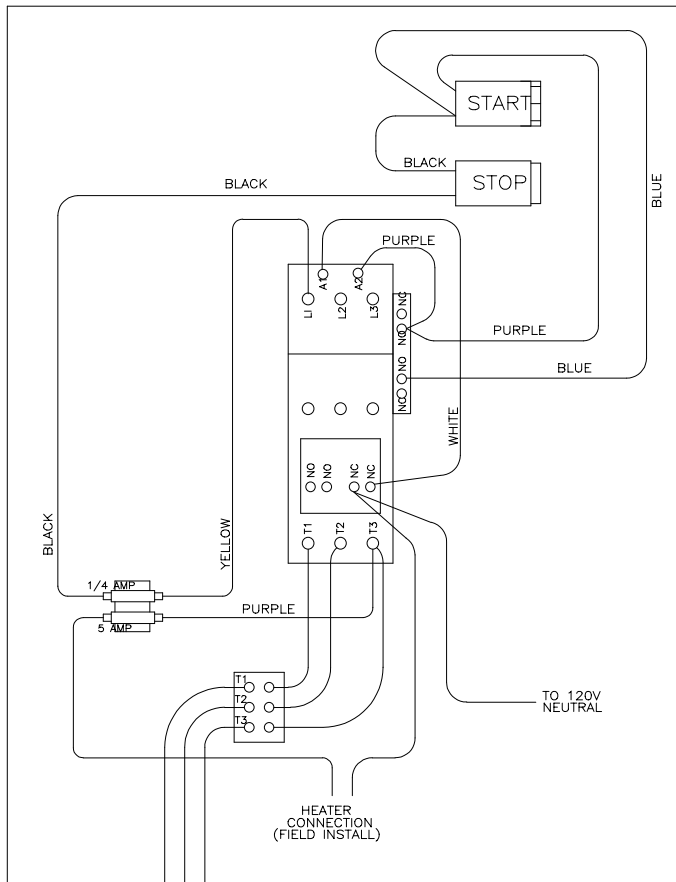
# SCHEMATICS / WIRING DIAGRAMS

## Wiring Schematic - 230 Volt 3 Phase



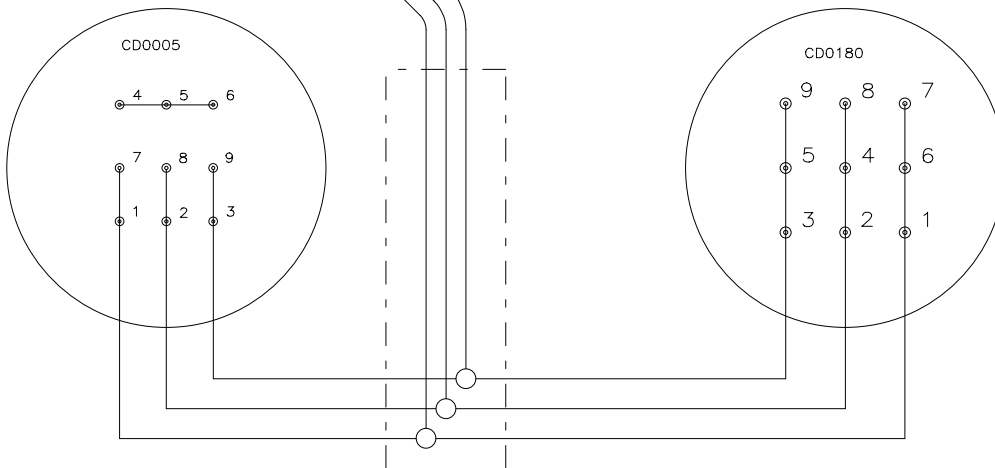
# SCHEMATICS / WIRING DIAGRAMS

## Wiring Diagram - 230 Volt 3 Phase



Fan Model	Motor Connection Diagram
CF-3	CD0005
CF-5	CD0005
CF-7.5	CD0005
CF-10	CD0005
CF-15	CD0005
CF-20	CD0180
CF-25	CD0005
CF-30	CD0005
CF-40	CD0005
CF-50	CD0005

Fan Model	Motor Connection Diagram
CHS-3	CD0005
CHS-5	CD0005
CHS-7.5	CD0005
CHS-10	CD0005
CHS-15	CD0005
CHS-20	CD0005
CHS-30	CD0005
CHS-40	CD0180
CHS-50	CD0180



**NOTES:**

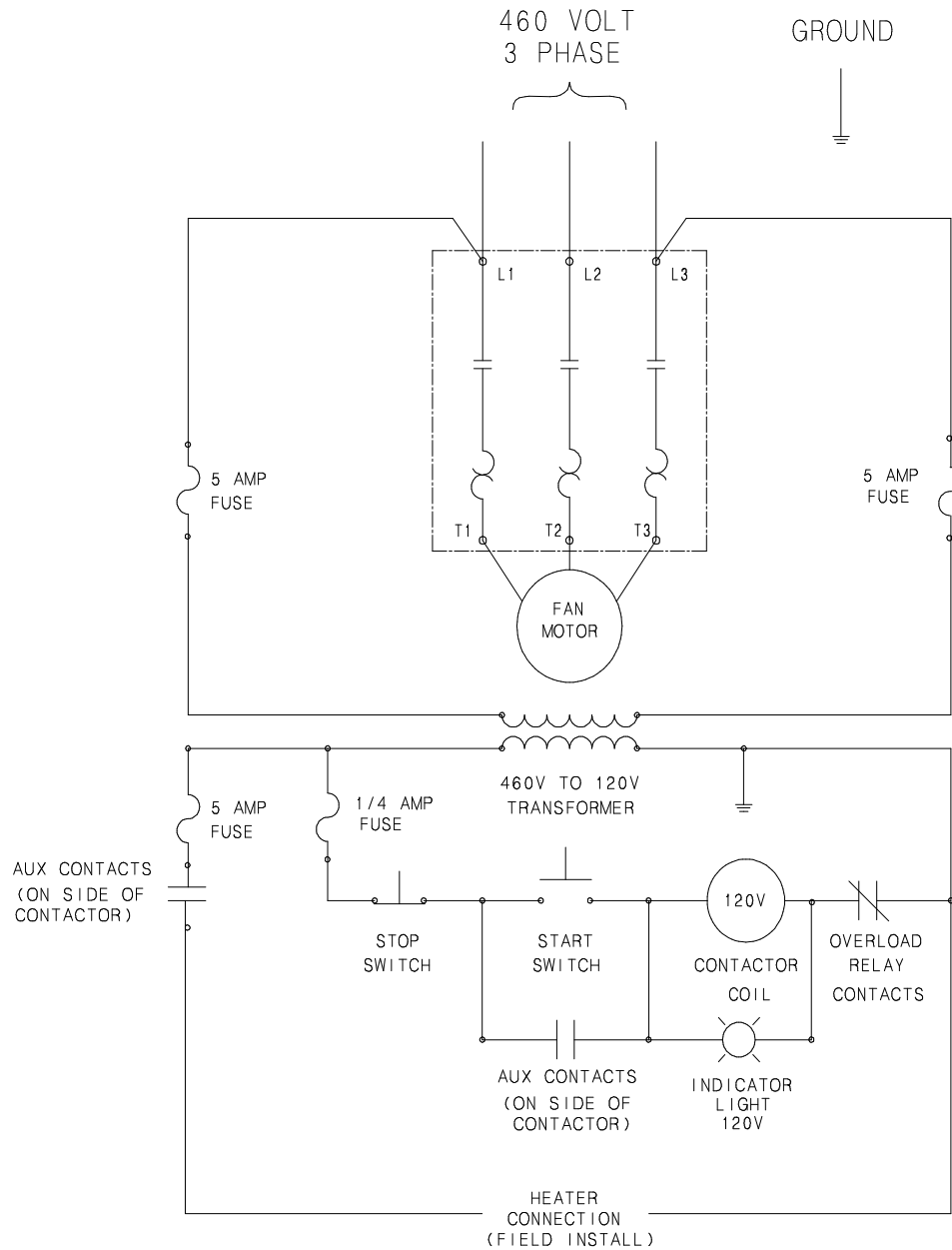
1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

**NOTE**

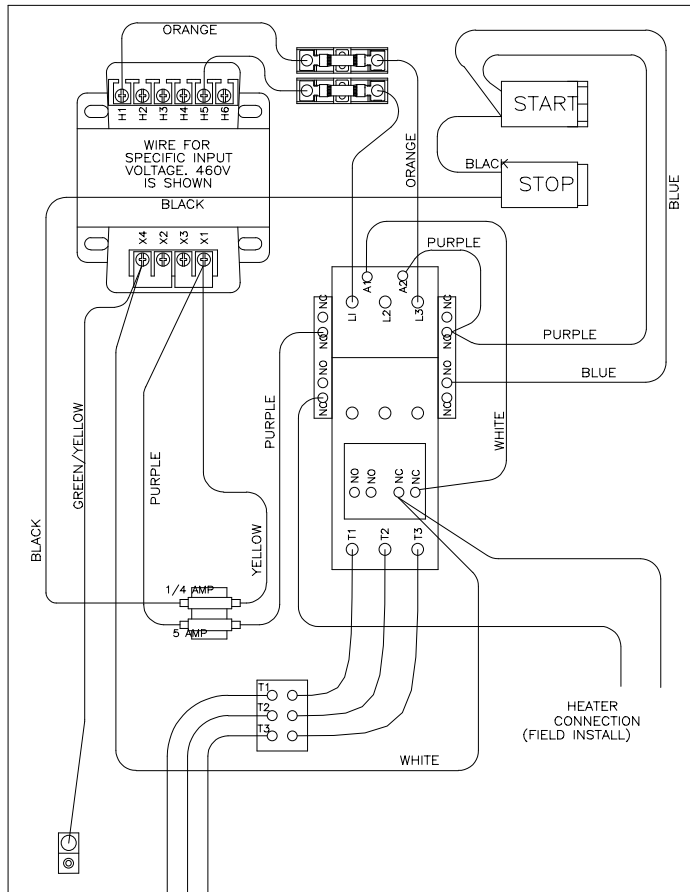
Refer to chart above to determine which connection diagram to use.

# SCHEMATICS / WIRING DIAGRAMS

## Wiring Schematic - 460 Volt 3 Phase

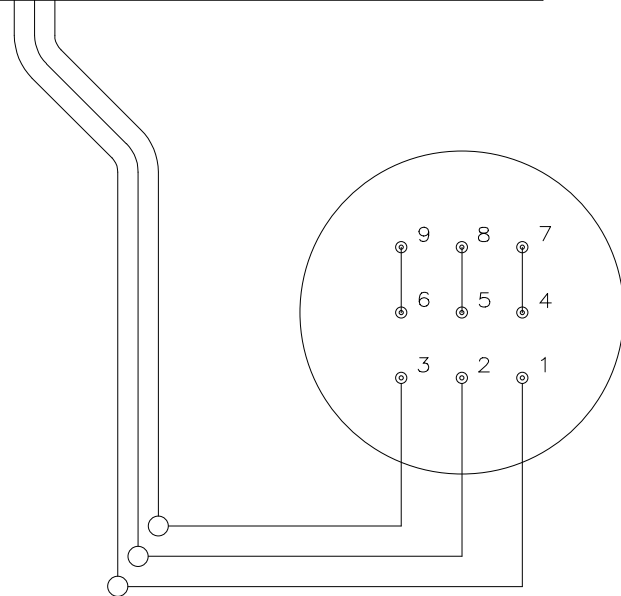


**Wiring Diagram - 460 Volt 3 Phase**



Fan Model	Motor Connection Diagram
CF-3	CD0005
CF-5	CD0005
CF-7.5	CD0005
CF-10	CD0005
CF-15	CD0005
CF-20	CD0180
CF-25	CD0005
CF-30	CD0005
CF-40	CD0005
CF-50	CD0005

Fan Model	Motor Connection Diagram
CHS-3	CD0005
CHS-5	CD0005
CHS-7.5	CD0005
CHS-10	CD0005
CHS-15	CD0005
CHS-20	CD0005
CHS-30	CD0005
CHS-40	CD0180
CHS-50	CD0180



**NOTES:**

1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

**Double Inlet Fans**

**NOTE:**

Refer to Supplements provided by component manufacturers for installation and maintenance of the Double Inlet Fan Bearings and Shaft Coupling.

**PNEG-1436**

**INSTRUCTIONS- DODGE GRIP-TIGHT**

**PNEG-1437**

**INSTRUCTIONS- REXNORD COUPLING**



## WARRANTY

THE GSI GROUP, INC. ("GSI") WARRANTS ALL PRODUCTS MANUFACTURED BY GSI TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF 12 MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER OF SUCH PRODUCTS. GSI'S ONLY OBLIGATION IS, AND PURCHASER'S SOLE REMEDY SHALL BE FOR GSI, TO REPAIR OR REPLACE, AT GSI'S OPTION AND EXPENSE, PRODUCTS THAT, IN GSI'S SOLE JUDGMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM GSI'S FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF GSI SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE ABOVE STATED EXPRESS LIMITED WARRANTIES, GSI MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH (i) PRODUCT MANUFACTURED OR SOLD BY GSI OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCT OR PRODUCTS.

IN NO EVENT SHALL GSI BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE LIMITED TO THAT STATED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. GSI SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIVE OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF GSI.

GSI ASSUMES NO RESPONSIBILITY FOR FIELD MODIFICATIONS OR ERECTION DEFECTS WHICH CREATE STRUCTURAL OR STORAGE QUALITY PROBLEMS. MODIFICATIONS TO THE PRODUCT NOT SPECIFICALLY COVERED BY THE CONTENTS OF THIS MANUAL WILL NULLIFY ANY PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE.

THE FOREGOING WARRANTY SHALL NOT COVER PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION OR ACCIDENT. THIS WARRANTY COVERS ONLY PRODUCTS MANUFACTURED BY GSI. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. GSI RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION.

---

**This Equipment shall be installed in accordance with the current installation codes and applicable regulations which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installation occurs.**

Revisions:

March 2005 - Updated specifications and parts pages.

March 31,2005 - Corrected wiring schematic for typos. (Pages 50,52,54,56,58,60)