

# Lamp Kit For Wall-Mounted Systems

July, 1999

## Safety Depends on You

Lincoln arc 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.



## OPERATOR'S MANUAL

World's Leader in Welding and Cutting Products



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## ⚠ WARNING



### CALIFORNIA PROPOSITION 65 WARNINGS



Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

The Above For Diesel Engines

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

The Above For Gasoline Engines

**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 W117.2-1974. 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.

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



1.b. Operate engines in open, well-ventilated areas or vent the engine exhaust fumes outdoors.



1.c. 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.



1.d. 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.

1.e. 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.

1.f. 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.

1.g. 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.



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



### ELECTRIC AND MAGNETIC FIELDS may be dangerous

2.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines

2.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult their physician before welding.

2.c. Exposure to EMF fields in welding may have other health effects which are now not known.

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

2.d.1. Route the electrode and work cables together - Secure them with tape when possible.

2.d.2. Never coil the electrode lead around your body.

2.d.3. 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.

2.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

2.d.5. Do not work next to welding power source.

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## ELECTRIC SHOCK can kill.

- 3.a. 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.
- 3.b. 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.
- 3.c. In semiautomatic or automatic wire welding, the electrode, electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically "hot".
- 3.d. 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.
- 3.e. Ground the work or metal to be welded to a good electrical (earth) ground.
- 3.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.
- 3.g. Never dip the electrode in water for cooling.
- 3.h. 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.
- 3.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.
- 3.j. Also see Items 6.c. and 8.



## ARC RAYS can burn.

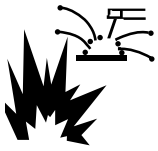
- 4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87.1 standards.
- 4.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.
- 4.c. 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.

- 5.a. 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 with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values (TLV) using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**
- 5.b. 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.
- 5.c. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.
- 5.d. Read and understand the manufacturer's instructions for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer's safety practices. MSDS forms are available from your welding distributor or from the manufacturer.
- 5.e. Also see item 1.b.

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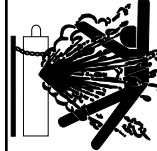


### WELDING SPARKS can cause fire or explosion.

6.a. 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.

- 6.b. 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.
- 6.c. 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.
- 6.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure 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 (see address above).
- 6.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.
- 6.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless 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.
- 6.g. 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.
- 6.h. Also see item 1.c.



### CYLINDER may explode if damaged.

7.a. 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.

- 7.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.
- 7.c. 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.
- 7.d. Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder.
- 7.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.
- 7.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.
- 7.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-1, "Precautions for Safe Handling of Compressed Gases in Cylinders," available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.



### FOR ELECTRICALLY powered equipment.

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

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## PRÉCAUTIONS DE SÛRETÉ

Pour votre propre protection lire et observer toutes les instructions et les précautions de sûreté spécifiques qui paraissent dans ce manuel aussi bien que les précautions de sûreté générales suivantes:

### Sûreté Pour Soudage A L'Arc

1. Protégez-vous contre la secousse électrique:
  - a. Les circuits à l'électrode et à la pièce sont sous tension quand la machine à souder est en marche. Eviter toujours tout contact entre les parties sous tension et la peau nue ou les vêtements mouillés. Porter des gants secs et sans trous pour isoler les mains.
  - b. Faire très attention de bien s'isoler de la masse quand on soude dans des endroits humides, ou sur un plancher métallique ou des grilles métalliques, principalement dans les positions assis ou couché pour lesquelles une grande partie du corps peut être en contact avec la masse.
  - c. Maintenir le porte-électrode, la pince de masse, le câble de soudage et la machine à souder en bon et sûr état de fonctionnement.
  - d. Ne jamais plonger le porte-électrode dans l'eau pour le refroidir.
  - e. Ne jamais toucher simultanément les parties sous tension des porte-électrodes connectés à deux machines à souder parce que la tension entre les deux pinces peut être le total de la tension à vide des deux machines.
  - f. Si on utilise la machine à souder comme une source de courant pour soudage semi-automatique, ces précautions pour le porte-électrode s'appliquent aussi au pistolet de soudage.
2. Dans le cas de travail au dessus du niveau du sol, se protéger contre les chutes dans le cas où on reçoit un choc. Ne jamais enrouler le câble-électrode autour de n'importe quelle partie du corps.
3. Un coup d'arc peut être plus sévère qu'un coup de soleil, donc:
  - a. Utiliser un bon masque avec un verre filtrant approprié ainsi qu'un verre blanc afin de se protéger les yeux du rayonnement de l'arc et des projections quand on soude ou quand on regarde l'arc.
  - b. Porter des vêtements convenables afin de protéger la peau de soudeur et des aides contre le rayonnement de l'arc.
  - c. Protéger l'autre personnel travaillant à proximité au soudage à l'aide d'écrans appropriés et non-inflammables.
4. Des gouttes de laitier en fusion sont émises de l'arc de soudage. Se protéger avec des vêtements de protection libres de l'huile, tels que les gants en cuir, chemise épaisse, pantalons sans revers, et chaussures montantes.
5. Toujours porter des lunettes de sécurité dans la zone de soudage. Utiliser des lunettes avec écrans latéraux dans les zones où l'on pique le laitier.
6. Eloigner les matériaux inflammables ou les recouvrir afin de prévenir tout risque d'incendie dû aux étincelles.
7. Quand on ne soude pas, poser la pince à un endroit isolé de la masse. Un court-circuit accidentel peut provoquer un échauffement et un risque d'incendie.
8. S'assurer que la masse est connectée le plus près possible de la zone de travail qu'il est pratique de le faire. Si on place la masse sur la charpente de la construction ou d'autres endroits éloignés de la zone de travail, on augmente le risque de voir passer le courant de soudage par les chaînes de levage, câbles de grue, ou autres circuits. Cela peut provoquer des risques d'incendie ou d'échauffement des chaînes et des câbles jusqu'à ce qu'ils se rompent.
9. Assurer une ventilation suffisante dans la zone de soudage. Ceci est particulièrement important pour le soudage de tôles galvanisées plombées, ou cadmiées ou tout autre métal qui produit des fumées toxiques.
10. Ne pas souder en présence de vapeurs de chlore provenant d'opérations de dégraissage, nettoyage ou pistologie. La chaleur ou les rayons de l'arc peuvent réagir avec les vapeurs du solvant pour produire du phosgène (gas fortement toxique) ou autres produits irritants.
11. Pour obtenir de plus amples renseignements sur la sûreté, voir le code "Code for safety in welding and cutting" CSA Standard W 117.2-1974.

## PRÉCAUTIONS DE SÛRETÉ POUR LES MACHINES À SOUDER À TRANSFORMATEUR ET À REDRESSEUR

1. Relier à la terre le châssis du poste conformément au code de l'électricité et aux recommandations du fabricant. Le dispositif de montage ou la pièce à souder doit être branché à une bonne mise à la terre.
2. Autant que possible, l'installation et l'entretien du poste seront effectués par un électricien qualifié.
3. Avant de faire des travaux à l'intérieur de poste, la débrancher à l'interrupteur à la boîte de fusibles.
4. Garder tous les couvercles et dispositifs de sûreté à leur place.

# Thank You

for selecting a **QUALITY** product by Lincoln Electric. We want you to take pride in operating this Lincoln Electric Company product  
•• as much pride as we have in bringing this product to you!

### **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.

Please record your equipment identification information below for future reference. This information can be found on your machine nameplate.

Model Name & Number \_\_\_\_\_

Code & Serial Number \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Whenever you request replacement parts for or information on this equipment always supply the information you have recorded above.

**Read this Operators Manual completely** before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. The level of seriousness to be applied to each is explained below:

### **⚠ WARNING**

This statement appears where the information **must** be followed **exactly** to avoid **serious personal injury** or **loss of life**.

### **⚠ CAUTION**

This statement appears where the information **must** be followed to avoid **minor personal injury** or **damage to this equipment**.

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**Technical Specifications- Lamp Kit for Wall-Mounted Systems**

<b>GENERAL</b>	
<b>Sales Specification</b>	<b>K1669-1 Lamp Kit for Wall-Mounted Systems</b>
<b>Operating Voltage</b>	24 VAC
<b>Bulb</b>	Halogen, 35W
<b>Weight</b>	7.7 lbs. (3.5 kg)

<b>AMBIENT CONDITIONS</b>	
<b>Min. Temperature</b>	41°F (5°C)
<b>Max. Temperature</b>	113°F (45°C)
<b>Max. Rel. Humidity</b>	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.

**LAMP KIT FOR WALL-MOUNTED SYSTEMS**





Read this entire installation section before you start installation.

## SAFETY PRECAUTIONS

Do not attempt to use this equipment until you have thoroughly read all installation, operating and maintenance information supplied with your equipment. They include important safety precautions and detailed operating and maintenance instructions.

### ⚠ WARNING



#### ELECTRIC SHOCK 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.



#### MOVING PARTS can injure.

- Do not operate without extraction arm installed.
- Keep away from moving parts.

## GENERAL DESCRIPTION

The K1669-1 Lamp Kit incorporates a work lamp with hood-mount switches for both the lamp and the SF2400 Stationary Extraction Fan. The 35W lamp fits in the hood of the LFA 3.1, LFA 4.1, or LTA 2.0 Arms, to provide a convenient, positionable light at the workspace. The switch for the lamp is hood-mounted, for accessibility. The Lamp Kit also includes a switch at the hood for the SF2400 Extraction Fan, and replaces the K1494-2 Starter/Overload Switch.

The optional K1670-1 Automatic Start/Stop Arc Sensor can be combined with the Lamp Kit to provide automatic switching on and off of the SF2400 Fan when the sensor detects the arc flash.

This manual includes information on installation of a K1669-1 Lamp Kit Package and K1670-1 Auto Start/Stop Arc Sensor only. The Lamp Kit is to be installed after the Arm is completely assembled and mounted with the Wall Bracket and Fan. If not installing the Auto Start/Stop Arc Sensor with the Lamp Kit, skip steps as specified.

For information on installation of a complete wall-mounted system, refer to the SF2400 Fan manual.

The K1669-2 Lamp Kit for Wall-Mounted Systems includes:

- Work Lamp
- 36 ft. long, 3-wire, 20 AWG Connecting Cable
- Control Box
- Thermal Relay, 8-12.5A

### ⚠ WARNING

Only qualified personnel should install, use or service this equipment.

## INSTALLING THE LAMP KIT

The K1669-2 Lamp Kit can be installed with a K1656-1 SF2400 Stationary Fan with a K1655-1 LFA 3.1, 10 ft. Arm, a K1655-2 LFA 4.1, 13 ft. Arm, or a K1655-3 LTA 2.0, Telescopic Arm. The lamp kit can also be used when one of the following extension cranes is installed: K1671-1 Extension Crane, 7 ft. K1671-2 Extension Crane, 14 ft.

Instructions in this section apply to all available combinations of the above equipment.

The Lamp Kit replaces the K1494-2 Starter/Overload. It is not necessary to use the K1669-2 Lamp Kit in conjunction with a K1494-2 Starter/Overload Switch.

Pop out the sealing plate (Fig. 1A) on the top of the hood with a screwdriver. Remove the six screws (Fig. 1C) and the airflow focus vanes (Fig. 1B). Open the airflow throttle valve (Fig. 1D).

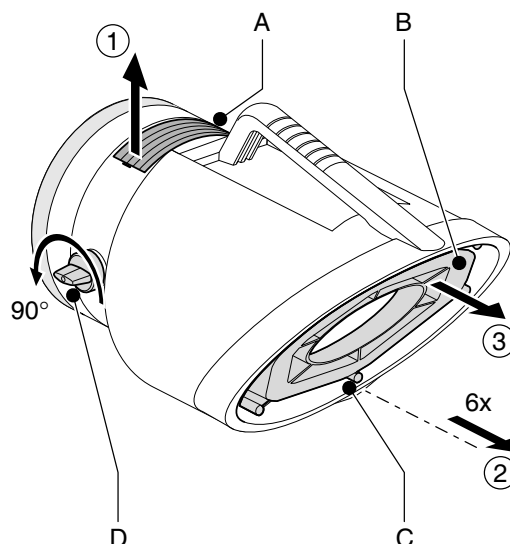


Fig. 1

## INSTALLING THE LAMP KIT

### INSTALLING THE AUTO START/STOP SENSOR

If not installing the Auto start/stop arc sensor, skip to the next step (Figure 3).

Use a small phillips-head screwdriver to remove the six screws that hold the lamp housing (Fig. 2A) together. Insert the sensor (Fig. 2B) as shown. Route the leads through the lamp housing and out with the lamp leads as shown in Figure 2. Reclose the lamp housing using the six screws.

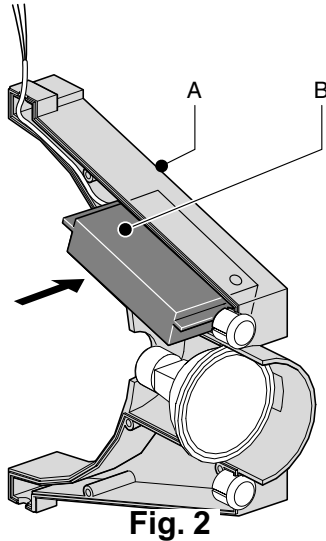


Fig. 2

### INSTALLING THE LAMP IN THE HOOD

Feed the lamp and/or sensor cable(s) (Fig. 3B) through the hole (Fig. 3A) in the top of the hood, and snap the lamp holder (Fig. 3C) into place, top end first. Remount the airflow focus vanes in the open end of the hood.

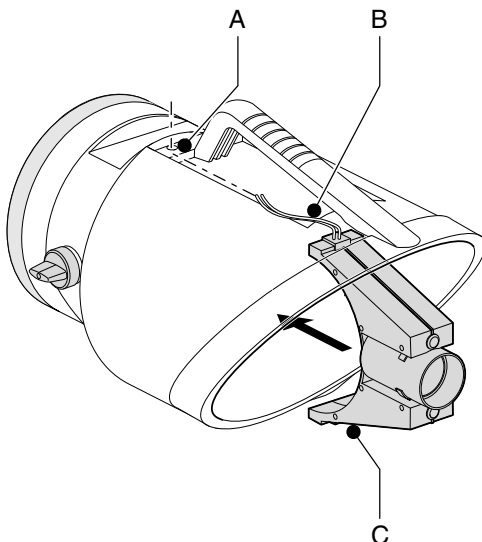


Fig. 3

### INSTALLING THE SWITCH BOX AND MAKING CONNECTIONS

Feed the 36 ft. connecting cable through the hole in the hood (Fig. 4B).

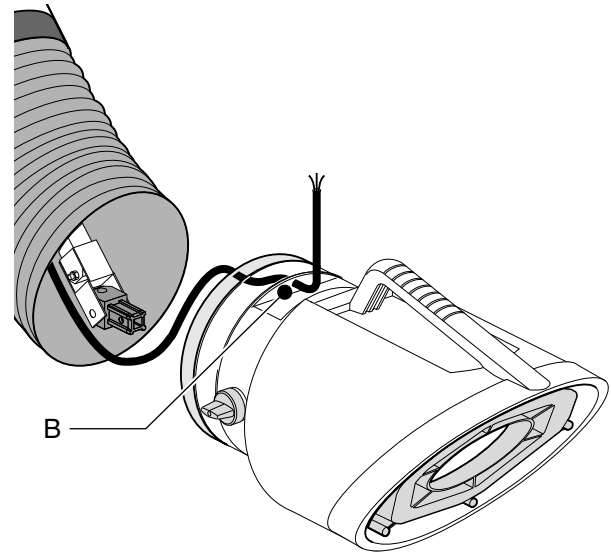


Fig. 4

Have a qualified electrician connect the 36 ft. connecting cable, lamp cable, and sensor cable (if used) to the control board as shown in Figure 5. Snap the board onto the bottom of the remote switch. Snap the switch box into the hood by squeezing the front and back.

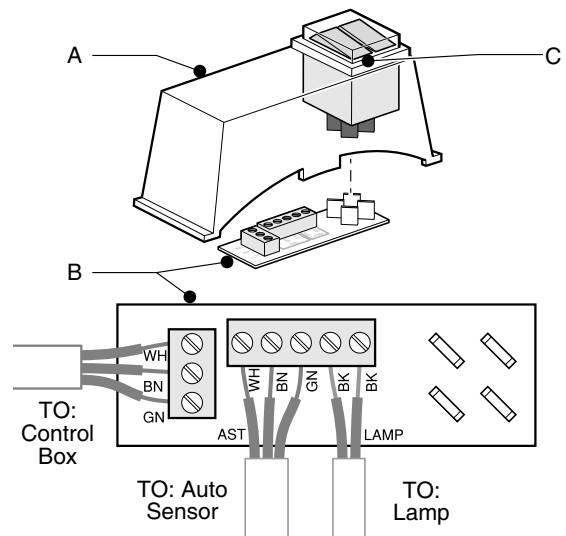


Fig. 5

## INSTALLING THE LAMP KIT

(continued)

### ROUTING THE CONNECTING CABLE

Roll back the rubber bands on each flexible hose joint in the arm, to allow access to the arm mechanism.

#### If installing with a 10 ft. or 13 ft. Arm:

Route the 36 ft. connecting cable through the four cable holders in the arm (Fig. 6D). Leave plenty of slack at each hinge (Fig. 6A) (22 in. at the middle hinge). Secure the cable in the cable holders (Figure 6-Inset), and use wire ties at the hinge as shown in Figure 7. Exit the arm through the cable hole in the rotating hinge; use a knife to cut a small X-pattern in the grommet as shown in Figure 9-Inset.

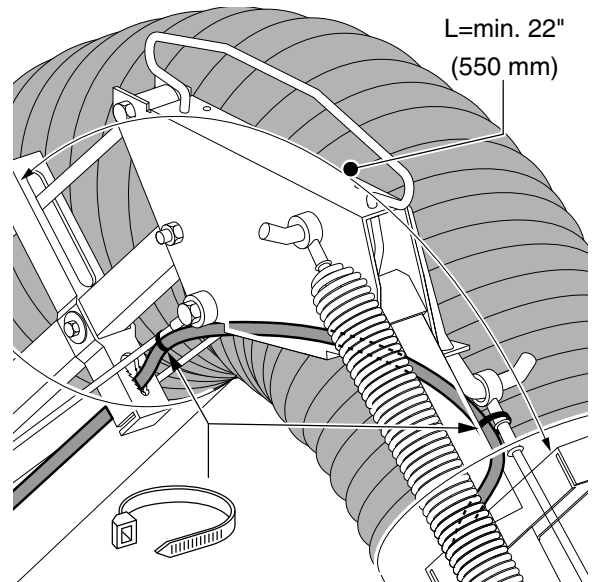
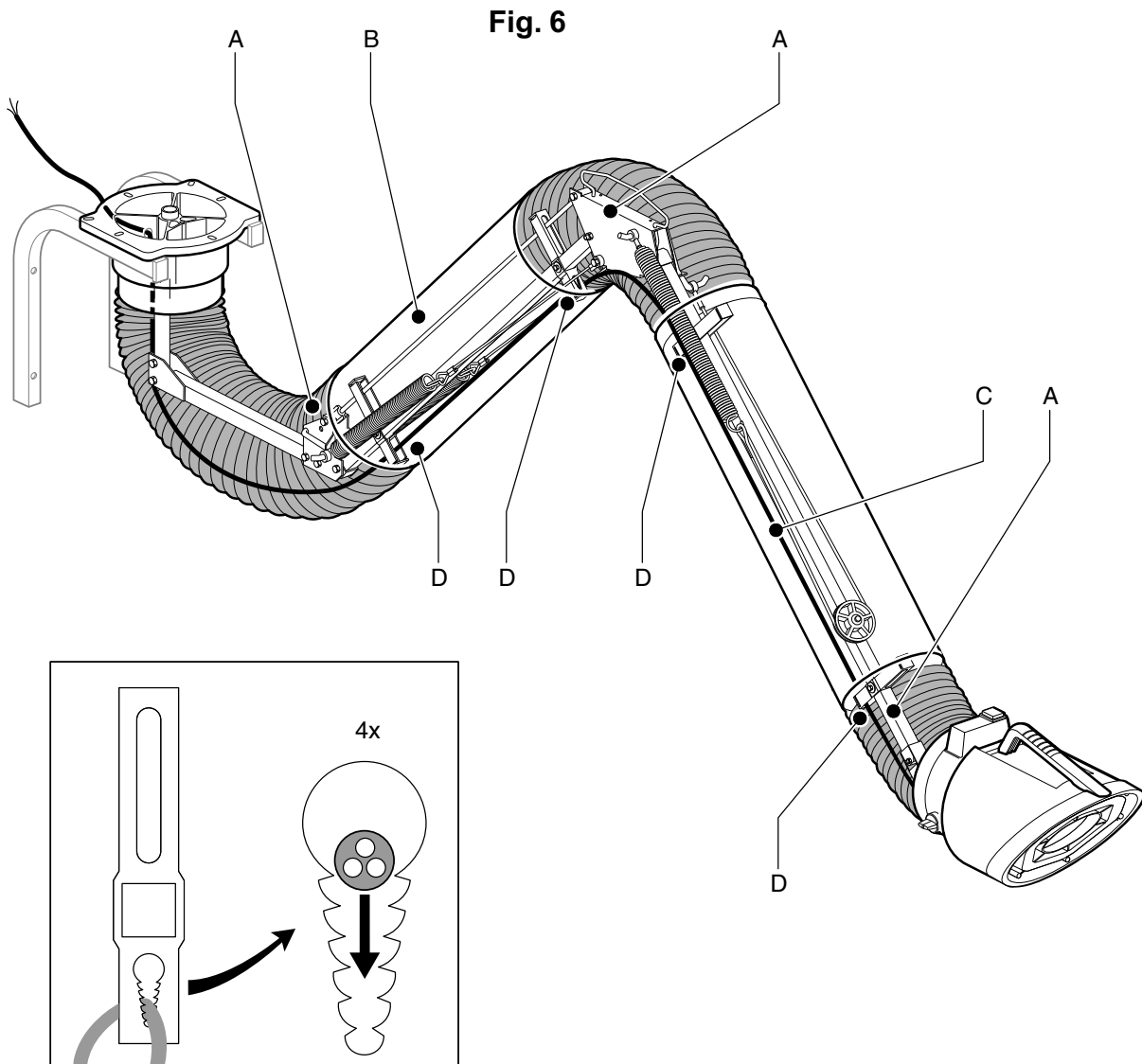


Fig. 7



LAMP KIT FOR WALL-MOUNTED SYSTEMS

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## INSTALLING THE LAMP KIT

(continued)

### ROUTING THE CONNECTING CABLE

(continued)

#### If installing with an Extension Crane:

After feeding the 36 ft. connecting cable through the arm and out the rotating hinge, run the cable back the base of the extension crane, securing it to the support pegs with wire ties as shown in Figure 8B.

#### If installing with an LTA 2.0 Telescopic Arm:

Route the 36 ft. connecting cable through the arm, securing it to the telescopic mechanism in two places with cable ties as shown in Figure 8. Exit the arm through the hole near the rotating hinge (Fig. 9A); use a knife to cut an X-pattern in the grommet as shown in Figure 9. Loosely secure the cable to the post of the mounting bracket as shown in Figure 9.

After securing the cable to the arm mechanism, reseal all hose joint connections with the rubber seals.

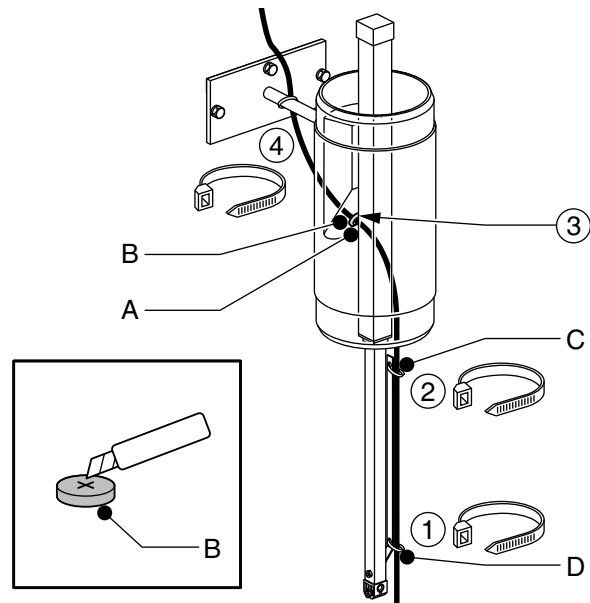


Fig. 9

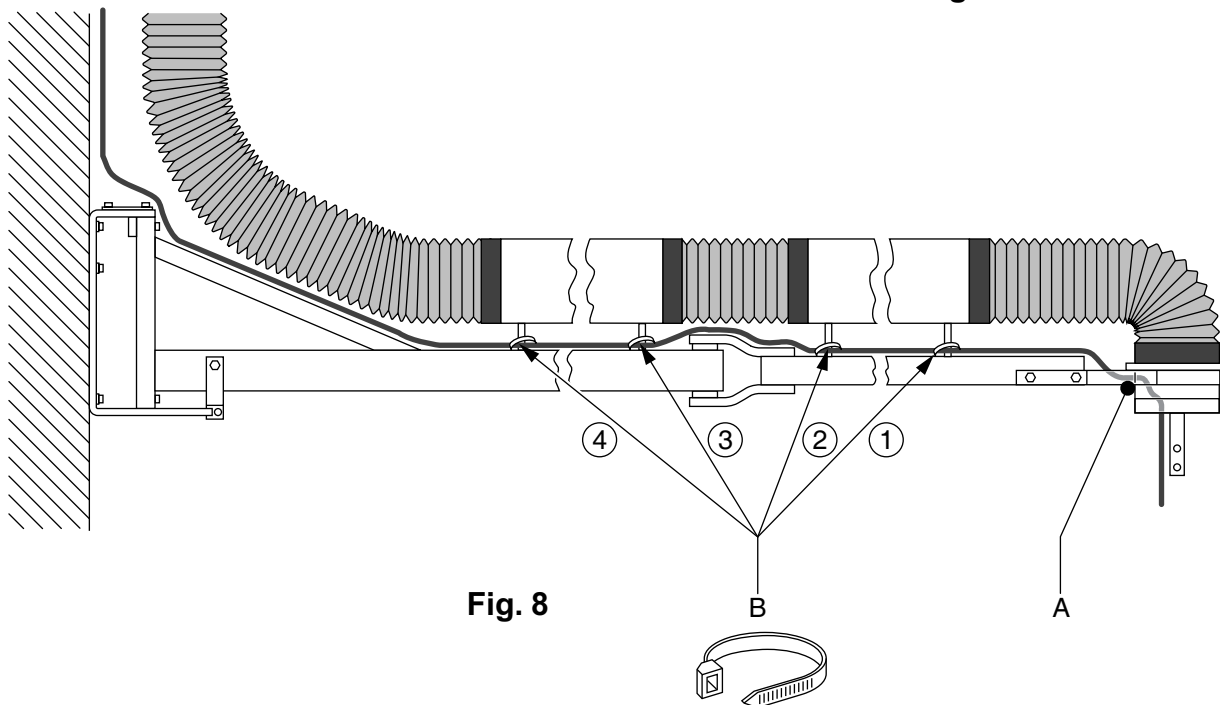


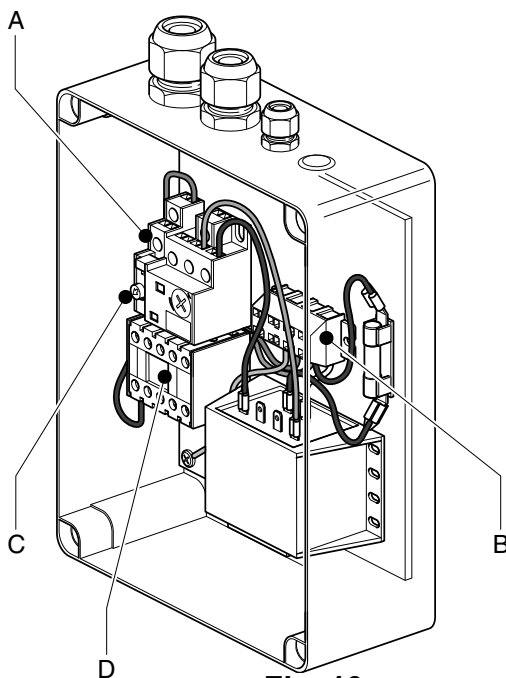
Fig. 8

## INSTALLING THE OPTIONAL LAMP KIT FOR WALL-MOUNT SYSTEMS

(continued)

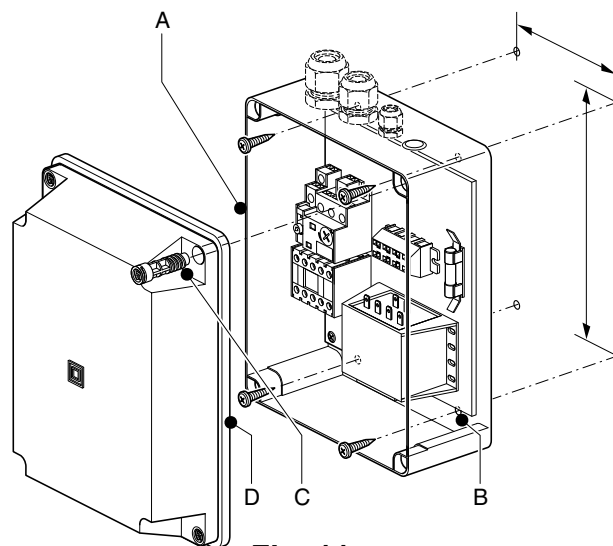
### INSTALLING THE CONTROL BOX

Mount the Thermal Relay (Fig. 10A) to the Contactor (Fig. 10D) by snapping the pin on the bottom of the Thermal Relay into the hole in the top of the Contactor. The three shorting pins at the bottom of the Thermal Relay should connect into terminals 2T1, 4T2, and 6T3 of the Contactor. Tighten the screw connections at 2T1, 4T2, and 6T3, and have a qualified electrician make the remaining connections inside the Control Box per the wiring diagram in the back of this manual. (NOTE the orientation of the control box when referencing Figures 10, 11, and the wiring diagram).



**Fig. 10**

Mount the connection box to the wall using four screws as shown in Figure 11.



**Fig. 11**

Feed a 120VAC, 1ph, 60Hz supply cable into the Control Box. Route a power cable out of the box, to the terminal box on the motor of the SF2400 fan. Route the 36 ft. connection cable into the Control Box. Connect all cables per the proper wiring diagram either shipped with the kit or in the back of this manual.

Make sure the thermal relay is always in manual operation by setting the blue button (Fig. 10C) at H. Check also that the thermal relay is set to 10.0A.

#### PLEASE NOTE:

It is not necessary to use the K1669-2 Lamp Kit in conjunction with a K1494-2 Starter/Overload Switch.

Read and understand this entire section before operating your Wall-Mounted System with Lamp Kit.

## SAFETY INSTRUCTIONS

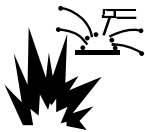
Do not attempt to use this equipment until you have thoroughly read all operating and maintenance manuals supplied with your equipment and any related welding machine it will be used with. They include important safety precautions, operating and maintenance instructions and parts lists.

### ⚠ WARNING



#### ELECTRIC SHOCK can kill.

- Do not touch electrically live parts such as output terminals or internal wiring.
- Insulate yourself from the work and ground.
- Always wear dry insulating gloves.



#### WELDING SPARKS can cause fire or explosion.

- Keep flammable material away.
- Do not weld upon containers which have held combustibles.



#### ARC RAYS can burn.

- Wear eye, ear and body protection.



#### FUMES AND GASES can be dangerous.

- Although the removal of the particulate matter from welding smoke may reduce the ventilation requirement, concentrations of the clear exhausted fumes and gases may still be hazardous to health. Avoid breathing concentrations of these fumes and gases. Use adequate ventilation when welding. See ANSI Z49.1, "Safety in Welding and Cutting", published by the American Welding Society.

Only qualified personnel should operate this equipment.

## ADDITIONAL SAFETY PRECAUTIONS

Always operate this equipment with the filter and arm installed and all covers in place as these provide maximum protection from moving parts and insure proper vacuum operation and cooling air flow.

## OPERATING INSTRUCTIONS

Refer to Figure 11:

- Switch with Lamp Symbol - Operates Lamp.
- Switch with 0/I- Operates SF2400 Fan.

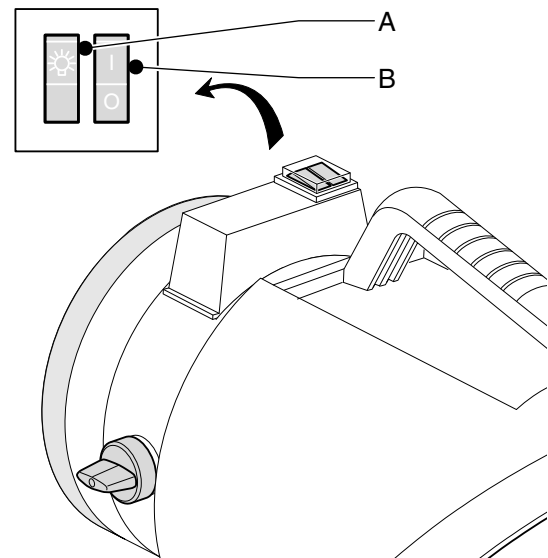


Fig. 11

For optimum fume-capture, position hood within 10-15 inches (250-400mm) of the arc.

If using the Automatic Start/Stop Arc Sensor, leave the 0/I switch in the 0 (off) position. When the sensor detects an arc, it will turn on the SF2400 Fan automatically. When the sensor stops sensing an arc, the sensor will shut down the SF2400 Fan after 20 seconds.

## ROUTINE MAINTENANCE

This product has been designed to function without problems for a long time with a minimum of maintenance.

## CLEANING/REPLACING THE SPATTER GUARD

A glass spatter guard is positioned in front of the long-life halogen bulb to prevent spatter build-up on the face of the bulb. When the spatter guard becomes dirty with spatter and fume, it is necessary to clean or replace it.

- Remove holding spring by squeezing on the loose ends and pulling it out; the glass spatter guard will drop out.
- Clean the spatter guard with glass cleaner or a mild abrasive. If the glass becomes excessively dirty or damaged, replace it.
- Wipe the lamp housing and the plastic face of the halogen bulb with a soft, damp cloth.
- Replace the glass spatter guard over the bulb and secure with the holding spring.

## REPLACING THE HALOGEN BULB

When the halogen bulb burns out, it is necessary to replace it.

### **WARNING**

- Disconnect from input power before servicing this equipment.
  - Have a qualified person install and service this equipment.
- 

- Remove holding spring by squeezing on the loose ends and pulling it out; the glass spatter guard will drop out.
- Push on one of the side tabs (that hold the bulb in) with a screwdriver until the bulb assembly pops loose.
- With one finger, push through the hole directly behind the bulb to push the bulb assembly out the front of the lamp housing.
- Detach the bulb from the cable base.
- Push new bulb onto cable base (polarity doesn't matter).
- Push bulb assembly past the side tabs.
- Set the spatter guard back over the bulb and secure with the holding spring.

Observe all Safety Guidelines detailed throughout this manual

SYMPTOM	PROBLEM	SOLUTION
Lamp does not illuminate.	36 ft. Connection cable damaged or defective.  Bulb loose or burned out.  Lamp cable damaged or defective.  Lamp switch damaged or defective.  Transformer damaged or defective.  Fuse defective or blown.  Fuse Clip connections loose.  Control board (under switch box) loose, damaged or defective.  13 ft. Connection cable damaged or defective.	Check and repair or replace if necessary.  Tighten the bulb or replace it if necessary.  Check and repair or replace if necessary.  Check and repair or replace if necessary.  Check and replace if necessary.  Check the fuse and replace if necessary.  Check and repair or replace fuse holder if necessary.  Tighten board; replace if necessary.  Check and repair or replace if necessary.
SF2400 Fan does not start when hood-mounted switch to "I".	Remote I/O switch damaged or defective.  Fuse defective or blown.  Fuse Clip connections loose.  Control board (under switch box) loose, damaged or defective.  Transformer damaged or defective.  Contactor damaged or defective.  Thermal Relay tripped (motor over-load protection).	Check and repair or replace if necessary.  Check the fuse and replace if necessary.  Check and repair or replace fuse holder if necessary.  Tighten board; replace if necessary.  Check and replace if necessary.  Check and replace if necessary.  Allow the machine to cool down for a few minutes. Reset the Thermal Relay in the Control Box. (Check that the Thermal Relay is set to 10.0 A; refer to the Installation Section for details.)

 **CAUTION**

If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your **Local Lincoln Authorized Field Service Facility** for technical troubleshooting assistance before you proceed.

**LAMP KIT FOR WALL-MOUNTED SYSTEMS**

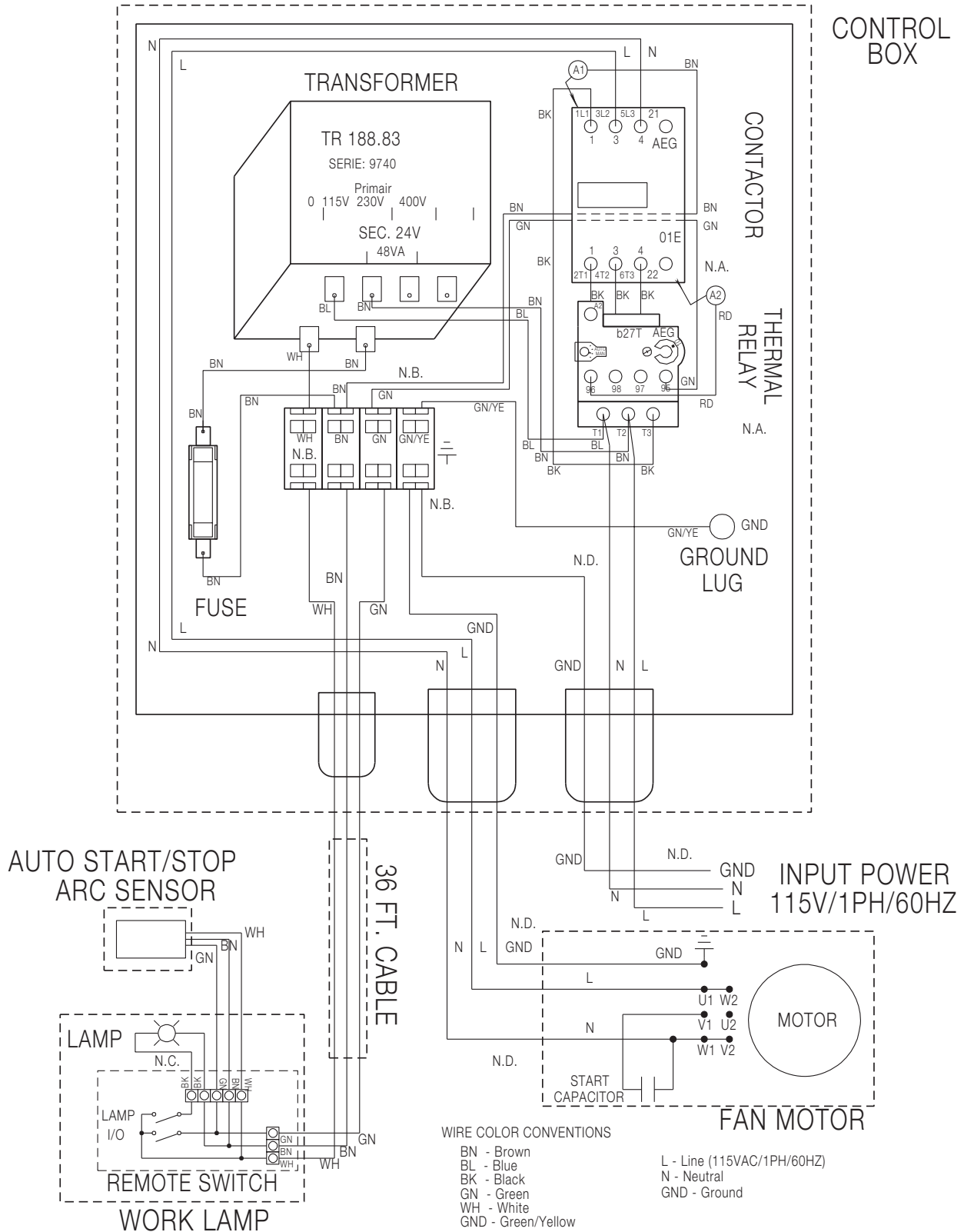




WIRING DIAGRAM FOR SF2400 FAN WITH K1669-2 LAMP KIT

NOTES:

- N.A. MOUNT THERMAL RELAY TO CONTACTOR AS DESCRIBED IN INSTALLATION SECTION.
- N.B. TO INSERT CONDUCTORS IN TERMINAL BLOCK, PUSH IN ON FRONT OPENING WITH SMALL SCREWDRIVER, AND INSERT WIRE IN CORRESPONDING TOP OPENING.
- N.C. LAMP WIRES ARE WHITE WITH BLACK SLEEVES.
- N.D. WIRES LABELED L, N, AND GND TO BE PROVIDED AND INSTALLED BY CUSTOMER.



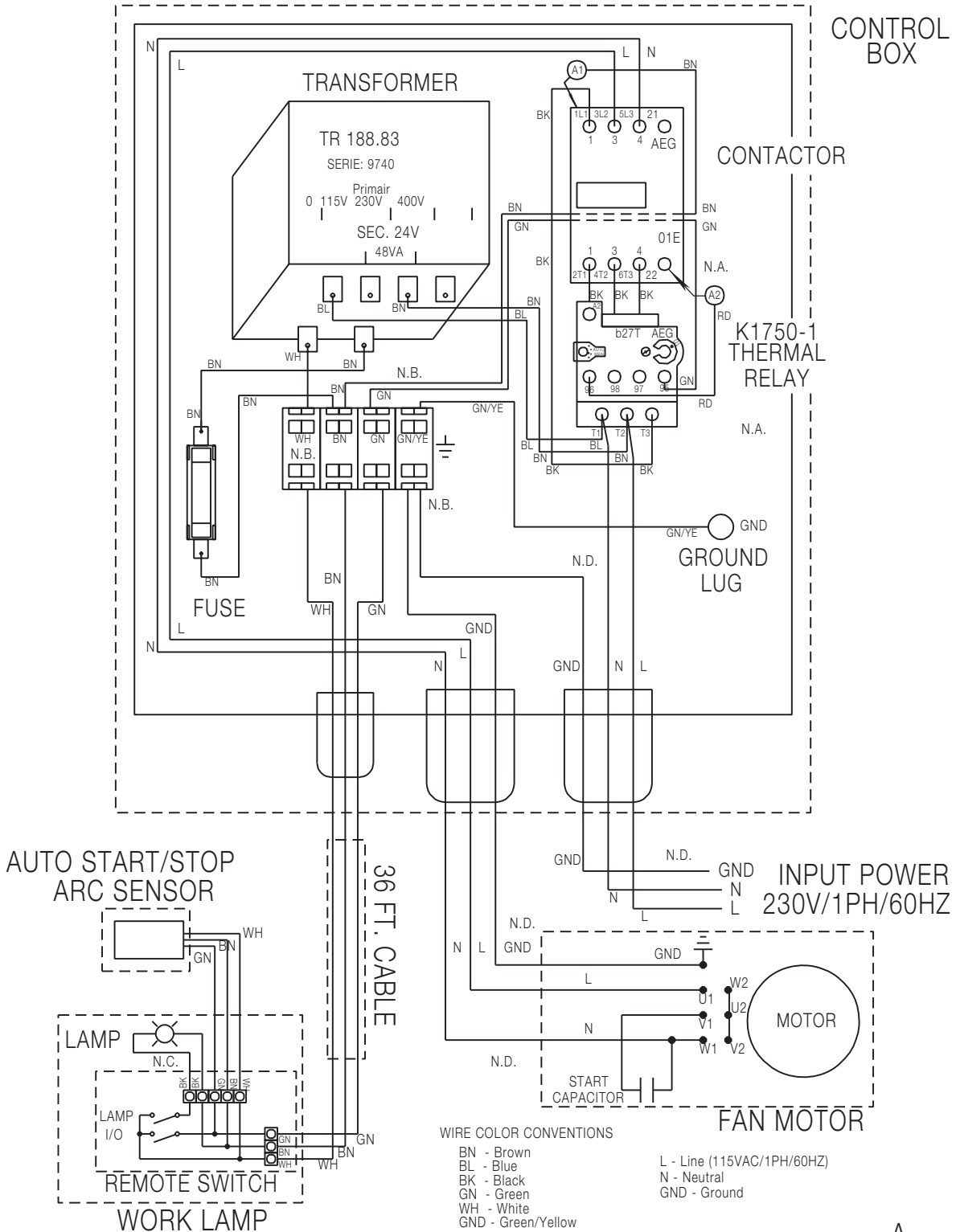
LAMP KIT FOR WALL-MOUNTED SYSTEMS



230V WIRING DIAGRAM FOR WALL MOUNTED SYSTEMS USING K1750-1 230V CONVERSION KIT

NOTES:

- N.A. MOUNT THERMAL RELAY TO CONTACTOR AS DESCRIBED IN INSTALLATION SECTION. K1750-1 FOR 230V OPERATION. SET AT 5 AMPS.
- N.B. TO INSERT CONDUCTORS IN TERMINAL BLOCK, PUSH IN ON FRONT OPENING WITH SMALL SCREWDRIVER, AND INSERT WIRE IN CORRESPONDING TOP OPENING.
- N.C. LAMP WIRES ARE WHITE WITH BLACK SLEEVES.
- N.D. WIRES LABELED L, N, AND GND TO BE PROVIDED AND INSTALLED BY CUSTOMER.



A  
S 23315-10

LAMP KIT FOR WALL-MOUNTED SYSTEMS



# PARTS LIST FOR

# Lamp Kits

**This parts list is provided as an informative guide only.**

This information was accurate at the time of printing. However, since these pages are regularly updated in Lincoln Electric's official Parts Book (BK-34), always check with your Lincoln parts supplier for the latest parts information.

LAMP KITS



# NOTES

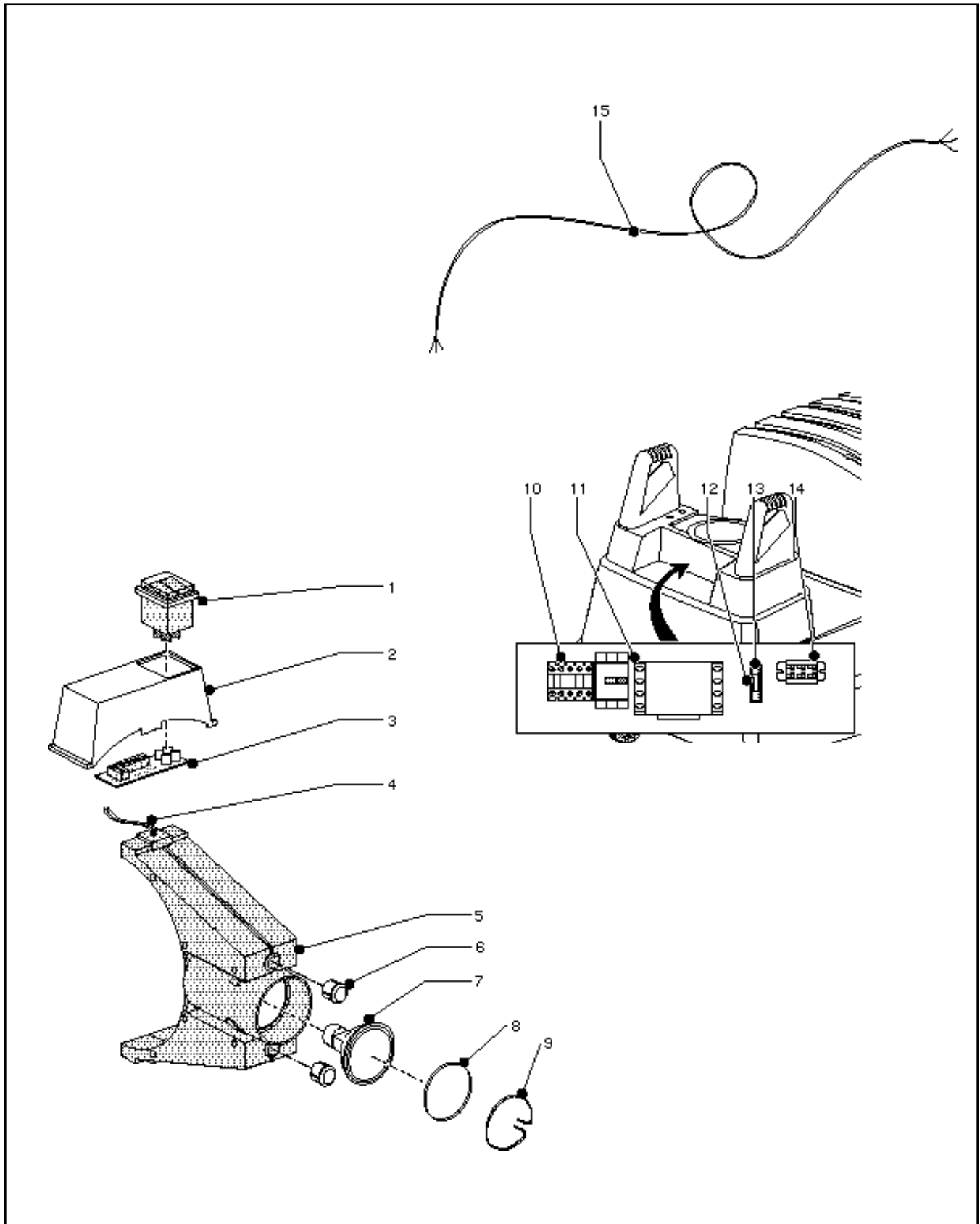
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LAMP KITS





# Lamp Kit for Mobiflex 200-M Subassembly



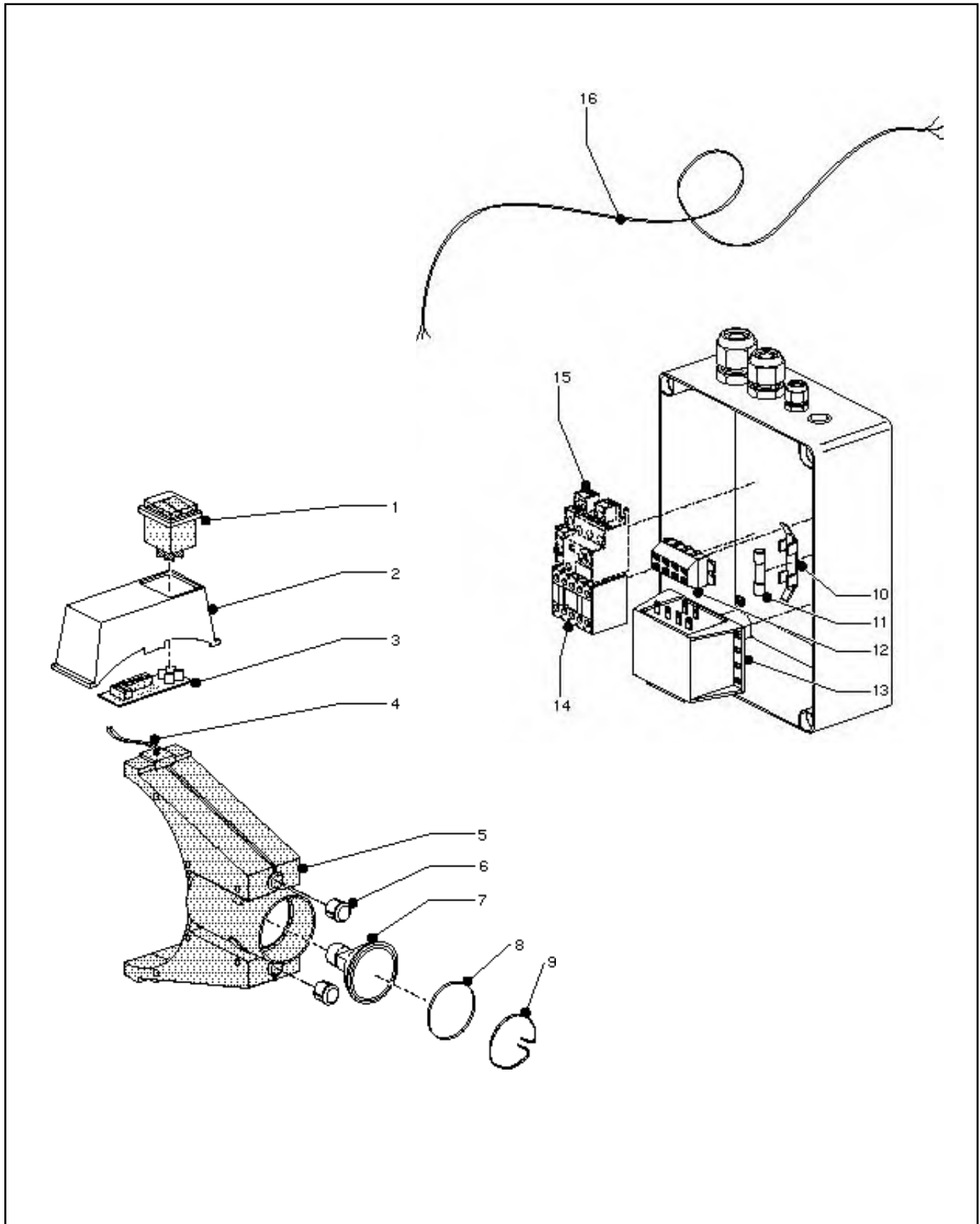
# Indicates a change this printing.

Use only the parts marked "x" in the column under the heading number called for in the model index page.

**Recommended Spare Parts are Highlighted in Bold**

ITEM	DESCRIPTION	PART NO.	QTY.	1	2	3	4	5	6	7	8	9
1	<b>Remote Switch</b>	<b>S23283-1</b>	1	X								
2	<b>Switch Enclosure</b>	<b>S23283-2</b>	1	X								
3	<b>Control Board, Work Lamp</b>	<b>S23283-3</b>	1	X								
4	<b>Control Leads, Work Lamp</b>	<b>S23283-4</b>	1	X								
5	<b>Housing, Work Lamp</b>	<b>S23283-5</b>	1	X								
6	<b>Plastic Lens Cap</b>	<b>S23283-8</b>	2	X								
7	<b>Halogen Lamp</b>	<b>S23283-6</b>	1	X								
8	<b>Glass Spatter Guard</b>	<b>S23283-10</b>	1	X								
9	<b>Holding Spring</b>	<b>S23283-9</b>	1	X								
10	<b>Contactora, 24V/60Hz, 10VA</b>	<b>S23284-5</b>	1	X								
11	<b>Transformer, 115/24V, 48VA</b>	<b>S23284-4</b>	1	X								
12	<b>Fuse, 2.5A/250V, Slow-blow</b>	<b>S23284-2</b>	1	X								
13	<b>Fuse Holder, 20A</b>	<b>S23284-1</b>	1	X								
14	<b>Connection Block</b>	<b>S23284-3</b>	1	X								
15	<b>Lamp Kit Cable, 13 ft. (4m)</b>	<b>S23270-1</b>	1	X								

# Control Box Subassembly





# Indicates a change this printing.

Use only the parts marked "x" in the column under the heading number called for in the model index page.

**Recommended Spare Parts are Highlighted in Bold**

ITEM	DESCRIPTION	PART NO.	QTY.	1	2	3	4	5	6	7	8	9
1	<b>Remote Switch</b>	<b>S23283-1</b>	1	X								
2	<b>Switch Enclosure</b>	<b>S23283-2</b>	1	X								
3	<b>Control Board, Work Lamp</b>	<b>S23283-3</b>	1	X								
4	<b>Control Leads, Work Lamp</b>	<b>S23283-4</b>	1	X								
5	<b>Housing, Work Lamp</b>	<b>S23283-5</b>	1	X								
6	<b>Plastic Lens Cap</b>	<b>S23283-8</b>	2	X								
7	<b>Halogen Lamp</b>	<b>S23283-6</b>	1	X								
8	<b>Glass Spatter Guard</b>	<b>S23283-10</b>	1	X								
9	<b>Holding Spring</b>	<b>S23283-9</b>	1	X								
10	<b>Fuse Holder, 20A</b>	<b>S23284-1</b>	1	X								
11	<b>Fuse, 2.5A/250V, Slow-blow</b>	<b>S23284-2</b>	1	X								
12	<b>Connection Block</b>	<b>S23284-6</b>	1	X								
13	<b>Transformer, 115/24V, 48VA</b>	<b>S23284-4</b>	1	X								
14	<b>Contactor, 24V/60Hz, 10VA</b>	<b>S23151-1</b>	1	X								
15	<b>Thermal Relay, 8-12.5A</b>	<b>S23272</b>	1	X								
16	<b>Lamp Kit Cable, 36 ft. (11m)</b>	<b>S23270-2</b>	1	X								

# NOTES

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LAMP KIT FOR WALL-MOUNTED SYSTEMS



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<b>WARNING</b>	<ul style="list-style-type: none"> <li>● Do not touch electrically live parts or electrode with skin or wet clothing.</li> <li>● Insulate yourself from work and ground.</li> </ul>	<ul style="list-style-type: none"> <li>● Keep flammable materials away.</li> </ul>	<ul style="list-style-type: none"> <li>● Wear eye, ear and body protection.</li> </ul>
Spanish <b>AVISO DE PRECAUCION</b>	<ul style="list-style-type: none"> <li>● No toque las partes o los electrodos bajo carga con la piel o ropa mojada.</li> <li>● Aíslese del trabajo y de la tierra.</li> </ul>	<ul style="list-style-type: none"> <li>● Mantenga el material combustible fuera del área de trabajo.</li> </ul>	<ul style="list-style-type: none"> <li>● Protéjase los ojos, los oídos y el cuerpo.</li> </ul>
French <b>ATTENTION</b>	<ul style="list-style-type: none"> <li>● Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension.</li> <li>● Isolez-vous du travail et de la terre.</li> </ul>	<ul style="list-style-type: none"> <li>● Gardez à l'écart de tout matériel inflammable.</li> </ul>	<ul style="list-style-type: none"> <li>● Protégez vos yeux, vos oreilles et votre corps.</li> </ul>
German <b>WARNUNG</b>	<ul style="list-style-type: none"> <li>● Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung!</li> <li>● Isolieren Sie sich von den Elektroden und dem Erdboden!</li> </ul>	<ul style="list-style-type: none"> <li>● Entfernen Sie brennbares Material!</li> </ul>	<ul style="list-style-type: none"> <li>● Tragen Sie Augen-, Ohren- und Körperschutz!</li> </ul>
Portuguese <b>ATENÇÃO</b>	<ul style="list-style-type: none"> <li>● Não toque partes elétricas e electrodos com a pele ou roupa molhada.</li> <li>● Isole-se da peça e terra.</li> </ul>	<ul style="list-style-type: none"> <li>● Mantenha inflamáveis bem guardados.</li> </ul>	<ul style="list-style-type: none"> <li>● Use proteção para a vista, ouvido e corpo.</li> </ul>
Japanese <b>注意事項</b>	<ul style="list-style-type: none"> <li>● 通電中の電気部品、又は溶材にヒフやぬれた布で触れないこと。</li> <li>● 施工物やアースから身体が絶縁されている様にして下さい。</li> </ul>	<ul style="list-style-type: none"> <li>● 燃えやすいものの側での溶接作業は絶対にしてはなりません。</li> </ul>	<ul style="list-style-type: none"> <li>● 目、耳及び身体に保護具をして下さい。</li> </ul>
Chinese <b>警告</b>	<ul style="list-style-type: none"> <li>● 皮膚或濕衣物切勿接觸帶電部件及鎢條。</li> <li>● 使你自已與地面和工件絕緣。</li> </ul>	<ul style="list-style-type: none"> <li>● 把一切易燃物品移離工作場所。</li> </ul>	<ul style="list-style-type: none"> <li>● 佩戴眼、耳及身體勞動保護用具。</li> </ul>
Korean <b>위험</b>	<ul style="list-style-type: none"> <li>● 전도체나 용접봉을 젖은 형갑 또는 피부로 절대 접촉치 마십시오.</li> <li>● 모재와 접지를 접촉치 마십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 인화성 물질을 접근시키지 마십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 눈, 귀와 몸에 보호장구를 착용하십시오.</li> </ul>
Arabic <b>تحذير</b>	<ul style="list-style-type: none"> <li>● لا تلمس الاجزاء التي يسري فيها التيار الكهربائي أو الألكترود بجسدك أو بالملابس المبللة بالماء.</li> <li>● ضع عازلا على جسمك خلال العمل.</li> </ul>	<ul style="list-style-type: none"> <li>● ضع المواد القابلة للاشتعال في مكان بعيد.</li> </ul>	<ul style="list-style-type: none"> <li>● ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.</li> </ul>

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTION FOR THIS EQUIPMENT AND THE CONSUMABLES TO BE USED AND FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

SE RECOMIENDA LEER Y ENTENDER LAS INSTRUCCIONES DEL FABRICANTE PARA EL USO DE ESTE EQUIPO Y LOS CONSUMIBLES QUE VA A UTILIZAR, SIGA LAS MEDIDAS DE SEGURIDAD DE SU SUPERVISOR.

LISEZ ET COMPRENEZ LES INSTRUCTIONS DU FABRICANT EN CE QUI REGARDE CET EQUIPMENT ET LES PRODUITS A ETRE EMPLOYES ET SUIVEZ LES PROCEDURES DE SECURITE DE VOTRE EMPLOYEUR.

LESEN SIE UND BEFOLGEN SIE DIE BETRIEBSANLEITUNG DER ANLAGE UND DEN ELEKTRODENEINSATZ DES HERSTELLERS. DIE UNFALLVERHÜTUNGSVORSCHRIFTEN DES ARBEITGEBERS SIND EBENFALLS ZU BEACHTEN.

			
<ul style="list-style-type: none"> <li>● Keep your head out of fumes.</li> <li>● Use ventilation or exhaust to remove fumes from breathing zone.</li> </ul>	<ul style="list-style-type: none"> <li>● Turn power off before servicing.</li> </ul>	<ul style="list-style-type: none"> <li>● Do not operate with panel open or guards off.</li> </ul>	<b>WARNING</b>
<ul style="list-style-type: none"> <li>● Los humos fuera de la zona de respiración.</li> <li>● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases.</li> </ul>	<ul style="list-style-type: none"> <li>● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio.</li> </ul>	<ul style="list-style-type: none"> <li>● No operar con panel abierto o guardas quitadas.</li> </ul>	Spanish <b>AVISO DE PRECAUCION</b>
<ul style="list-style-type: none"> <li>● Gardez la tête à l'écart des fumées.</li> <li>● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail.</li> </ul>	<ul style="list-style-type: none"> <li>● Débranchez le courant avant l'entretien.</li> </ul>	<ul style="list-style-type: none"> <li>● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés.</li> </ul>	French <b>ATTENTION</b>
<ul style="list-style-type: none"> <li>● Vermeiden Sie das Einatmen von Schweißrauch!</li> <li>● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes!</li> </ul>	<ul style="list-style-type: none"> <li>● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!)</li> </ul>	<ul style="list-style-type: none"> <li>● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen!</li> </ul>	German <b>WARNUNG</b>
<ul style="list-style-type: none"> <li>● Mantenha seu rosto da fumaça.</li> <li>● Use ventilação e exaustão para remover fumo da zona respiratória.</li> </ul>	<ul style="list-style-type: none"> <li>● Não opere com as tampas removidas.</li> <li>● Desligue a corrente antes de fazer serviço.</li> <li>● Não toque as partes elétricas nuas.</li> </ul>	<ul style="list-style-type: none"> <li>● Mantenha-se afastado das partes moventes.</li> <li>● Não opere com os painéis abertos ou guardas removidas.</li> </ul>	Portuguese <b>ATENÇÃO</b>
<ul style="list-style-type: none"> <li>● ヒュームから頭を離すようにして下さい。</li> <li>● 換気や排煙に十分留意して下さい。</li> </ul>	<ul style="list-style-type: none"> <li>● メンテナンス・サービスに取りかかる際には、まず電源スイッチを必ず切ってください。</li> </ul>	<ul style="list-style-type: none"> <li>● パネルやカバーを取り外したまま機械操作をしないで下さい。</li> </ul>	Japanese <b>注意事項</b>
<ul style="list-style-type: none"> <li>● 頭部遠離煙霧。</li> <li>● 在呼吸區使用通風或排風器除煙。</li> </ul>	<ul style="list-style-type: none"> <li>● 維修前切斷電源。</li> </ul>	<ul style="list-style-type: none"> <li>● 儀表板打開或沒有安全罩時不準作業。</li> </ul>	Chinese <b>警告</b>
<ul style="list-style-type: none"> <li>● 얼굴로부터 용접가스를 멀리하십시오.</li> <li>● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 보수전에 전원을 차단하십시오.</li> </ul>	<ul style="list-style-type: none"> <li>● 판넬이 열린 상태로 작동치 마십시오.</li> </ul>	Korean <b>위험</b>
<ul style="list-style-type: none"> <li>● ابعد رأسك بعيداً عن الدخان.</li> <li>● استعمل التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها.</li> </ul>	<ul style="list-style-type: none"> <li>● أقطع التيار الكهربائي قبل القيام بأية صيانة.</li> </ul>	<ul style="list-style-type: none"> <li>● لا تشغيل هذا الجهاز اذا كانت الاغطية الحديدية الواقية ليست عليه.</li> </ul>	Arabic <b>تحذير</b>

LEIA E COMPREENDA AS INSTRUÇÕES DO FABRICANTE PARA ESTE EQUIPAMENTO E AS PARTES DE USO, E SIGA AS PRÁTICAS DE SEGURANÇA DO EMPREGADOR.

使う機械や溶材のメーカーの指示書をよく読み、まず理解して下さい。そして貴社の安全規定に従って下さい。

請詳細閱讀並理解製造廠提供的說明以及應該使用的銀焊材料，並請遵守貴方的有閣勞動保護規定。

이 제품에 동봉된 작업지침서를 숙지하시고 귀사의 작업자 안전수칙을 준수하시기 바랍니다.

اقرأ بتمعن وافهم تعليمات المصنع المنتج لهذه المعدات والمواد قبل استعمالها واتبع تعليمات الوقاية لصاحب العمل.