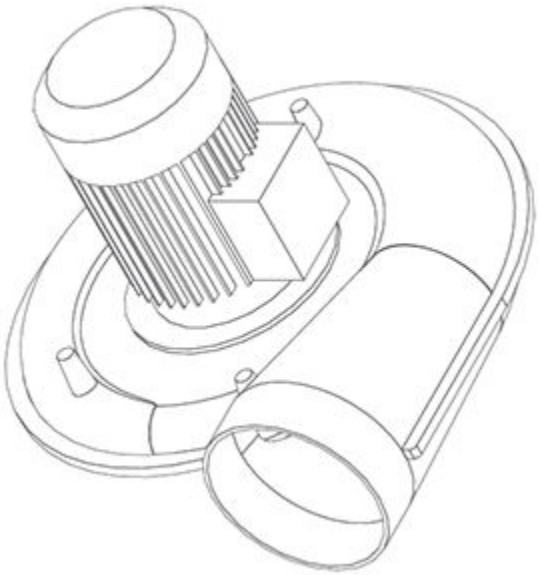
INSTRUCTION MANUAL

PRISM™ 2400 STATIONARY FAN



For use with Product/Code Numbers:

13120, 13121

Save for future reference

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THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
www.lincolnelectric.com

Contents

SAFETY INFORMATION

SAFETY DEPENDS ON YOU

Lincoln welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation ... and thoughtful operation on your part. DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT. And, most importantly, think before you act and be careful.

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

This statement indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

Notice: This statement indicates the possibility of damage to equipment if the potential risk is not avoided.

PLEASE EXAMINE CARTON AND EQUIPMENT FOR DAMAGE IMMEDIATELY

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

KEEP YOUR HEAD OUT OF THE FUMES

- **DON'T** get too close to the weld. Use corrective lenses if necessary to stay a reasonable distance away from the weld.
- **USE ENOUGH VENTILATION** or exhaust at the weld, or both, to keep the fumes and gases from your breathing zone and the general area.
- **IN A LARGE ROOM OR OUTDOORS** , natural ventilation may be adequate if you keep your head out of the fumes.
- **USE NATURAL DRAFTS** or fans to keep the fumes away from your face.
- **READ** and obey the Safety Data Sheet (SDS) and the warning label that appears on all containers of welding materials.

If you develop unusual symptoms, see your supervisor. Perhaps the welding atmosphere and ventilation system should be checked.

WEAR CORRECT EYE, EAR AND BODY PROTECTION

- **PROTECT** your eyes and face with properly fitted and with proper grade of filter plate (See ANSI Z49.1).
- **PROTECT** your body from welding spatter and arc flash with protective clothing including woolen clothing, flame-proof apron and gloves, leather leggings, and high boots.
- **PROTECT** others from spatter, flash, and glare with protective screens or barriers.
- **PROTECT** your eyes and face with welding helmet
- **IN SOME AREAS**, protection from noise may be appropriate.
- **BE SURE** protective equipment is in good condition.

- **AT ALL TIMES**, wear safety glasses in work area.

- **DO NOT WELD OR CUT** containers or materials which previously had been in contact with hazardous substances unless they are properly cleaned. This is extremely dangerous.

- **DO NOT WELD OR CUT** painted or plated parts unless special precautions with ventilation have been taken. They can release highly toxic fumes or gases.
- **PROTECT** compressed gas cylinders from excessive heat, mechanical shocks, and arcs; fasten cylinders so they cannot fall.
- **BE SURE** cylinders are never grounded or part of an electrical circuit.
- **REMOVE** all potential fire hazards from welding area.

- **ALWAYS HAVE FIRE FIGHTING EQUIPMENT READY FOR IMMEDIATE USE AND KNOW HOW TO USE IT.**

CALIFORNIA PROPOSITION 65 WARNINGS

⚠ WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects, or other reproductive harm.

Always start and operate the engine in a well-ventilated area.

If in an exposed area, vent the exhaust to the outside.

Do not modify or tamper with the exhaust system.

Do not idle the engine except as necessary.

⚠ WARNING

This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code § 25249.5 et seq.)

For more information go to https://www.p65warnings.ca.gov

ARC WELDING CAN BE HAZARDOUS

PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended that you purchase a copy of "Safety in Welding & Cutting - ANSI Standard Z49.1" from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2. A Free copy of "Arc Welding Safety" booklet E205 is available from the Lincoln Electric Company, 22801 St. Clair Avenue, Cleveland, Ohio 44117-1199.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

FOR ENGINE POWERED EQUIPMENT

- Turn the engine off before troubleshooting and maintenance work unless the maintenance work requires it to be running.

- Do not add the fuel near an open flame welding arc or when the engine is running. Stop the engine and allow it to cool before refueling to prevent spilled fuel from vaporizing on contact with hot engine parts and igniting. Do not spill fuel when filling tank. If fuel is spilled, wipe it up and do not start engine until fumes have been eliminated.

- Keep all equipment safety guards, covers and devices in position and in good repair. Keep hands, hair, clothing and tools away from V-belts, gears, fans and all other moving parts when starting, operating or repairing equipment.

- In some cases it may be necessary to remove safety guards to perform required maintenance. **REMOVE GUARDS ONLY** when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.
- **DO NOT** put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.
- To prevent accidentally starting gasoline engines while turning the engine or welding generator during maintenance work, disconnect the spark plug wires, distributor cap or magneto wire as appropriate.

- To avoid scalding, do not remove the radiator pressure cap when the engine is hot.

- Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.
- Using a generator indoors **CAN KILL YOU IN MINUTES**.
- **NEVER** use inside a home or garage, EVEN IF doors and windows are open.

- **ONLY** use **OUTSIDE** and far away from windows, doors and vents.
- Avoid other generator hazards. **READ MANUAL BEFORE USE**.

ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS

- Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines.
- EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.
- Exposure to EMF fields in welding may have other health effects which are now not known.

All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

- Route the electrode and work cables together - Secure them with tape when possible.
- Never coil the electrode lead around your body.
- Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.
- Connect the work cable to the workpiece as close as possible to the area being welded.
- Do not work next to welding power source.

ELECTRIC SHOCK CAN KILL

- The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate hands.
- Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:

- Semiautomatic DC Constant Voltage (Wire) Welder.
- DC Manual (Stick) Welder.
- AC Welder with Reduced Voltage Control.
- In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.
- Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.
- Ground the work or metal to be welded to a good electrical (earth) ground.
- Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- Never dip the electrode in water for cooling.

- Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.
- When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- **Also see** WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION **and** FOR ELECTRICALLY POWERED EQUIPMENT

ARC RAYS CAN BURN

- Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.
- Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

FUMES AND GASES CAN BE DANGEROUS

Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.

- **When welding hardfacing (see instructions on container or SDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation unless exposure assessments indicate otherwise. In confined spaces or in some circumstances, outdoors, a respirator may also be required. Additional precautions are also required when welding on galvanized steel.**
- The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.
- Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.
- Shielding gases used for welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- Read and understand the manufacturer’s instructions for this equipment and the consumables to be used, including the Safety Data Sheet (SDS) and follow your employer’s safety practices. SDS forms are available from your welding distributor or from the manufacturer.
- Also see FOR ENGINE POWERED EQUIPMENT

WELDING AND CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION

- Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.
- Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to **“Safety in Welding and Cutting” (ANSI Standard Z49.1)** and the operating information for the equipment being used.

- When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.
- Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to ensure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been “cleaned”. For information, purchase “Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances”, **AWS F4.1** from the American Welding Society.
- Vent hollow castings or containers before heating, cutting or welding. They may explode.
- Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuff-less trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.
- **Read and follow NFPA 51B** “Standard for Fire Prevention During Welding, Cutting and Other Hot Work”, available from NFPA, 1 Batterymarch Park, PO box 9101, Quincy, MA 022690-9101.
- **DO NOT** use a welding power source for pipe thawing.

CYLINDER MAY EXPLODE IF DAMAGED

- Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

Cylinders should be located:

- Away from areas where they may be struck or subjected to physical damage.
- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.
- Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-l, “Precautions for Safe Handling of Compressed Gases in Cylinders,” available from the Compressed Gas Association, 14501 George Carter Way Chantilly, VA 20151.

FOR ELECTRICALLY POWERED EQUIPMENT

- Turn off input power using the disconnect switch at the fuse box before working on the equipment.
- Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer’s recommendations.
- Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer’s recommendations.

BATTERY HANDLING, STORAGE, AND DISPOSAL

Batteries can be flammable substances such as lithium or other organic solvents, which may result in overheating, rupture, or combustion. Failure to follow the battery manufactures instructions may result in fire, personal injury, and damage to property if used improperly.

- DO NOT short circuit, disassemble, deform, or heat batteries.
- DO NOT attempt to recharge batteries unless they are specifically marked as "rechargeable".
- DO NOT use or charge the battery if it appears to be leaking, deformed or damaged in any way.
- Store in a cool location. Keep batteries away from direct sunlight, high temperature, and high humidity.
- Immediately discontinue use of the battery if, while using, charging, or storing the battery, the battery emits an unusual smell, feels hot, changes color, changes shape, or appears abnormal in any other way.
- Keep batteries out of reach of children, should a child swallow a battery, consult a physician immediately.
- Recycle or dispose of batteries in accordance with local and federal laws.

FOR LASER EMITTING EQUIPMENT

- Hazardous Class 4 (IV) laser products emit invisible, infrared laser radiation which can permanently damage the eye's retina and/or cornea, burn skin, and pose a fire risk. End users shall assign a qualified Laser Safety Officer (LSO) who has the certifications required by applicable law/standards, have a documented Laser Safety Program and have a Laser Controlled Area (LCA) that confirms to ANSI Z136.1 & Z136.9.
- Do not operate laser before end user's LSO has completed a risk assessment and all the prescribed Risk Mitigations measures have been fully implemented. Ensure the laser is operated/ demonstrated safely by trained personnel and that the environment surrounding the laser welding cell or laser-controlled area is safe for people nearby when the laser is in operation.
- Never point the laser at yourself or others. Never look directly into a laser aperture, even if wearing full eye protection.
- All persons inside LCA must wear proper PPE to avoid eye or skin exposure to laser radiation. The end user's LSO shall select proper PPE including, but not limited to, heat-resistant gloves, flame-resistant clothing, laser safety eye wear and laser-safe helmets that conform to ANSI Z136.1 Optical Density requirements for the wavelength and output power of the laser in use. Standard safety glasses and welding helmets DO NOT provide adequate protection from laser beam hazards. Always inspect PPE for damage or improper fit before use.
- Only qualified persons shall install, operate or service this unit per ANSI Z136.1 standards and your LSO's instruction. Read and follow all labels and manuals before installing, operating, or servicing hand held any laser welding equipment.
- Do not operate outside of a LCA, or if the laser protective housing is modified or damaged, or if safety interlocks have been bypassed or otherwise defeated. Inspect all equipment and LCA for damage or tampering prior to use.
- Reflected beams from the laser can damage eyes and skin and can pose a fire risk. Prior to use, the LCA should be assessed by the LSO to understand the surfaces where hazardous reflected beams can exist. Never position yourself or flammable material in the anticipated laser beam path and take extra precautions when working on reflective materials like aluminum and stainless steel.
- Follow all standards, individual facility or building regulations, and national, state, and local codes.

DEALER LOCATOR & PRODUCT REGISTRATION

Register your machine:

https://www.lincolnelectric.com/register

Authorized Service and Distributor Locator:

https://www.lincolnelectric.com/locator

ADDITIONAL SAFETY INFORMATION

Refer to http://www.lincolnelectric.com/safety for additional safety information

CONTACT US

Need Help? Call 1.866.532.0411 to talk to a Service Representative. Visit Automation Services for additional support: www.lincolnelectric.com/en/Automation/Automation-Services

INSTALLATION

GENERAL DESCRIPTION

The Prism™ 2400 Stationary Fan provides low vacuum, high volume airflow for fume extraction and ventilation applications. It is intended for use with large diameter (6-8 in.) flexible arms or hoods and is most commonly paired with a Lincoln Electric Flexible 10 ft or 13 ft spring-balanced, articulated arm. The Telescopic, or Flexible 7 FT arm is a popular choice for small booth or workstation applications.

Extracted air can be vented to the outside through an Air Exhaust Silencer or filtered through a wall-mounted filtration unit such as the Prism Wall Mount.

Operation of the Prism™ 2400 Stationary Fan is controlled using the Starter/Overload Switch or the Lamp Kit with Arc Sensor. The Starter/Overload Switch allows the operator to manually turn the Prism™ 2400 Stationary Fan on and off and protects the fan motor against over-current. The Lamp Kit with Arc Sensor includes a lamp for illuminating the work piece, hood-mounted on/off switches for the lamp and extraction fan, motor overload protection, and an arc sensor for automatic operation of the extraction fan.

TECHNICAL SPECIFICATIONS

GENERAL		
PRODUCT NUMBER	K1656-9	K2497-13
INPUT POWER	115V, 1Ph, 60Hz	230V, 1Ph, 50Hz
RATED CURRENT DRAW	7A	3.5A
HORSEPOWER	1HP (0.75 kW)	
SOUND LEVEL	69 dB(A) according to ISO 3746	
WEIGHT	28 lbs. (14 kg)	
AMBIENT CONDITIONS		
MINIMUM TEMPERATURE	41°F (5°C)	
MAXIMUM TEMPERATURE	113°F (45°C)	
MAXIMUM RELATIVE HUMIDITY	80%	

Note: Technical specifications are subject to change without prior notice. Specifications and guarantees are valid only when specified spare parts and filters are used.

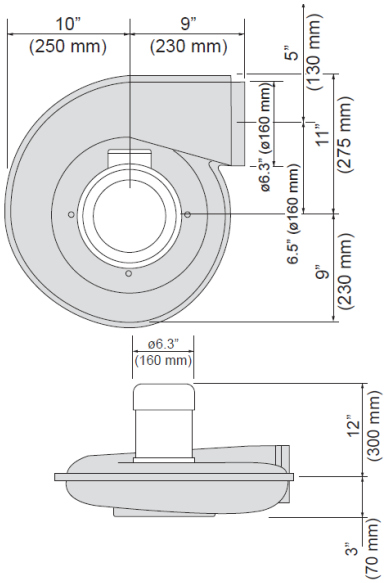


Figure 1 : DIMENSIONS

Prism™ 2400 Stationary Fan AIRFLOW / STATIC PRESSURE

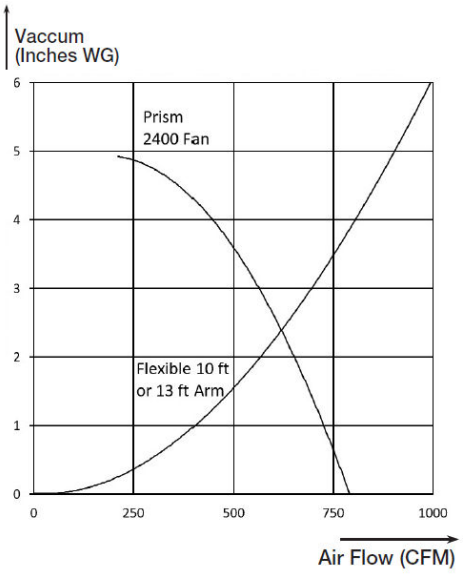


Figure 2 : Flexible 10 FT & 13 FT Arms

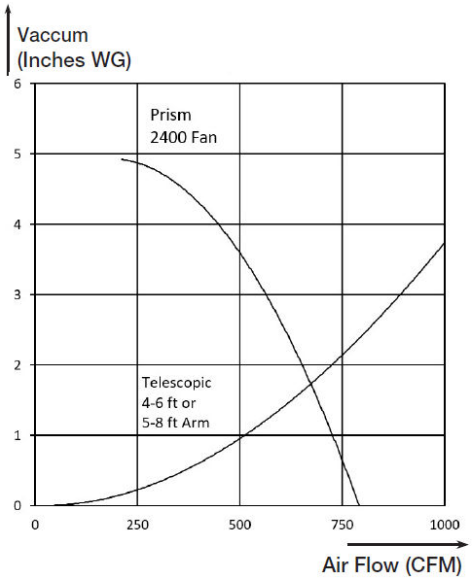


Figure 3 : Telescopic 4-6 FT or 5-8 FT Arms

INSTALLATION OF WALL MOUNTING BRACKETS

The installer is responsible for following Federal, State and Local safety codes and regulations.

Before drilling, verify locations of existing gas, water, or electrical conduits.

⚠ WARNING

ELECTRICAL SSHOCK can kill.

Do NOT touch electrically live parts such as internal wiring.

Turn the input power off at the fuse box BEFORE working on this equipment.

Have a qualified person install and service this equipment.

GROUNDING INSTRUCTIONS

This appliance must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.

⚠ WARNING

MOVING PARTS can injure.

DO NOT operate with covers open or filter removed.

Keep away from moving parts.

ONLY QUALIFIED PERSONNEL SHOULD INSTALL, USE OR SERVICE THIS EQUIPMENT.

K1657-1 Wall Mounting Bracket kit includes:

- (2) Bracket pieces
- Hanging Adapter
- Spring Bracket
- Flexible Hose
- (2) Bolts, M8x1.25, about 1.75” (45mm) long
- (4) Bolts, M8x1.25, about 3.00” (75mm) long
- (6) Nuts, Self-Locking, M8
- (6) Washers, M8

K1657-2 Wall Mounting Bracket kit includes:

- (2) Bracket pieces
- Tapered connection flange
- Hose Clamp, 8” (203mm)

Note: Starter/Overload Switch must be installed with this package. See the installation section later in this manual for details on installing this equipment.

K1494-2 STARTER/OVERLOAD SWITCH FOR 120V

K1494-3 STARTER/OVERLOAD SWITCH FOR 230V

Standard mounting height is approximately 8 ft., 2 in. from the floor to the top of the wall mounting bracket. See Figure 4 : Stud Mounting on page A-4 for drilling dimensions.

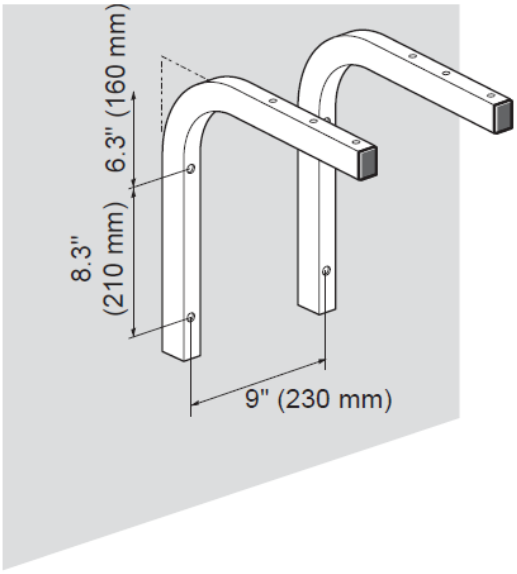


Figure 4 : Stud Mounting

See Figure 5 : Thin Wall Mounting on page A-4 for recommended mounting methods for installation on various wall types.

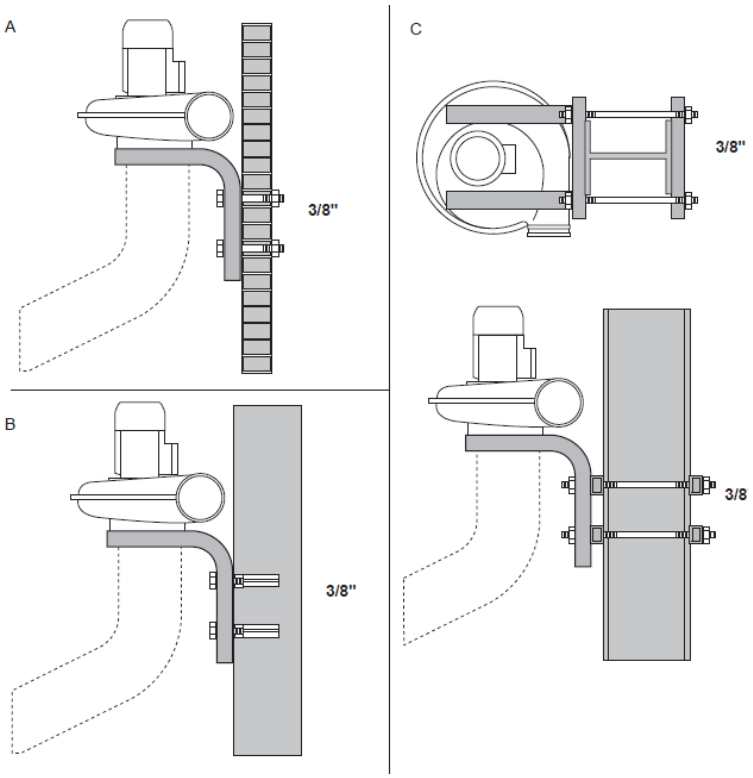


Figure 5 : Thin Wall Mounting

INSTALLATION FEXIBLE 10 FT OR 13 FT EXTRACTION ARM

K1656-9 Prism 2400 Stationary Fan Includes:

- Prism 2400 Stationary Fan
- (2) Bolts, M8x1.25, about 0.75” (20mm) long
- (2) Bolts, M8x1.25, about 2.5” (65mm) long
- (4) Washers, M8

K1655-8 Flexible 10 FT or K1655-9 Flexible 13 FT Arm includes:

- Assembled arm, 2 sections
- Flexible hose, (2) 8” Rubber seals for hood hinge
- Hood assembly
- (2) Bolts, M8x1.25, about 1.75” (45mm) long
- (2) Nuts, M8 self-locking
- Hose running guard
- Clamping pin for red plastic ring
- Metal rotating hinge
- Red plastic ring

Install mounting brackets as detailed in INSTALLATION OF WALL MOUNTING BRACKETS on page A-3

Mounting the Extraction Arm

Leave the tape and plastic packaging on the extraction arm sections until the arm is completely installed (including mounting the hood). The arm is spring-balanced to compensate for the weight of the hood and will spring out quickly if it is not mounted securely, with the hood in place.

The rotating hinge of the arm comes in three pieces: Metal rotating hinge, red plastic ring, and clamping pin. See Figure 6 : Rotating Hinge on page A-6 . Mount the red plastic ring to the metal rotating hinge by fitting the clamping pin through the hole in the rotating rod, and snapping it into place on the U-shaped indents on the red plastic ring. The lip of the ring should fit securely against the top edge of the rotating flange, yet rotate with the rod. The assembly should look like Part C in Figure 7 : Hinge Mounting on page A-6 .

Position the rotating hinge on the wall mounting bracket (See Figure 7 : Hinge Mounting on page A-6) so that the cable hole (Item A) is on the wall side and the long side of the pin (Item B) is in the front. Use the four 3” bolts with washers and nuts supplied with the wall mounting brackets to secure the rotating hinge.

SEE THE FLEXIBLE 10 FT OR 13 FT EXTRACTION ARMS OPERATOR’S MANUAL FOR DETAILS ON COMPLETING THE INSTALLATION OF THE ARM.

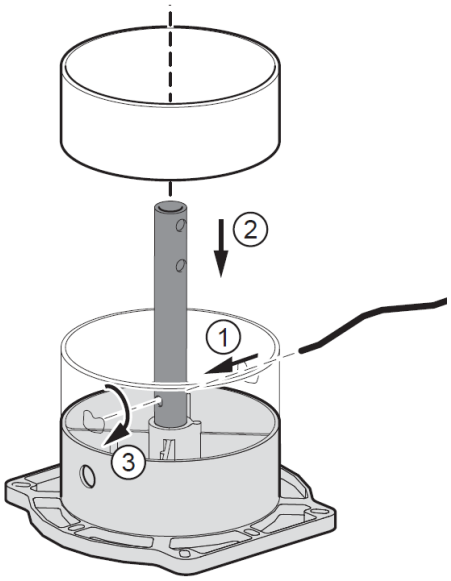


Figure 6 : Rotating Hinge

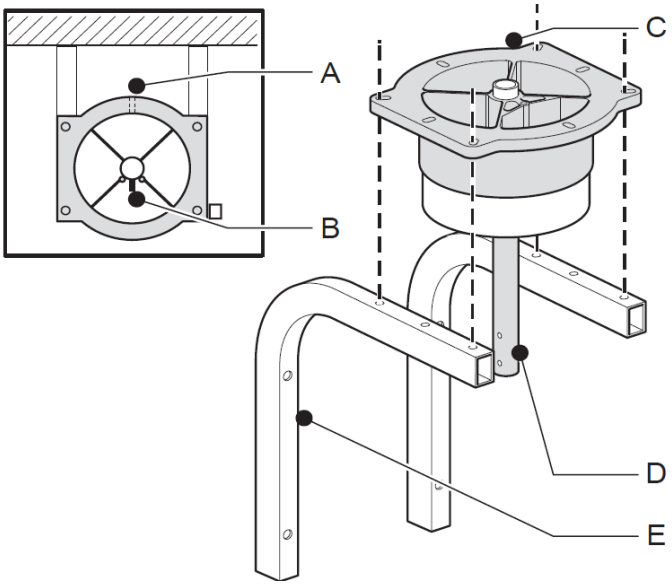


Figure 7 : Hinge Mounting

INSTALLATION TELESCOPIC 5 FT EXTRACTION ARM

K1656-9 Prism 2400 Stationary Fan Includes:

- Prism 2400 Stationary Fan
- (2) Bolts, M8x1.25, about 0.75” (20mm) long
- (2) Bolts, M8x1.25, about 2.5” (65mm) long
- (4) Washers, M8

K1655-10 Telescopic 5 FT Extraction Arm includes:

- Telescopic Arm, Assembled
- Flexible hose, (2) 8” Rubber seals for connection to fan

Install wall mounting brackets as detailed in INSTALLATION OF WALL MOUNTING BRACKETS on page A-3 .

Position the tapered connection flange (See Figure 8 : Tapered Connection Flange on page A-7 , item C) on the wall mounting brackets. Use the (2) 0.75” long and (2) 2.5” long bolts with washers supplied with the fan to secure the Prism™ 2400 Stationary Fan (item B) and the tapered connection flange to the wall mounting brackets. Tighten all bolts securely to make a good seal on the inlet of the fan.

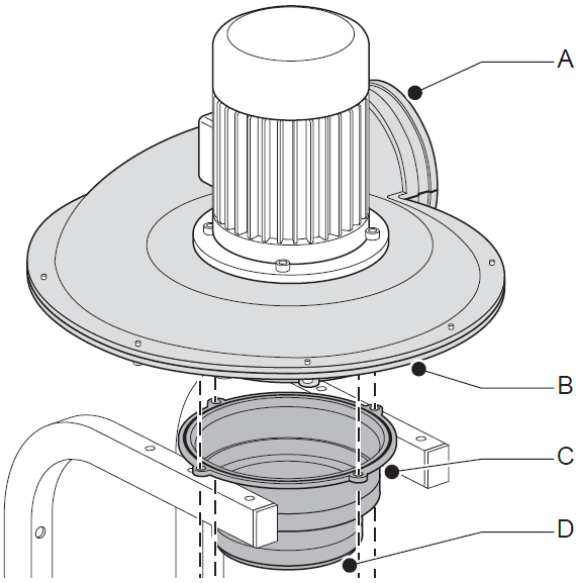


Figure 8 : Tapered Connection Flange

Position one of the 8” rubber seals supplied with the Telescopic 5 FT Arm on the largest part (8” diameter) of the tapered connection flange. Roll the bottom of the rubber seal up, and slide one end of the 4 ft. flexible hose (supplied with the arm) up over the tapered connection flange until it butts up against the folded side of the rubber seal. Fold the rubber seal down over the hose.

Secure the connection with one 8” hose clamp. Apply the second 8” rubber seal and the other end of the flexible hose to the top of the telescopic arm tube.

SEE THE TELESCOPIC 5 FT EXTRACTION ARM OPERATOR’S MANUAL FOR DETAILS ON COMPLETING THE INSTALLATION OF THE ARM.

INSTALLING WITH OPTIONAL PRISM WALL MOUNT

The Prism Wall Mount Filter Unit can be installed to filter the exhausted air before it is recirculated or exhausted outside.

The K1654-4 Prism Wall Mount Filter Unit Includes:

- Complete Filter Unit, with filter installed and inlet(s) and outlet(s) sealed
- Reducer, 6”-8”
- 8” Connection hose, 4 ft. long
- (2) 8” Hose Clamps

Fit the small (6” diam.) side of the 6”-8” Reducer (See Figure 10, item B) over the outlet of the Prism 2400 Fan (See Figure 9 : Prism Wall Mount on page A-8 , item A); be sure to slide the Reducer all the way over the rubber seal. Secure with three sheet-metal screws through the reducer into the plastic molded fan outlet.

Fit one end of the 8” Connection hose (item C) over the larger side of the 6”-8” Reducer. Secure with one 8” hose clamp.

SEE PRISM WALL MOUNT MANUAL FOR COMPLETION OF THE INSTALLATION PROCEDURE.

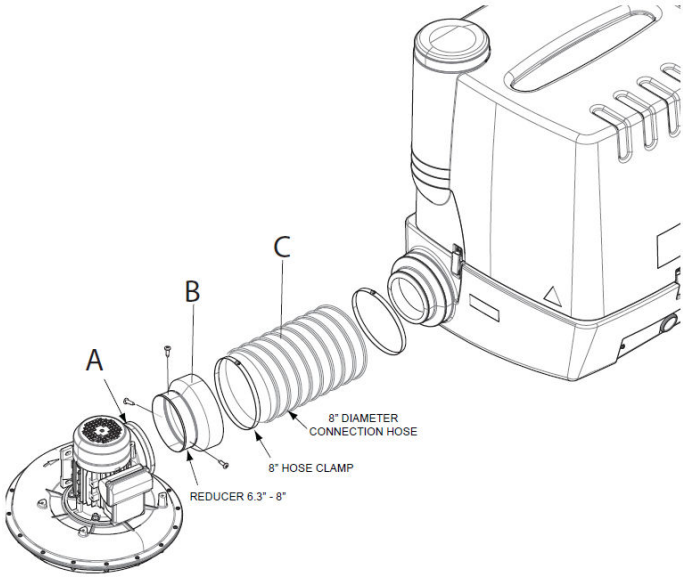


Figure 9 : Prism Wall Mount

PRISM 2400 STATIONARY FAN MOUNTING

Mounting the Prism 2400 Fan:

Use the (2) 0.75” bolts and the (2) 2.5” bolts with washers supplied with the fan to mount the fan (See Figure 10 : Prism 2400 Stationary Fan Mounting on page A-8 , Item B) to the rotating hinge (Item C) as shown. Tighten all mounting bolts firmly to make the seal at the inlet of the fan.

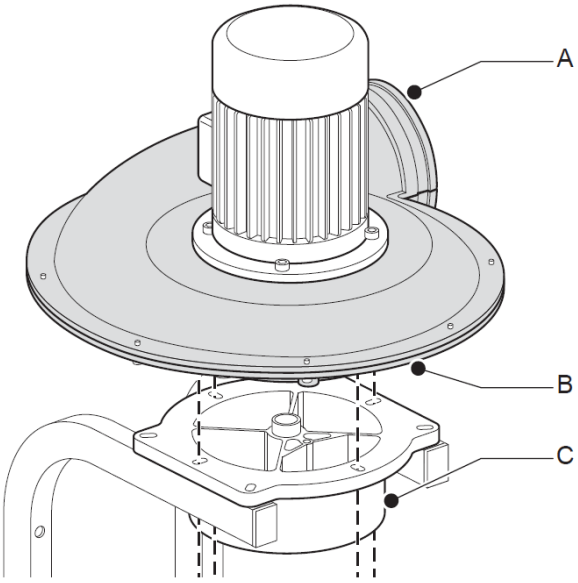


Figure 10 : Prism™ 2400 Stationary Fan Mounting

SEE INSTALLING THE STARTER/OVERLOAD SWITCH AND INSTALLING THE OPTIONAL LAMP KIT AND AUTOMATIC START/STOP ARC SENSOR.

INSTALLING THE STARTER/OVERLOAD SWITCH

120V ARRANGEMENT

The K1494-2 Starter/Overload Switch is used for manual operation of the Prism™ 2400 Stationary Fan. The Starter/Overload Switch is not required if using a K1669-4 Lamp Kit with Arc Sensor.

Mount the Starter/Overload Switch to a wall in a location convenient to the operator.

Route a 120VAC, 1ph, 60hz supply cable into the switch compartment and a power cable between the switch and the Prism™ 2400 Stationary Fan Have a qualified electrician make the connections per the wiring diagram located in the APPENDIX on page A-1 of this manual. Set the overload to 10.0A.

230V ARRANGEMENT

The K1494-3 Starter/Overload Switch is used for manually operation Prism™ 2400 Stationary Fan. The Starter/Overload Switch is not required if using a K1669-4 Lamp Kit with Arc Sensor. The K1750-1 230V Conversion Kit adapts the Lamp Kit with Arc Sensor for operation on 230V.

- Mount the Starter/Overload Switch to a wall in a location convenient to the operator.
- Route a 230VAC, 1ph, 50hz supply cable into the switch compartment and a power cable between the switch and the Prism™ 2400 Stationary Fan. Have a qualified electrician make the connections per the wiring diagram located in APPENDIX on page A-1 of this manual.

Connection changes are necessary to properly operate the fan motor on 230V/1ph. Refer to the connection diagram on motor nameplate.

OPERATION

OPERATING INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

When using electric appliances, basic precautions should always be followed, including the following:

Read all the instructions before using the appliance.

Do not contact moving parts.

Only use attachments recommended or sold by the manufacturer.

For a permanently connected appliance – Turn the power switch to the off position when the appliance is not in use and before servicing or cleaning.

Use the wall-mounted starter/overload switch or the hood-mounted remote switch (if a lamp kit is installed) to turn on the Prism™ 2400 Stationary Fan.

Position hood within 10-15 inches (250-400 mm) of the arc.

<u>If using a Lamp Kit:</u>

- The switch on the hood with a lamp symbol operates the work lamp in the hood.
- The 0/1 switch operates the Prism 2400 Fan.

<u>If using an Auto Start/Stop Arc Sensor:</u>

Leave the 0/1 switch in the 0 (off) position. The arc sensor will automatically switch the fan on when it senses an arc. Standard run-out time is approximately 20 sec. The work lamp operates independently of this sensor.

ACCESSORIES AND OPTIONS

REQUIRED AND OPTIONAL ACCESSORIES

Required accessories for 120/1/60 input power:

K1494-2 STARTER/OVERLOAD SWITCH

Required accessories for 230/1/50 input power:

K1494-3 STARTER/OVERLOAD SWITCH

Additional available equipment:

K1655-8 Flexible 10 FT Extraction Arm
K1655-9 Flexible 13 FT Extraction Arm
K1655-10 Telescopic 5 FT Extraction Arm
K1655-12 Flexible 7 FT Extraction Arm
K1655-13 Low Ceiling 13 FT Extraction Arm
K1534-2 Air Exhaust Silencer

MAINTENANCE

ROUTINE MAINTENANCE

Every 12 months, have a qualified technician check the blower fan and housing for encrusted particles and clean if necessary. Check the sealing material of the extraction fan and replace if necessary.

If used, refer to the Prism Wall Mount, Extraction arm, Extension crane, Lamp kit, and Auto start/stop arc sensor manuals for required routine maintenance operations.

TROUBLESHOOTING

HOW TO USE TROUBLESHOOTING GUIDE

⚠ WARNING

Service and Repair should only be performed by Lincoln Electric Factory Trained Personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your factory warranty. For your safety and to avoid Electrical Shock, please observe all safety notes and precautions detailed throughout this manual.

This Troubleshooting Guide is provided to help you locate and repair possible machine malfunctions. Simply follow the three-step procedure listed below.

1. **LOCATE PROBLEM (SYMPTOM)**

   Look under the column labeled “PROBLEM (SYMPTOMS)”. This column describes possible symptoms that the machine may exhibit. Find the listing that best describes the symptom that the machine is exhibiting.

2. **POSSIBLE CAUSE**

   The second column labeled “POSSIBLE CAUSE” lists the obvious external possibilities that may contribute to the machine symptom.

3. **RECOMMENDED COURSE OF ACTION**

   This column provides a course of action for the Possible Cause, generally it states to contact your local Lincoln Authorized Field Service Facility.

⚠ CAUTION

If you do not understand or are unable to perform the Recommended Course of Action safely, contact your local Lincoln Authorized Field Service Facility.

Observe all additional safety guidelines detailed throughout this manual.

TROUBLESHOOTING GUIDE

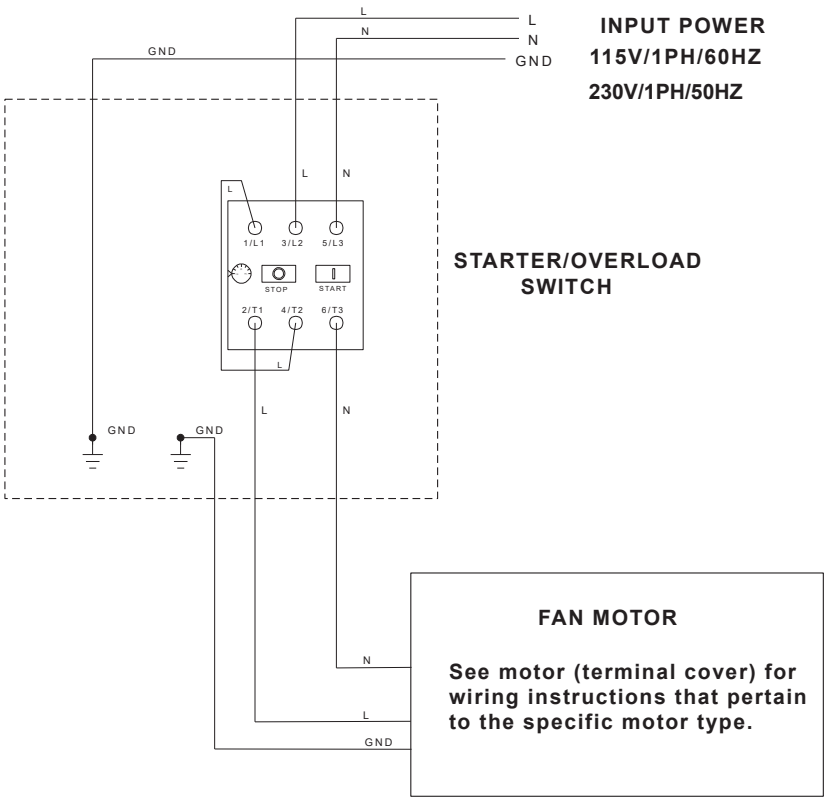
⚠ WARNING

Service and Repair should only be performed by Lincoln Electric Factory Trained Personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your factory warranty. For your safety and to avoid Electrical Shock, please observe all safety notes and precautions detailed throughout this manual.

PROBLEMS / SYMPTOM(S)	POSSIBLE CAUSE(S)	RECOMMENDED COURSE(S) OF ACTION
MOTOR DOES NOT START.	No input power.	Verify 120VAC/60Hz, 1ph or 230VAC/50Hz, 1ph input power at the machine
	Input cord maybe damaged.	Check the integrity of the input cord
	Loose Contacts	Check the contacts.
	Starter/overload switch damaged or defective.	Contact Lincoln Authorized Service Facility
	Motor maybe damaged or defective.	Contact Lincoln Authorized Service Facility
MOTOR HUMS, BUT NO SUCTION.	Motor capacitor defective or not connected.	Contact Lincoln Authorized Service Facility
MOTOR STOPS AUTOMATICALLY	Motor overload protection activated.	Let the machine cool down for a few minutes.
	Motor defective or damaged	Contact Lincoln Authorized Service Facility
POOR SUCTION.	Leakage.	Check hose connections and integrity.
	Outlet grid blocked.	Remove obstructions from outlet grid.
	Air path in arm blocked.	Remove obstructions from arm.
	Filter blocked (check Maintenance Indicator).	Replace filter.
	Spark arrester blocked.	Clean the spark arrester.
	Blower fan blocked.	Clean excess fume or spatter from fan.
	Fan seal damaged.	Check or replace sealing material of fan.
DUST OR SMOKE COMING OUT OF OUTLET.	Filter damaged, or not seated correctly.	Replace the filter or reseat it.
VIBRATIONS IN THE MACHINE.	Imbalance in the fan.	Clean excess dirt from fan.

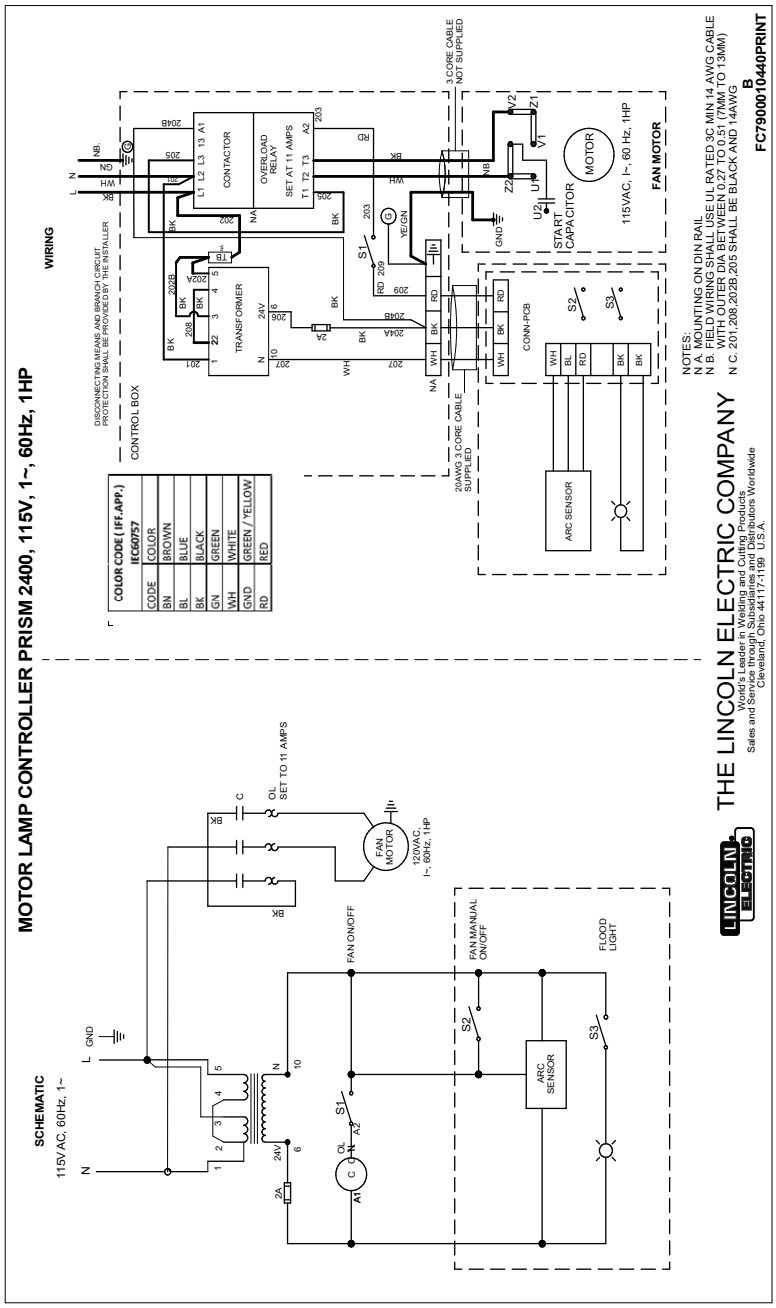
APPENDIX

WIRING DIAGRAM WITH STARTER



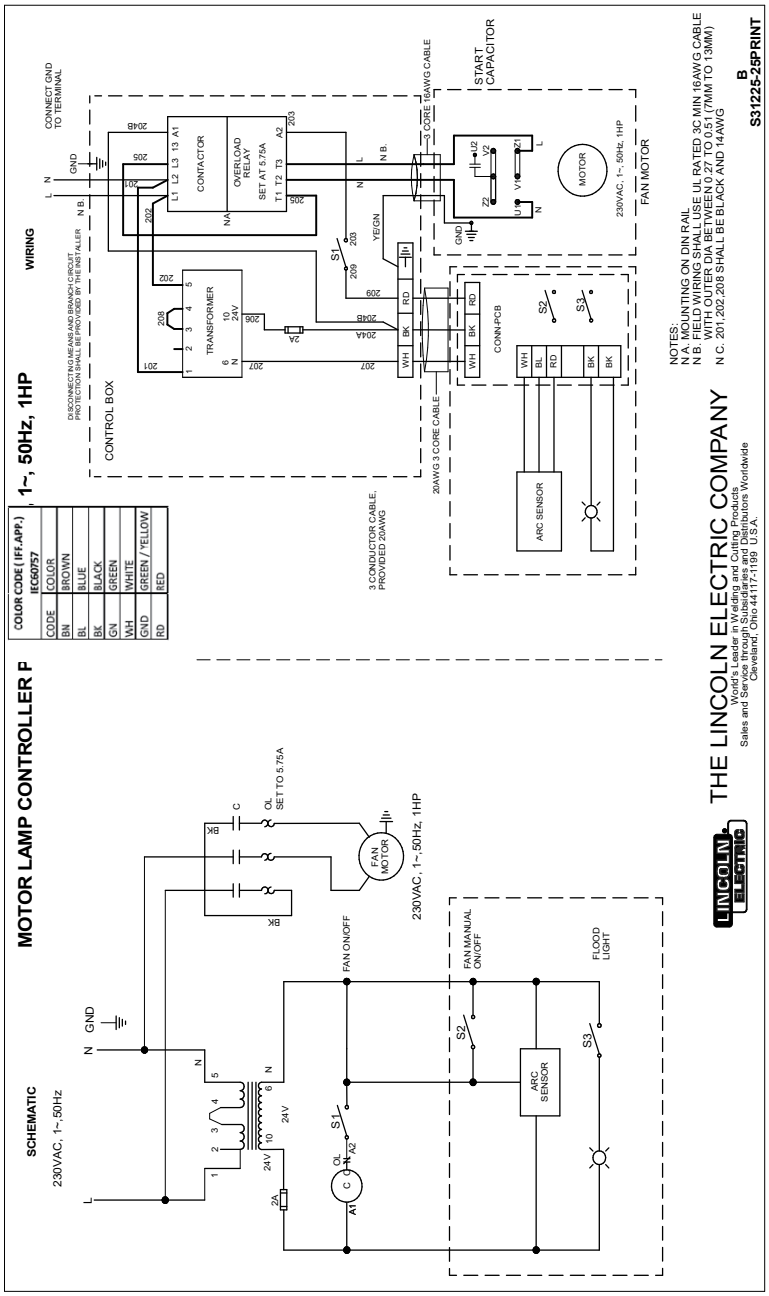
WIRING DIAGRAM WITH LAMP

WIRING DIAGRAM FOR PRISM 2400 FAN WITH K1669-4 LAMP KIT



CONVERSION WIRING DIAGRAM

WIRING DIAGRAM FOR PRISM 2400 FAN WITH K1750-1 CONVERSION KIT



CUSTOMER ASSISTANCE POLICY

CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, and cutting equipment. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

WELD FUME CONTROL EQUIPMENT

The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.

PARTS LIST

Content/Details may be changed or updated without notice. For most current Instruction Manuals, go to PARTS.LINCOLNELECTRIC.COM.