

Operator's Manual

X-TRACTOR[®] 2 FUME GUN



For use with machines having Code Numbers:

13246, 13247, 13248



Register your machine:

www.lincolnelectric.com/register

Authorized Service and Distributor Locator:

www.lincolnelectric.com/locator

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

Need Help? Call 1.888.935.3877

to talk to a Service Representative

Hours of Operation:

8:00 AM to 6:00 PM (ET) Mon. thru Fri.

After hours?

Use "Ask the Experts" at lincolnelectric.com
A Lincoln Service Representative will contact you
no later than the following business day.

For Service outside the USA:

Email: globalservice@lincolnelectric.com

THANK YOU FOR SELECTING A QUALITY PRODUCT BY LINCOLN ELECTRIC.

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.

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.

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.



KEEP YOUR HEAD OUT OF THE FUMES.

DON'T get too close to the arc. Use corrective lenses if necessary to stay a reasonable distance away from the arc.

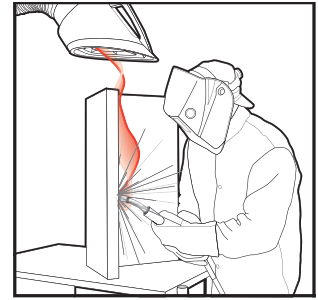
READ and obey the Safety Data Sheet (SDS) and the warning label that appears on all containers of welding materials.

USE ENOUGH VENTILATION or exhaust at the arc, 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 (See below).

USE NATURAL DRAFTS or fans to keep the fumes away from your face.

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



WEAR CORRECT EYE, EAR & BODY PROTECTION

PROTECT your eyes and face with welding helmet 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 splatter, flash, and glare with protective screens or barriers.

IN SOME AREAS, protection from noise may be appropriate.

BE SURE protective equipment is in good condition.

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



SPECIAL SITUATIONS

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.

Additional precautionary measures

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.



SECTION A: WARNINGS



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.

For more information go to www.P65warnings.ca.gov/diesel

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.*)



WARNING: Cancer and Reproductive Harm
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.

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



- 1.b. 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.c. 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.d. 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.e. 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.f. 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.g. To avoid scalding, do not remove the radiator pressure cap when the engine is hot.
- 1.h. Using a generator indoors CAN KILL YOU IN MINUTES.
- 1.i. Generator exhaust contains carbon monoxide. This is a poison you cannot see or smell.
- 1.j. NEVER use inside a home or garage, EVEN IF doors and windows are open.
- 1.k. Only use OUTSIDE and far away from windows, doors and vents.
- 1.l. Avoid other generator hazards. READ MANUAL BEFORE USE.



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.



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 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.**
5. b. 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.
- 5.c. 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.d. 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.e. 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.
- 5.f. Also see item 1.j.



WELDING AND CUTTING 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.b.
- 6.i. 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.
- 6.j. Do not use a welding power source for pipe thawing.



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, 14501 George Carter Way Chantilly, VA 20151.



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.

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

As a rule of thumb, for many mild steel electrode, if the air is visibly clear and you are comfortable, then the ventilation is generally adequate for your work. The most accurate way to determine if the worker exposure does not exceed the applicable exposure limit for compounds in the fumes and gases is to have an industrial hygienist take and analyze a sample of the air you are breathing. This is particularly important if you are welding with stainless, hardfacing or Special Ventilation products. All Lincoln MSDS have a maximum fume guideline number. If exposure to total fume is kept below that number, exposure to all fume from the electrode (not coatings or plating on the work) will be below the TLV.

There are steps that you can take to identify hazardous substances in your welding environment. Read the product label and material safety data sheet for the electrode posted in the work place or in the electrode or flux container to see what fumes can be reasonably expected from use of the product and to determine if special ventilation is needed. Secondly, know what the base metal is and determine if there is any paint, plating, or coating that could expose you to toxic fumes and/or gases. Remove it from the metal being welded, if possible. If you start to feel uncomfortable, dizzy or nauseous, there is a possibility that you are being overexposed to fumes and gases, or suffering from oxygen deficiency. Stop welding and get some fresh air immediately. Notify your supervisor and co-workers so the situation can be corrected and other workers can avoid the hazard. Be sure you are following these safe practices, the consumable labeling and MSDS to improve the ventilation in your area. Do not continue welding until the situation has been corrected.

NOTE: The MSDS for all Lincoln consumables is available on Lincoln's website: www.lincolnelectric.com

Before we turn to the methods available to control welding fume exposure, you should understand a few basic terms:

Natural Ventilation is the movement of air through the workplace caused by natural forces. Outside, this is usually the wind. Inside, this may be the flow of air through open windows and doors.

Mechanical Ventilation is the movement of air through the workplace caused by an electrical device such as a portable fan or permanently mounted fan in the ceiling or wall.

Source Extraction (Local Exhaust) is a mechanical device used to capture welding fume at or near the arc and filter contaminants out of the air.

The ventilation or exhaust needed for your application depends upon many factors such as:

- Workspace volume
- Workspace configuration
- Number of welders
- Welding process and current
- Consumables used (mild steel, hardfacing, stainless, etc.)
- Allowable levels (TLV, PEL, etc.)
- Material welded (including paint or plating)
- Natural airflow

Your work area has adequate ventilation when there is enough ventilation and/or exhaust to control worker exposure to hazardous materials in the welding fumes and gases so the applicable limits for those materials is not exceeded. See chart of TLV and PEL for Typical Electrode Ingredients, the OSHA PEL

(Permissible Exposure Limit), and the recommended guideline, the ACGIH TLV (Threshold Limit Value), for many compounds found in welding fume.

Ventilation

There are many methods which can be selected by the user to provide adequate ventilation for the specific application. The following section provides general information which may be helpful in evaluating what type of ventilation equipment may be suitable for your application. When ventilation equipment is installed, you should confirm worker exposure is controlled within applicable OSHA PEL and/or ACGIH TLV. According to OSHA regulations, when welding and cutting (mild steels), natural ventilation is usually considered sufficient to meet requirements, provided that:

1. The room or welding area contains at least 10,000 cubic feet (about 22' x 22' x 22') for each welder.
2. The ceiling height is not less than 16 feet.
3. Cross ventilation is not blocked by partitions, equipment, or other structural barriers.
4. Welding is not done in a confined space.

Spaces that do not meet these requirements should be equipped with mechanical ventilating equipment that exhausts at least 2000 CFM of air for each welder, except where local exhaust hoods or booths, or air-line respirators are used.

Important Safety Note:

When welding with electrodes which require special ventilation such as stainless or hardfacing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce hazardous fumes, keep exposure as low as possible and below exposure limit values (PEL and TLV) for materials in the fume using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, for example outdoors, a respirator may be required if exposure cannot be controlled to the PEL or TLV. (See MSDS and chart of TLV and PEL for Typical Electrode Ingredients.) Additional precautions are also required when welding on galvanized steel.

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.

BIBLIOGRAPHY AND SUGGESTED READING

ANSI Z87.1, Practice for Occupational and Educational Eye and Face Protection, American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

Arc Welding and Your Health: A Handbook of Health Information for Welding. Published by The American Industrial Hygiene Association, 2700 Prosperity Avenue, Suite 250, Fairfax, VA 22031-4319.

NFPA Standard 51B, Cutting and Welding Processes, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9146, Quincy, MA 02269-9959.

OSHA General Industry Standard 29 CFR 1910 Subpart Q. OSHA Hazard Communication Standard 29 CFR 1910.1200. Available from the Occupational Safety and Health Administration at <http://www.osha.org> or contact your local OSHA office.

The following publications are published by The American Welding Society, P.O. Box 351040, Miami, Florida 33135. AWS publications may be purchased from the American Welding society at <http://www.aws.org> or by contacting the AWS at 800-443-9353.

ANSI, Standard Z49.1, Safety in Welding, Cutting and Allied Processes. Z49.1 is now available for download at no charge at <http://www.lincolnelectric.com/community/safety/> or at the AWS website <http://www.aws.org>.

AWS F1.1, Method for Sampling Airborne Particulates Generated by Welding and Allied Processes.

AWS F1.2, Laboratory Method for Measuring Fume Generation Rates and Total Fume Emission of Welding and Allied Processes.

AWS F1.3, Evaluating Contaminants in the Welding Environment: A Strategic Sampling Guide.

AWS F1.5, Methods for Sampling and Analyzing Gases from Welding and Allied Processes.

AWS F3.2, Ventilation Guide for Welding Fume Control

AWS F4.1, Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances.

AWS SHF, Safety and Health Facts Sheets. Available free of charge from the AWS website at <http://www.aws.org>.

LISTED BELOW ARE SOME TYPICAL INGREDIENTS IN WELDING ELECTRODES AND THEIR TLV (ACGIH) GUIDELINES AND PEL (OSHA) EXPOSURE LIMITS

INGREDIENTS	CAS No.	TLV mg/m ³	PEL mg/m ³
Aluminum and/or aluminum alloys (as Al)*****	7429-90-5	1.0	15
Aluminum oxide and/or Bauxite*****	1344-28-1	1.0	5**
Barium compounds (as Ba)*****	513-77-9	0.5	0.5
Chromium and chromium alloys or compounds (as Cr)*****	7440-47-3	0.5(b)	0.5(b)
Hexavalent Chromium (Cr VI)	18540-29-9	0.05(b)	.005(b)
Copper Fume	7440-50-8	0.2	0.1
Cobalt Compounds	7440-48-4	0.02	0.1
Fluorides (as F)	7789-75-5	2.5	2.5
Iron	7439-89-6	10*	10*
Limestone and/or calcium carbonate	1317-65-3	10*	15
Lithium compounds (as Li)	554-13-2	15	10*
Magnesite	1309-48-4	10	15
Magnesium and/or magnesium alloys and compounds (as Mg)	7439-95-4	10*	10*
Manganese and/or manganese alloys and compounds (as Mn)*****	7439-96-5	0.02	5.0(c)
Mineral silicates	1332-58-7	5**	5**
Molybdenum alloys (as Mo)	7439-98-7	10	10
Nickel*****	7440-02-0	0.1	1
Silicates and other binders	1344-09-8	10*	10*
Silicon and/or silicon alloys and compounds (as Si)	7440-21-3	10*	10*
Strontium compounds (as Sr)	1633-05-2	10*	10*
Zirconium alloys and compounds (as Zr)	12004-83-0	5	5

Supplemental Information:

(*) Not listed. Nuisance value maximum is 10 milligrams per cubic meter. PEL value for iron oxide is 10 milligrams per cubic meter. TLV value for iron oxide is 5 milligrams per cubic meter.

(**) As respirable dust.

(****) Subject to the reporting requirements of Sections 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(b) The PEL for chromium (VI) is .005 milligrams per cubic meter as an 8 hour time weighted average. The TLV for water-soluble chromium (VI) is 0.05 milligrams per cubic meter. The TLV for insoluble chromium (VI) is 0.01 milligrams per cubic meter.

(c) Values are for manganese fume. STEL (Short Term Exposure Limit) is 3.0 milligrams per cubic meter. OSHA PEL is a ceiling value.

(****) The TLV for soluble barium compounds is 0.5 mg/m³.

TLV and PEL values are as of October 2013. Always check Safety Data Sheet (SDS) with product or on the Lincoln Electric website at <http://www.lincolnelectric.com>

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PARTS LISTPARTS.LINCOLNELECTRIC.COM
CONTENT/DETAILS MAY BE CHANGED OR UPDATED WITHOUT NOTICE. FOR MOST CURRENT INSTRUCTION MANUALS, GO TO PARTS.LINCOLNELECTRIC.COM.

TECHNICAL SPECIFICATIONS

K5271-1 X-Tractor®, 2 Fume guns 460/3/60
 K5271-2 X-Tractor®, 2 Fume guns 230/3/60
 K5271-3 X-Tractor®, 2 Fume guns 575/3/60

GENERAL	
INPUT VOLTAGE	208-230V, 3Ph, 60Hz 460V, 3Ph, 60 Hz 575V, 3Ph, 60Hz
RATED CURRENT DRAW	208-230V 10.5 - 10.3A 460V – 5.2A 575V – 3.8A
POWER RATING	4 HP (3 KW)
OPERATING SOUND LEVEL	73 DB(A)
Power cord	20 FT (6.1M)
DUTY CYCLE	100%
FILTER TYPE	
160 SQFT (14.9 SQM) MERV 16 (HE) NANO	
AMBIENT CONDITIONS	
MINIMUM TEMPERATURE	40°F (5°C)
MAXIMUM TEMPERATURE	104°F (40°C)
MAXIMUM RELATIVE HUMIDITY	80%
OPERATING CAPACITY	
EXTRACTOR TYPE	HIGH VACUUM, LOW VOLUME
AIRFLOW RATE	0 - 150 CFM (255 M ³ /HR)
PHYSICAL DIMENSIONS	
HEIGHT	44.8" (1,137 MM)
WIDTH	26" (662 MM)
DEPTH	32.3" (820 MM)
INLET DIAMETER	2" (51 MM) OD
WEIGHT	335 LBS. (152 KG)

FILTER CLEANING	
TYPE OF CLEANING	Pulse jet
COMPRESSED AIR PRESSURE	70 - 120 psi (5 - 8 bar) NOTE: Compressed air must be clean and dry, and have a dew point of -40°F (-40°C).
Air consumption during filter cleaning cycle	1 CFM (25.8 L/MIN)
Compressed air connection	1/4 inch male pneumatic quick disconnect (ISO 6150 B profile - 1/4")
FILTER CLASS (ACCORDING TO ASHRAE 52.2)	
KP5178-1	MERV 11
KP5178-2	MERV 16 NANO
KP5178-3	MERV 16 PTFE
KP5178-4	MERV 11 OIL RESISTANT
KP5178-5	MERV 16 OIL RESISTANT

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

INSTALLATION

GENERAL DESCRIPTION

The X-TRACTOR® 2 Fume Gun is a portable, self-contained, high vacuum system for the removal and filtration of welding fume particles and other point source particulate. It is designed to supply suction for two fume guns and is suitable for heavy duty welding applications and continuous use.

Welding fume enters the X-Tractor® 2 Fume Guns through a connection on the front of the machine. It then passes through the spark arrester, the filter, the blower, and exists through the rear panel louvers. The blower is powered by a three phase 4HP electric motor, controlled by a variable frequency drive. The vacuum level depends upon the amount of airflow through the blower. Therefore, extraction performance will vary depending on the number and type of extraction devices in use. The X-Tractor® 2 Fume Guns features an integrated automatic filter cleaning system. The controls signal a pulse of compressed air that shakes the particulate from the outside surface of the filter so that it falls into the dustbin. This air jet is released from an on-board tank of compressed air that is pressurized from an external source through a fitting on the back of the machine.

UNIT INCLUDES

- MERV 16 (HE), NANO FILTER
- Automatic Filter Cleaning System
- (2) torch/hose holder brackets
- Removable dust bin

USE WITH WELD GUNS AND HOSES

The X-TRACTOR® 2 Fume Gun is not supplied with weld fume guns or hoses. Weld fume guns and hoses can be ordered separately. The recommended weld fume guns and hoses are:

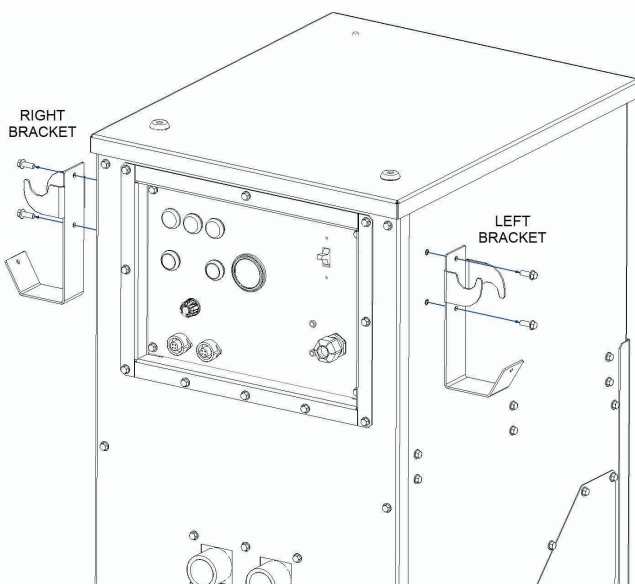


FIGURE A.1

- Adapter (K3492-4) * **REQUIRED FOR EXTRACTION HOSE KITS, 2 PER HOSE***
- Extraction Hoses:
 - 8 ft. (2.5m) long x 1-3/4 in. (45mm) I.D. (K2389-9)
 - 16 ft. (5m) long x 1-3/4 in. (45mm) I.D. (K2389-8)
- Weld Fume guns:
 - 250A (K4463-2)
 - 350A (K4464-2)
- Current Activated Start/Stop Sensor accessory (K2752-4)

See Accessories section for more information.

Note: Recommended maximum hose length is 16 ft. (5m) on extraction side of unit. Consult Lincoln Electric Automation Department at 1.888.935.3878 before using any other size or length of hose.

⚠ WARNING

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

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 with covers open or filter removed.
- Keep away from moving parts.



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

INSTALLATION

SELECT SUITABLE LOCATION

Select a dry, firm, level surface capable of supporting the weight of the machine.

CAUTION:

Do not use the rear handle for lifting, damage to the machine may occur. Only use the rear handle for maneuvering the machine on the rear wheels

1. Remove the side hose brackets from the accessory box. Remove 4 screws (2 on each side) from the machine (see fig A.1). Attach the side torch/hose holder brackets using the 4 removed screws. Note the orientation of the brackets. There is a left and right side.
2. Connect hoses to the inlets utilizing the 1-3/4" hose to 2" adapters. The 1-3/4" hose to 1-3/4" tube adapters that come with the hose kits should be removed and discarded. If applicable, install the inlet spark arrester(s) to the inlet of the machine prior to installing the hose(s). See Figure A.2.

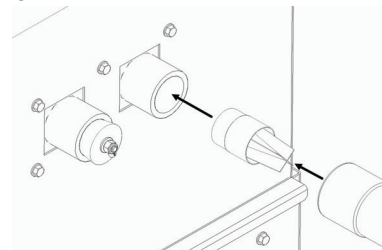


FIGURE A.2

3. Connect the other ends of the hoses to the vacuum port of the fume guns.
4. Connect compressed air to the rear fitting.
5. Apply the correct input power, only qualified personnel should perform this function.
 K5271-1 460V, 3 phase, 60Hz
 K5271-2 208-230V, 3 phase, 60Hz
 K5271-3 575V, 3 phase, 60Hz
6. If applicable, connect the Current Activated Start/Stop Sensor accessory(s) to the ports on the front of the machine (see Figure 3, item G & H).

ON TORCH INSTALLATION

1. Beginning at the welding torch, attach the suction nozzle to the gooseneck using the supplied torch gooseneck clamp. Place the suction nozzle 75-90mm from the torch gas nozzle. Tighten the gooseneck clamp securely.
2. Form the suction hose to conform to the welding torch.
3. Attach the torch body clamp to the welding torch in a position to accept the suction hose and tighten the two (2) screws. Secure the suction hose in the spring clamp of the torch body clamp.
4. Temporarily attach the 25mm hose to the suction nozzle set and route the hose along the robot arm to the base of the robot. Secure the hose along its path using zip-ties, Velcro, or some other means.
5. Once satisfied with the routing of the 25mm suction hose, remove the hose and use the included epoxy to bond the flexible stainless steel hose to the end fitting. Please allow 24 hours for the epoxy to completely cure.
6. Once the epoxy sets, re-attach the suction hose to the stainless steel hose and secure the connection with a cinch clamp.
7. At the opposite end of the suction hose attach the 25mm to 1.75" adapter and connect the 25' 1.75" hose.
8. Connect the 1.75" to 2.0" adapter and connect the adapter to the X-Tractor® 2 input port.

FOR FANUC COBOT APPLICATIONS

Maintain factory default payload mass values:

- Lincoln Water cooled torch 5.4 kg
- Lincoln Air cooled torch 3.3 kg

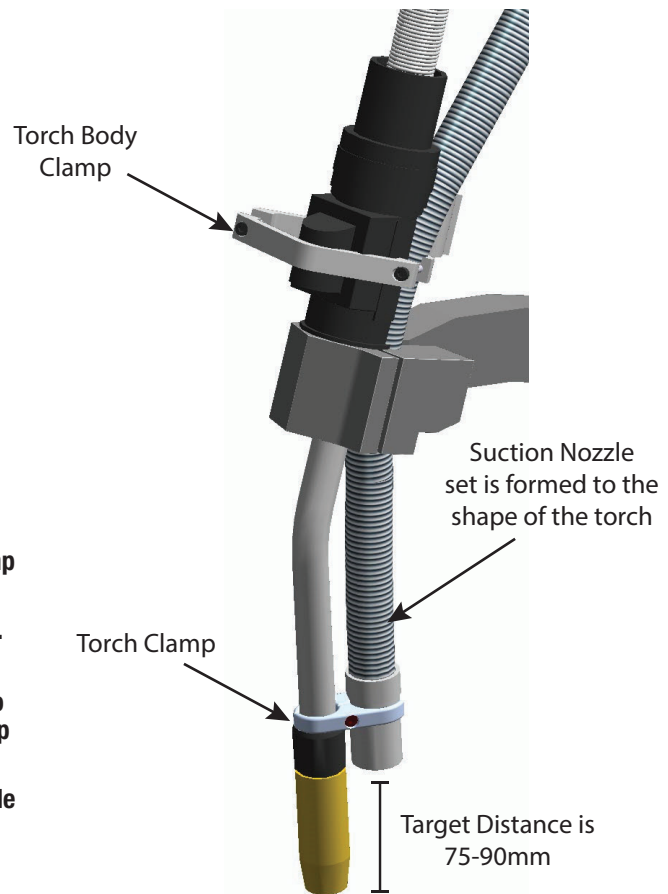


FIGURE A.3

FOR AUTOMATIC START/STOP OPERATION OF THE X-TRACTOR:

1. Connect a normally open, voltage free contact from the robot or cobot controller to pins 1 & 3 of the connector (FC0342050300) included with the on-torch kit.
2. Plug the connector into either Remote Start A or Remote Start B.

When the Robot Controller contact closes, the XTractor will run. When the contact is opened the XTractor will turn off after the preset time delay.

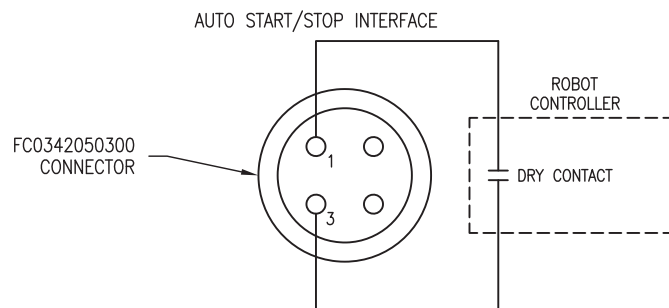


FIGURE A.4

ON TORCH COMPONENTS



Suction
Nozzle Set



Torch
Gooseneck
Clamp



1.75" x 25'
Hose



25mm hose



Torch Body
Clamp



Cinch Clamp



1.75 to 2.0"
Adapter



25mm to
1.75"
Adapter

RECOMMENDED USES

Read and understand this entire section before operating your X-TRACTOR 2 FUME GUN.

WARNING

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

The X-TRACTOR 2 Fume Gun is a portable, high vacuum welding fume extractor designed for the removal and filtration of welding fumes released from the following welding processes:

- MIG/MAG solid wire (GMAW)
- MIG/MAG flux cored wire (FCAW)*
- Stick welding (SMAW)
- TIG (GTAW) welding

*For light duty flux-cored applications only.

WARNING

Excluded Uses!

- Welding fumes containing oil
- Aluminium dust
- Burning or incandescent materials
- Cigarettes
- Aggressive media
- Water and moisture
- Explosive gases and/or dust mixtures
- Dusts with toxic characteristics other than welding fumes
- The installation of this product is exclusively reserved to authorized, well-trained and qualified professional electrical and mechanical contractors. A goal of the Smartwire is quick installation, possibly without any LE involvement.
- Inspect the product and check it for damage. Verify the functioning of the safety features.
- Electrical connection to be executed in accordance with local requirements. Ensure compliance with the EMC regulatory arrangements.
- Check the working environment. Do not allow unauthorized persons to enter the working environment.

- Protect the product against water and humidity.
- Use common sense. Stay alert and keep your attention to your work.
- Never install the product in front of entrances and exits which must be used for emergency services.
- Make sure the wall, ceiling or support system are strong enough to carry the product.
- Air containing particles such as chromium, nickel, beryllium, cadmium, lead etc., which is a health hazard, should never be recycled. This air must always be brought outside the working area.

SELECT SUITABLE LOCATION

Select a dry, firm, level surface capable of supporting the weight of the machine.

- Do not place equipment near radiant heat sources.
- Do not place in a confined space. Allow a minimum of 1 foot of clearance around machine at all times for airflow and maintenance requirements.

ENVIRONMENTAL AREA

Keep the machine inside and dry at all times. Do not place on wet ground or in puddles. Never place liquids on top of the machine.

Note: The X-TRACTOR 2 Fume Gun does not filter any shielding gases. Gases pass through the filter.

OPERATION

The X-TRACTOR 2 Fume Gun provides enough suction for two fume guns. Do not attach more than two fume guns to the X-TRACTOR 2 Fume Gun unit.

- A. Power On (Light)
- B. Alarm (Light)
- C. Fan Running (Light)
- D. Reset Drive Alarm & Manual Clean (Switch)
- E. Start/Stop fan (Switch)
- F. Fan Speed Adjustment dial
- G. & H. Remote start inputs A and B
- J. Filter differential pressure gauge
- K. Main Switch - Input Power

1. Start up the machine by flipping the main on/off toggle switch (see Figure B.1, item K), located on the front side of the machine. The white power light will illuminate (see Figure B.1, item A).
2. Press the fan start/stop button to start the fan (see Figure B.1, item E). The green fan light will illuminate (see Figure B.1, item C).
3. Adjust the fan speed by rotating the airflow knob (see Figure 3, item F).
4. The alarm reset/manual clean button (see Figure B.1, item D) can clear VFD faults, shown by a blinking alarm light (see Figure B.1, item B). It can also force a cleaning cycle to initiate by pressing and holding for 6 seconds.

VARIABLE FAN SPEED

The Variable Frequency Drive (VFD) can control the fan between 0 CFM and 150 CFM (255 M3/hr). This is controlled by the airflow knob (see Figure 3, item F).

MANUAL VS. AUTOMATIC START/STOP OPERATION

Use the Automatic Start/Stop feature to improve energy efficiency.

The remote start A and B connections (see Figure B.1, item G & H), can be used in conjunction with the Current Activated Start/Stop Sensor accessory to automatically start and stop the fan when the work cable of the welding machine is positioned in the accessory clamp. The unit continues to operate for 25 seconds after welding is completed before automatically shutting off.

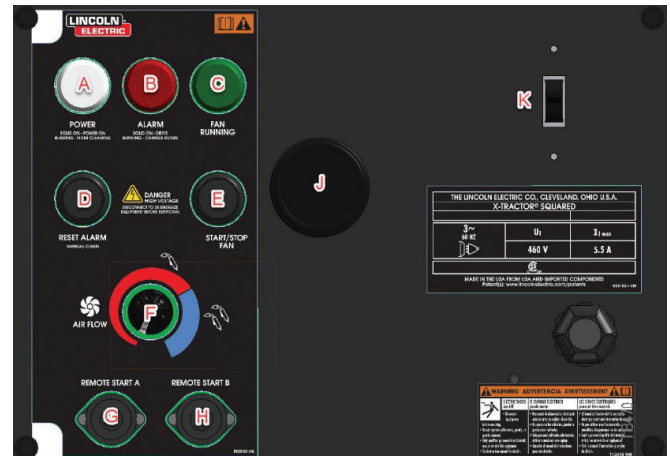


FIGURE B.1

AUTOMATIC FILTER CLEANING

The X-TRACTOR 2 Fume Guns has an automatic off-line cleaning function. The automatic filter cleaning system ensures optimal capacity at all times. The system consists of a compressed air tank, solenoid valve and a timer. The tank is filled with compressed air. The solenoid valve opens at certain intervals and compressed air is blown into the filter. Dust, stuck on the outside of the filter is blown off and into the dustbin. The tank is then again filled with compressed air, awaiting the next cycle.

Automatic filter cleaning will not take place if the power is switched off using the main on/off toggle switch (see Figure B.1, item K).

When the pressure across the filter exceeds 5 inWG (1245 Pa), and after the fan is shut off via fan start/stop button (see Figure B.1, item E), a filter cleaning cycle will be initiated in order to optimize filter efficiency. After 20 seconds of turning the fan off, the filter is cleaned with a series of 2 compressed air blasts, 20 seconds apart. For a total cleaning cycle time of approximately 1 minute.

The X-TRACTOR 2 Fume Guns also has an automatic on-line cleaning function. When the pressure across the filter exceeds 5 inWG (1245 Pa), the machine will initiate an automatic on-line cleaning cycle. The filter is cleaned with a series of 2 compressed air blasts, 20 seconds apart. For a total cleaning cycle time of approximately 1 minute.

MANUAL FILTER CLEANING

If desired, the filter cleaning system can be activated manually.

1. Press and hold for 6 seconds alarm reset/manual clean button (see Figure B.1, item D) to activate the filter cleaning cycle. This procedure takes approximately 2 minutes, during which the filter cartridges are cleaned by 2 compressed air blasts.

ACCESSORIES

EXTRACTION HOSES

K3492-4 adapters required for hose kits, 2 per hose

- **K2389-9:** 8 ft. (2.5m) long x 1-3/4 in. (45mm) I.D.
- **K2389-8:** 16 ft. (5m) long x 1-3/4 in. (45mm) I.D.

Two optional hose lengths are 8 ft. (2.5 m) x 1-3/4 in. (45mm) I.D. and 16 ft. (5 m) x 1-3/4 in. (45 mm) I.D. To ensure effective performance level, it is recommended that a maximum hose length of 16 ft. (5 m) be used.

1-3/4 in. to 2 in. hose adapter (K3492-4)

REQUIRED FOR EXTRACTION HOSE KITS, 2 PER HOSE

K5412-1 Inlet plug kit

REQUIRED FOR USE WITH ONLY 1 FUME GUN

K1898-1 Inlet Spark Arrester

For use with large debris

K5540-1 Undercarriage Kit

WELD FUME GUNS

- **K4463-2:** 250A
- **K4464-2:** 350A

CURRENT ACTIVATED START/STOP

K2752-4: Sensor accessory

REPLACEMENT FILTERS

- weldfumefilters.com

MAINTENANCE

SAFETY PRECAUTIONS

WARNING

Before carrying out service, maintenance and/or repair jobs, fully disconnect power to both the major circuit and the convenience outlet circuit



Use Personal Protective Equipment (PPE), including safety glasses, dust mask and gloves to avoid injury. This also applies to persons who enter the work area.



MOVING PARTS can injure.

- Do not operate with doors open or guards off.
- Stop before servicing.
- Keep away from moving parts.



Have qualified personnel do all maintenance and troubleshooting work.

See additional warning information throughout this operator's manual.

The product has been designed to be reliable for extended periods of time with reasonable maintenance. In order to guarantee optimal performance level, regular maintenance and cleaning activities are required which are described in this section. If you observe the necessary safety precautions and carry out the maintenance at regular intervals, any problems occurring will be detected and corrected before they lead to a total breakdown.

The indicated maintenance intervals can vary depending on the specific working and ambient conditions. Therefore, it is recommended to thoroughly inspect the complete product once every year in addition to the indicated periodic maintenance.

WARNING

Improper maintenance can cause fire. Always maintain the product according to the instructions of this manual.



WARNING

Always switch OFF the system and disconnect the compressed air (if applicable) before carrying out the instructions below. First read the maintenance instructions at the beginning of this manual



FUSE REPLACEMENT

OPEN SIDE ELECTRICAL ACCESS DOOR, IDENTIFY THE FUSES THAT NEED REPLACED:

FUSE	
FUSE ID	TYPE and RATING
F1	1 A 600 V AC TIME DELAY CLASS CC
F2	1 A 600 V AC TIME DELAY CLASS CC
F3	15 A 600 V AC J-TYPE
F4	15 A 600 V AC J-TYPE
F5	15 A 600 V AC J-TYPE
F6	1.25 A 250 V AC TIME DELAY 1.25 IN X 0.25 IN OD

SERVICE, MAINTENANCE AND REPAIRS

- Observe the maintenance intervals given in this manual. Overdue maintenance can lead to high costs for repair and revisions and can render the guarantee null and void.
- Always use tools, materials, lubricants and service techniques which have been approved by the manufacturer. Never use worn tools and do not leave any tools in or on the product.
- Safety features which have been removed for service, maintenance or repairs, must be put back immediately after servicing and that they still function properly.

The bottom dust bin should be inspected, cleaned and emptied on a monthly basis.

- Frequency of cleaning and emptying depends on a number of factors such as the type of welding process and the frequency of use.
- The main filter should be checked every month to ensure that there is no damage.
- The seals of the main filter should be checked every 12 months.
- When fume extractor is not in use, wrap cord and place in the handle opening. Store fume extractor in a dry place.
- When fume extractor is in use, take precaution that the cord is protected from damage and not a tripping hazard.

When necessary, to drain the tank, remove the dust bin to gain access to the tank drain. It is located on the bottom right side of the tank. Fully unscrew the T handle plug to drain any fluid. Replace the plug, and the dust bin before use.

EMPTYING THE DUST BIN

1. Remove electrical cord of X-TRACTOR 2 Fume Gun unit from electrical outlet.
2. Loosen (2) latches from the front of the machine.
3. Empty the collection pan and dispose of waste properly*. If required, clean out any dust from inside the drawer area of the machine that may have bypassed the drawer, and might prevent the drawer from being properly reinstalled.
4. Replace the dust bin and secure using the (2) latches.

*Check with local authorities for regulations governing the proper disposal of used filters and particulate matter.

WARNING

The particulate matter collected in the unit may be dangerous to your health. Take necessary precautions so that you and your fellow workers do not breathe dust and particulate. Wear a suitable respirator when disposing of the particulate. Follow local Environmental regulations for disposal of filters and particulate matter.

REPLACING THE FILTER

WARNING

A saturated filter often contains dust and dirt particles which could form a health hazard upon inhalation. When replacing the filters, always wear a high-quality and approved face mask or respirator. Wrap the filters in a properly closed plastic bag and dispose of it in compliance with local regulations.

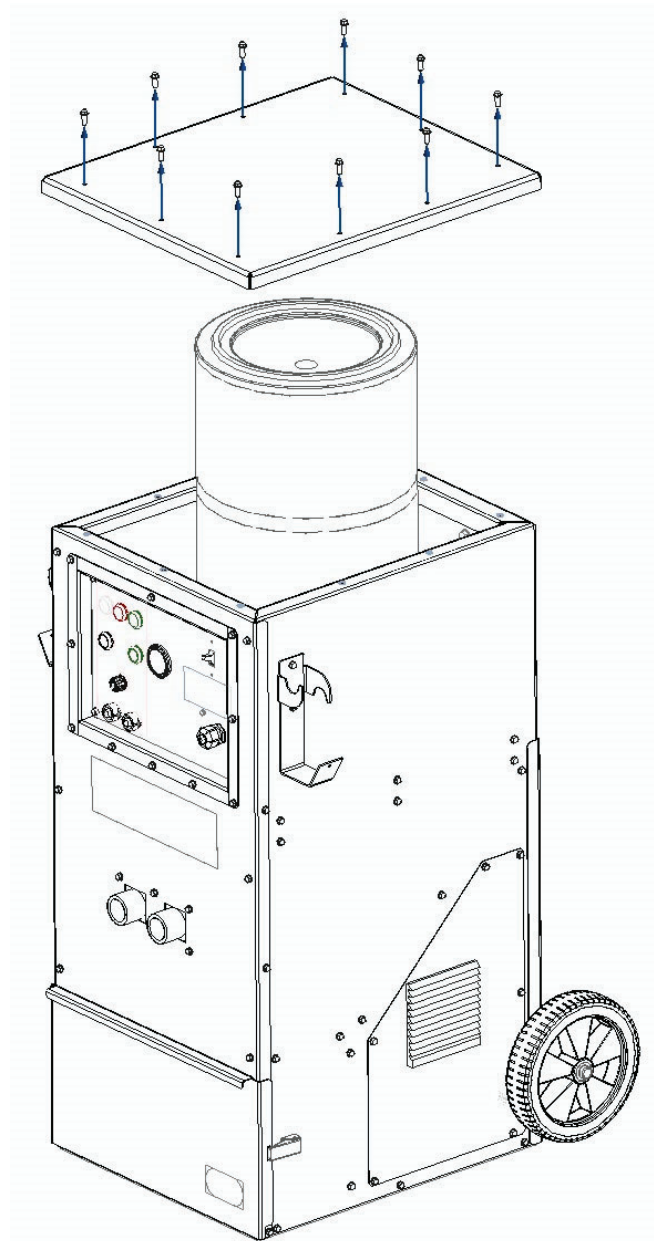
Replace the filters in case of damage or when the extraction capacity has become insufficient due to the amount of particulate in the filter. Periodic check of the filters is required to maintain optimal performance and life of unit. Filter performance/life is dependent on variables such as:

- Welding application/processes
- Oil involved in weld processes
- Dust/grinding particulate
- Proper usage and maintenance

REPLACING THE FILTER

Remove electrical cord of X-TRACTOR 2 Fume Gun unit from electrical outlet.

1. Using a 3/8" hex driver, remove the top ten 1/4"-20 fasteners from the top lid, and remove the lid.
2. Remove Filter
3. Check the main filter seals before replacing the filter.
4. Place the new filter (open side down) into filter chamber. Ensure it is centered on the filter support plate.
5. Replace the top lid and fasten with the original 10 bolts.



TROUBLESHOOTING GUIDE



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.

Step 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.

Step 2. POSSIBLE CAUSE(S).

The second column labeled “POSSIBLE AREA(S) OF MISADJUSTMENTS” lists the obvious external possibilities that may contribute to the machine symptom.

Step 3. RECOMMENDED COURSE OF ACTION

This column provides a course of action for the Possible Areas of Misadjustment(s).

Service and Technical Support

For information about specific adjustments, maintenance or repair jobs which are not dealt with in this manual, please contact Lincoln Electric Automation Department 888-935-3878.

Make sure you have the following data on hand:

- product name
- serial number
- purchase order (number + date) for warranty verification



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

WWW.LINCOLNELECTRIC.COM/LOCATOR

Observe all Safety Guidelines detailed throughout this manual

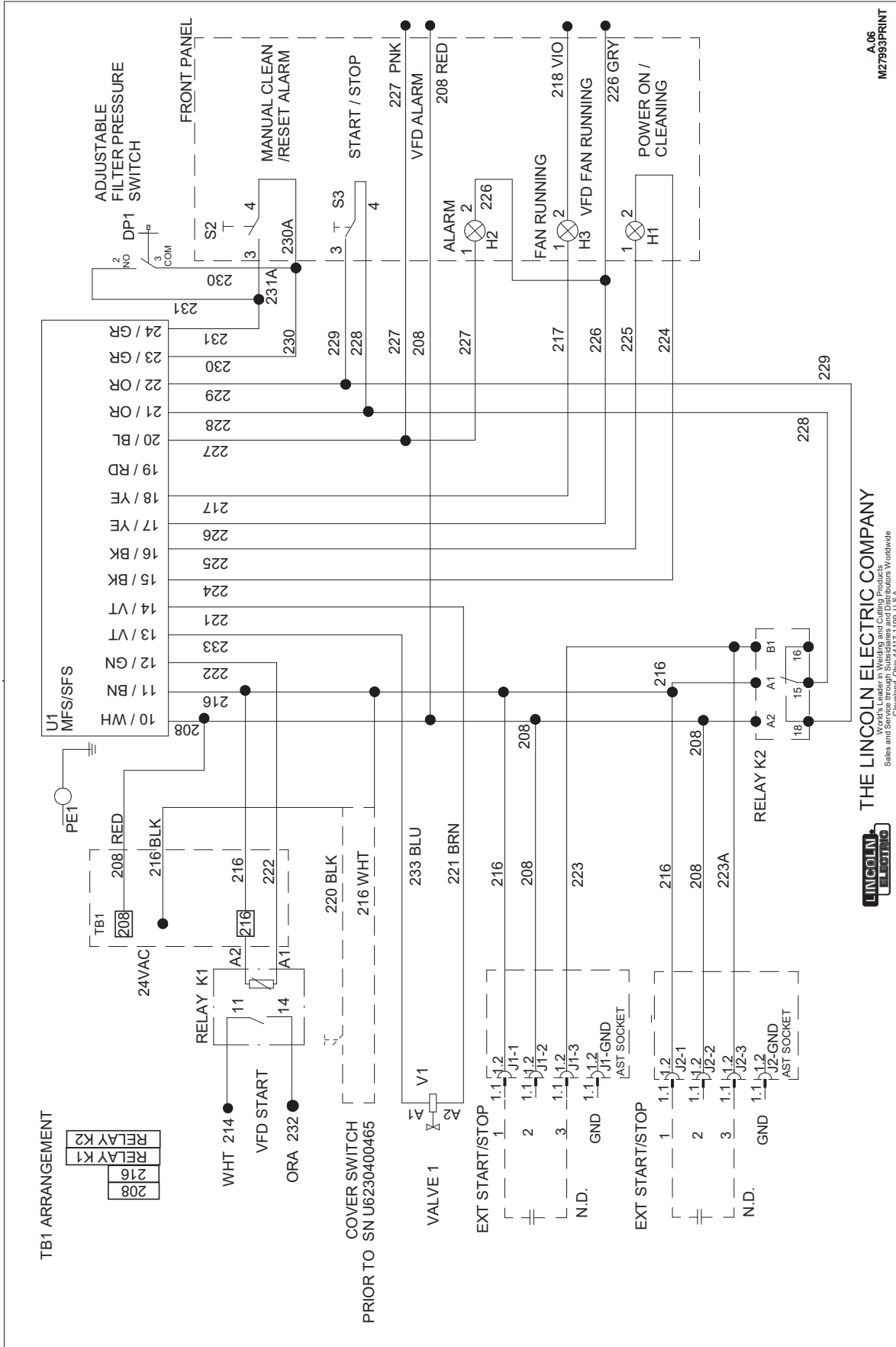
Observe all Safety Guidelines detailed throughout this manual		
PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
FUNCTION PROBLEMS		
Motor does not start.	<ol style="list-style-type: none"> 1. Not correct input power available. 2. Circuit breaker tripped. 3. Unit is off. 4. Fuse open. 	<ol style="list-style-type: none"> 1. Verify 460 VAC 60Hz (K5271-1), 230 VAC 60Hz (K5271-2), 575 VAC 60Hz (K5271-3) input power at the machine. 2. Reset circuit breaker. 3. Replace appropriate fuses.
Poor Suction	<ol style="list-style-type: none"> 1. Leakage. 2. Filter dirty. 3. Improper application. 	<ol style="list-style-type: none"> 1. Check hose connections and integrity. 2. Run cleaning cycle or replace Filter. 3. Check hose diameter and maximum length 16 ft. (5 m), check filter for oily conditions.
Unit will not sense current.	<ol style="list-style-type: none"> 1. Welding current too low. 2. Sensor cable not connected. 	<ol style="list-style-type: none"> 1. Reposition sensor clamp. 2. Verify connection at the machine.

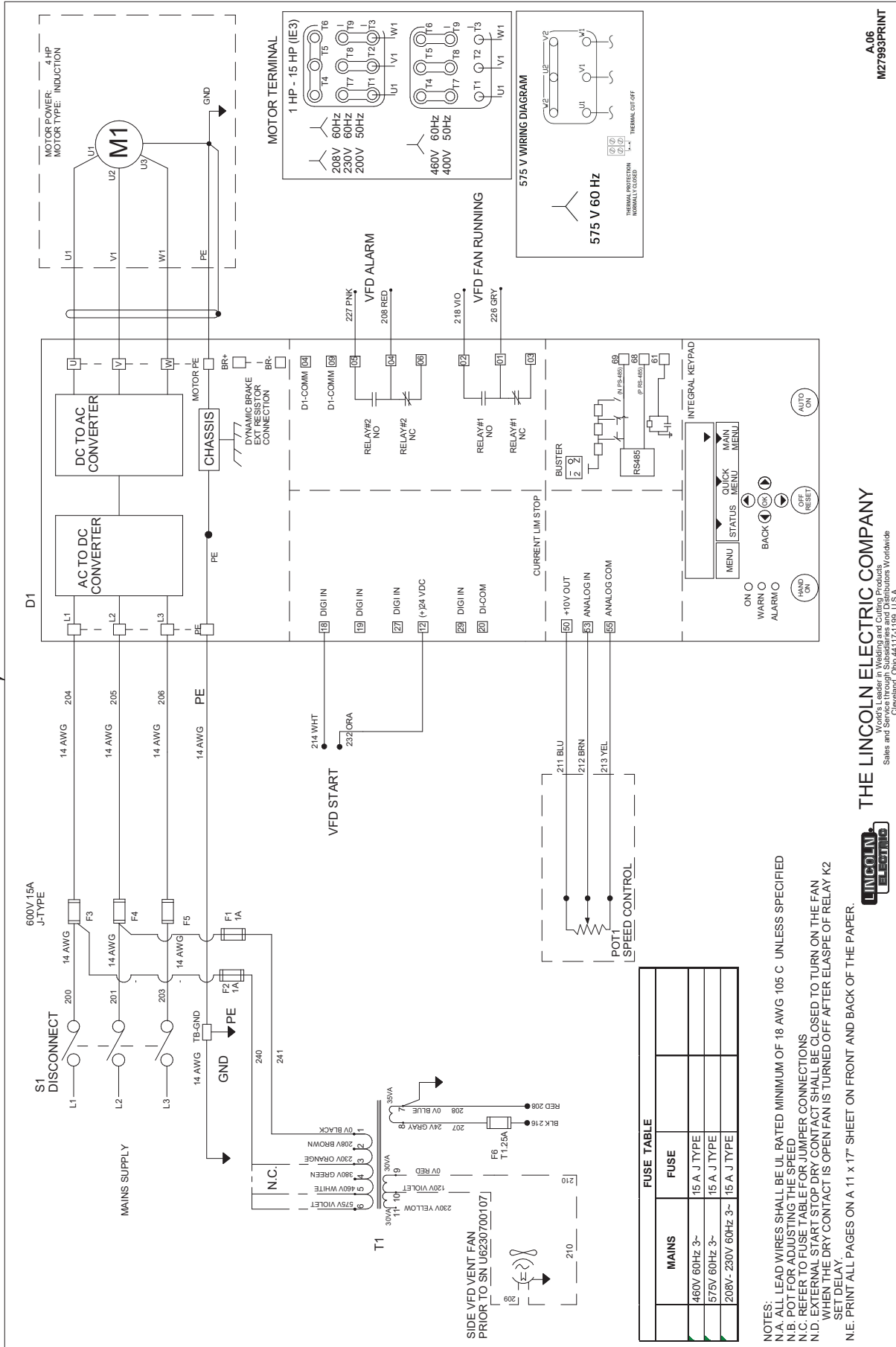


If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your Lincoln Authorized Service Facility for technical troubleshooting assistance before you proceed.

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WIRING DIAGRAM





A.06
M27953PRINT

THE LINCOLN ELECTRIC COMPANY
World's Leader in Welding and Cutting Products.
Sales and Service through Subsidiaries and Distributors Worldwide
Cleveland, Ohio 44117-1189 U.S.A.



			
WARNING	<ul style="list-style-type: none"> ● Do not touch electrically live parts or electrode with skin or wet clothing. ● Insulate yourself from work and ground. 	<ul style="list-style-type: none"> ● Keep flammable materials away. 	<ul style="list-style-type: none"> ● Wear eye, ear and body protection.
Spanish AVISO DE PRECAUCION	<ul style="list-style-type: none"> ● No toque las partes o los electrodos bajo carga con la piel o ropa mojada. ● Aíslese del trabajo y de la tierra. 	<ul style="list-style-type: none"> ● Mantenga el material combustible fuera del área de trabajo. 	<ul style="list-style-type: none"> ● Protéjase los ojos, los oídos y el cuerpo.
French ATTENTION	<ul style="list-style-type: none"> ● Ne laissez ni la peau ni des vêtements mouillés entrer en contact avec des pièces sous tension. ● Isolez-vous du travail et de la terre. 	<ul style="list-style-type: none"> ● Gardez à l'écart de tout matériel inflammable. 	<ul style="list-style-type: none"> ● Protégez vos yeux, vos oreilles et votre corps.
German WARNUNG	<ul style="list-style-type: none"> ● Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung! ● Isolieren Sie sich von den Elektroden und dem Erdboden! 	<ul style="list-style-type: none"> ● Entfernen Sie brennbares Material! 	<ul style="list-style-type: none"> ● Tragen Sie Augen-, Ohren- und Körperschutz!
Portuguese ATENÇÃO	<ul style="list-style-type: none"> ● Não toque partes elétricas e electrodos com a pele ou roupa molhada. ● Isole-se da peça e terra. 	<ul style="list-style-type: none"> ● Mantenha inflamáveis bem guardados. 	<ul style="list-style-type: none"> ● Use proteção para a vista, ouvido e corpo.
Japanese 注意事項	<ul style="list-style-type: none"> ● 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。 ● 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。 	<ul style="list-style-type: none"> ● 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。 	<ul style="list-style-type: none"> ● 目、耳及び身体に保護具をして下さい。
Chinese 警告	<ul style="list-style-type: none"> ● 皮膚或濕衣物切勿接觸帶電部件及鎢條。 ● 使你自己與地面和工件絕緣。 	<ul style="list-style-type: none"> ● 把一切易燃物品移離工作場所。 	<ul style="list-style-type: none"> ● 佩戴眼、耳及身體勞動保護用具。
Korean 위험	<ul style="list-style-type: none"> ● 전도체나 용접봉을 젖은 헝겊 또는 피부로 절대 접촉치 마십시오. ● 모재와 접지를 접촉치 마십시오. 	<ul style="list-style-type: none"> ● 인화성 물질을 접근시키지 마십시오. 	<ul style="list-style-type: none"> ● 눈, 귀와 몸에 보호장구를 착용하십시오.
Arabic تحذير	<ul style="list-style-type: none"> ● لا تلمس الاجزاء التي يسري فيها التيار الكهربائي أو الألكترود بجسدك أو بالملابس المبللة بالماء. ● ضع عازلا على جسمك خلال العمل. 	<ul style="list-style-type: none"> ● ضع المواد القابلة للاشتعال في مكان بعيد. 	<ul style="list-style-type: none"> ● ضع أدوات وملابس واقية على عينيك وأذنيك وجسمك.

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

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，並請遵守貴方的有關勞動保護規定。

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.

CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer's particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric is a responsive manufacturer, but 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.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

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.



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