LINCOLN ELECTRIC

Operator's Manual

X-TRACTOR® 5A

For use with machines having Product Numbers:

K3966-1, K3966-2 & K3966-3

GENUINE LINCOLN PARTS™

Register your machine:
www.lincolnelectric.com/register

Authorized Service and Distributor Locator:
www.lincolnelectric.com/locator

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

IM10160 | Issue Date 10/14

THE LINCOLN ELECTRIC COMPANY
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
Phone: +1.216.481.8100 • www.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.P65 warnings.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 W117.2-1974. 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.

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. I 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.

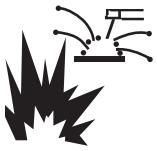
5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

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.b.

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.c.

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-I, "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 web-site: 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 conned 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.

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/m³	PEL mg/m³
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

Page

GENERAL DESCRIPTION

The X-Tractor 5A is a 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 six fume guns or small suction heads and is suitable for heavy duty welding applications and continuous use.

Welding fume enters the X-Tractor 5A through a connection on the rear side of the machine. It then passes through the filter, the blower and exits through an internal silencer. The blower is powered by a three phase electric motor. A special direct cooling system assists in cooling the blower.

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 5A features an integrated automatic filter cleaning system. A timer signals 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 front of the machine.

Unit includes:

- **Filter Cartridge**
- **Automatic Filter Cleaning System**
- **Automatic Operation Connection**

TECHNICAL SPECIFICATIONS

GENERAL	
MOTOR SPEED	3600 RPM
POWER	8.4 HP (6.3 kW.)
VOLTAGE	230V, 3Ph, 60 Hz 460V, 3Ph, 60 Hz 575V, 3Ph, 60 Hz
CURRENT	230V - 20A 460V - 10A 575V - 8.4A
CABLE DIAMETER	3 X 2.5 + E mm^2
INLET / OUTLET DIAMETER	3.94 inches / 3.15 inches (100 mm / 80 mm)
NET WEIGHT	243 Lbs. (110 Kg.)
NOISE LEVEL	<73 dB(A)
RECOMMENDED COMPRESSED AIR	58 psi (4 bar)
INPUT COMPRESSED AIR	1/4” dim.
FILTER MATERIAL	Polyester
FILTER AREA	53.82 ft^2 (5 m^2)
FILTER CLASS	C BIA
FILTRATION EFFICIENCY (ZH1/487-2)	>99.9%

FAN	
TYPE	4 STEPS RADIAL
AIRFLOW (MAX.)	235 CFM (400 m^3/h)
STATIC PRESSURE (MAX.)	23560 Pa
FAN SPEED	10,000 RPM

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

Install the X-Tractor 5A on a solid foundation that is flat and even. Make sure the operator has easy access to all switches and controls. Do not expose the unit to temperatures over 104º F (40º C), as this will reduce the motor power and shorten the life of the unit.

⚠ WARNING

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

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

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.**

FALLING EQUIPMENT can cause injury.

- **Lift only with equipment of adequate lifting capacity.**
- **Be sure machine is stable when lifting.**
- **Well trained personnel must execute all lifting operations.**
- **Make sure to use only approved lifting gear.**

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

SELECT SUITABLE LOCATION

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

1. **Connect hoses/tubes to the inlet/outlet.**
2. **Connect compressed air. Adjust pressure regulator at front to 4 bar.**
3. **Connect signal cable to external start/stop switches. (If applicable).**
4. **Apply the correct input power.**

Only qualified personnel should perform this function.

RECOMMENDED USES

Read and understand this entire section before operating your X-TRACTOR 5A.

⚠ 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 5A is a 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

⚠ WARNING

Use of the product for extracting and/or filtering fumes and/or gases that are released from the following processes is not recommended:

- **Welding applications with intensive use of anti-spatter spray, paste or solution.**
- **Autogenic or plasma cutting spray/molten metal.**
- **Arc-air gouging.**
- **Welding that produces the release of a dense oil mist.**
- **Paint spraying.**
- **Extraction of hot gases [more than 104° F (40° C)].**
- **Extraction of aggressive fumes (such as acids).**
- **Grinding aluminum and magnesium.**
- **Flame spraying.**
- **Extraction of cement, saw dust, wood dust, etc.**
- **Extracting cigarettes, cigars, tissues and other burning particles, objects and acids.**
- **Any dangerous situations where there is a risk of an explosion or fire.**

Note: The X-TRACTOR 5A does not filter any shielding gases. Gases pass through the filter.

OPERATING INSTRUCTIONS

Before commissioning the unit into continuous operation, check the following:

1. **Motor has correct speed and rotation. See arrow on fan.**
2. **The unit does not have any abnormal noise level and/or vibrations.**
3. **No leaks in hoses or couplings.**

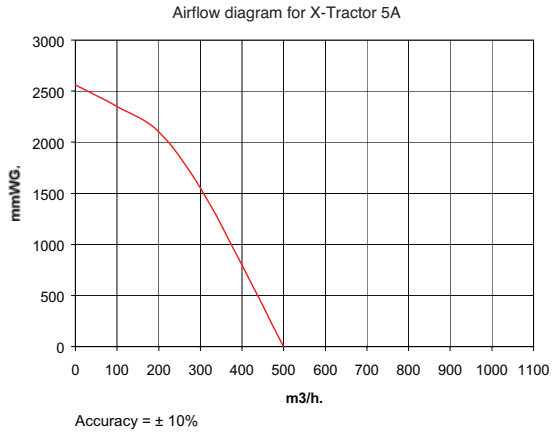


FIGURE 1

The X-TRACTOR 5A is easy to use. It is controlled by an manual on/off switch or automatic start/stop (optional).

1. **At first start up, set the automatic start switch in manual mode.**
2. **Press or turn ON the main start switch. The unit should start up. If auto start/stop feature is connected, turn off the unit again and switch to automatic start mode. Then press or turn ON the main switch.**
3. **Activate one of the external start switches and make sure that the machine starts.**
4. **Close the external switch and check that the unit is running for the pre-set period (2 – 3 minutes). If OK, then the unit is ready for use.**

When starting the motor, the following will occur:

A. The fan/motor starts.

B. The filter cleaning receives a signal and the filter cleaning runs according to a pre-set cycle.

C. The X-TRACTOR 5A has an off-line cleaning function. After the unit is shut off, a number of cleaning cycles will be carried out in order to optimize filter efficiency. The number of cycles is set by a timer inside the cabinet. The filter cleaning switch on the front cover must be in ON-mode. By setting the switch to OFF-mode, filter cleaning is not performed.

AUTOMATIC FILTER CLEANING

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 set at the timer 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. This cycle can be turned off by turning the filter cleaning switch on the front panel to OFF mode.

The ON-button shows the time the solenoid valve is open. The OFF-button dictates the pause intervals (the time between two cleanings). The intervals of the filter-cleaning are repeated until the unit is turned off.

The timer is also equipped with a test button. By pressing this button, filter cleaning is immediately performed. This should only be used as a test. The signals for the solenoid valve are pre-set on the following values: ON = 3 sec., OFF = 30 min. The values may be adjusted if needed. There is a switch on the front cover where it is possible to switch the cleaning OFF. This may be necessary when operations where reversed air in the airstream must be avoided (i.e. - drilling of printboard, extraction of extremely light particles etc.).

D-Lux Timer Settings

1. Time setting options;

The ON and OFF time of the D-LUX timer can be programmed anywhere between 10ms and 99h. The set time will be indicated by the LED display on the right side of the Digital display.

= 1 Hour

= 1 Minute

= 1 Second

= 10 Millisecons

2. To change the ON time, simply press the right 'on/arrow up' button and 'on' will appear briefly on the display.

3. You can now press the left 'off/arrow down' button for decreasing the time or the right 'on/arrow up' button to increase the time.

4. If the desired ON time is set, then simply don't press any buttons and after a few seconds the display will start flashing illustrating that the new time is being saved.

Once the new time is saved, the unit will start operating with the new time setting.

5. To change the OFF time simply press the left 'off/arrow down' button and 'off" will appear briefly on the display.

6. You can now press the left 'off/arrow down' button for decreasing the time or the right 'on/arrow up' button to increase the time.

7. If the desired OFF time is set, then simply don't press any buttons and after a few seconds the display will start flashing illustrating that the new time is being saved.

Once the new time is saved, the unit will start operating with the new time settings.

8. The unit is now fully programmed to your desired time settings and will work fully automatically.

9. Press the TEST button to check the valve function.

10. Your D-LUX timer is ready for operation!

CHANGING THE TIMER FUNCTION

The D-LUX timer is able to perform the following functions:

- Function 'A' start with the ON time and then the OFF time, etc.
- Function 'C' start with the OFF time and then the ON time, etc.
- Function 'B' single shot, starts with the ON time and then switches OFF indefinite.
- Function 'D' single shot, starts with the OFF time and then switches ON indefinite.
- Function 'E' start with OFF time then ON time and then switches OFF indefinite.
- Function 'F' start with ON time then OFF time and then switches ON indefinite.

The D-LUX timer is factory set to the function 'A'. However, should you need a different function you can always change it. To do so please follow these easy steps:

1. Disconnect the unit from the power supply.
2. Press and hold down the (TEST) button.
3. Connect the unit to the power supply.
4. Release the TEST button after 'A' appears on display if the unit is being programmed for the first time. If the function has already been changed then the last set function will appear on display (A/ B/ C/ D/ E or F).
5. Use (off/arrow down) and (on/arrow up) to select the function (A/ B/ C/ D/ E or F).
6. When the function is selected do not press anything and after a few seconds the unit will resume operation with the new function setting.
7. Change the pre-set ON and/or OFF times if required

RETURNING THE TIMER TO THE FACTORY SETTINGS

Factory settings of each timer: 3sec. ON time, 30min. OFF time, function 'A'. No matter how you change the settings you can always reset all settings to factory settings following these easy steps:

1. Disconnect the unit from the power supply.
2. Press and hold down (off/arrow down) and (TEST) buttons.
3. Connect the unit to the power supply.
4. Release the buttons after 'P' appears on the display.
5. Then 'A' appears on the display - do not press anything.
6. After a few seconds the unit will resume operation with factory settings.
7. Change the presset ON and/or OFF times if required

TIMER SPECIFICATIONS	
INTERVAL (OFF) TIME	.01 SEC. - 99 HR. (note: check response time of your sole-
DISCHARGE (ON) TIME	.01 SEC. - 99 HR. (note: check response time of your sole-
SUPPLY VOLTAGE	110 – 240V AC/DC 50-60HZ (± 10%)
	48 – 115V AC/DC 50-60HZ (± 10%)
	10-48 V AC/DC 50-60HZ (± 10%)
CURRENT CONSUMPTION	MAX. 7mA
OPERATING TEMPERATURE	-40ºF TO +140ºF (-40ºC TO +60ºC)
ENVIRONMENTAL PROTECTION	IP65 WHEN INSTALLED
CASE MATERIAL	ABS PLASTIC FR GRADE
CONNECTION	DIN 43650A - ISO 4400
INDICATOR	DIGITAL DISPLAY

TIMER CERTIFICATIONS	
CE	YES
cULus	YES
RoHS	YES
IP65	YES

OFF-LINE FILTER CLEANING

When the X-TRACTOR 5A is off, the signal to the solenoid valve is controlled by an additional timer placed inside the cabinet. This timer keeps the signal on for a certain period of time in order to run two or three more cleaning cycles after the extraction unit is shut down (OFF-line cleaning). Inside the filter container, there is a cover that closes the inlet in order to avoid dust being blown out in the duct/hose system.

OFF-LINE CLEANING SPECIFICATIONS	
FUNCTION	MULTI-FUNCTION
MOUNTING	DIN-RAIL MOUNTING
DIMENSION	.67" (DIN 43880)
RANGE	0.1 S X - 100 H
SUPPLY	24 - 240 VAC & 24 VDC
CONNECTION	SCREW TERMINAL
I/O SIGNAL	8 A SPDT RELAY
TYPE	SYM. RECYCLER, INTERVAL, DELAY ON OP./REL.
I/O FUNCTION	7 FUNCTIONS

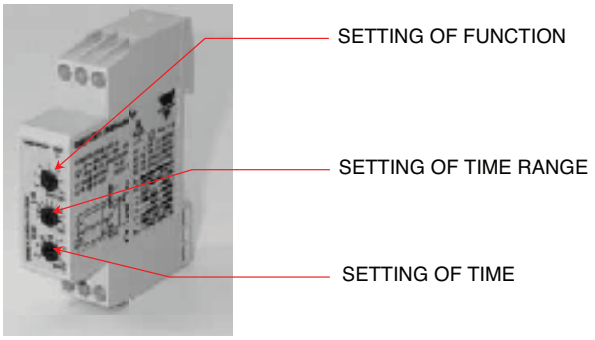


FIGURE 4

The timer is pre-set at the factory to the values in the following table. Normally it is not necessary to adjust the timer.

TIMER VALUES	
FUNCTION	DELAYED OUT
TIME RANGE	60 SEC.
TIME	3 (TOTAL IS 3 X 60 SEC = 3 MIN.)

MAINTENANCE

⚠ WARNING

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

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

ELECTRIC SHOCK can kill.

- **Do not touch electrically live parts or electrode with skin or wet clothing.**
- **Insulate yourself from work and ground.**
- **Always wear dry insulating gloves.**

MOVING PARTS can injure.

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

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

The following safety items must be followed at service and maintenance:

- **Main power supply turned off and disconnected.**
- **Disconnect compressed air.**
- **Always use personal protection equipment (PPE).**

FILTER CONTAINER

Empty the dustbin at regular intervals. The emptying frequency depends on frequency of use and dust volume. The dustbin is situated at the rear of the unit.

When emptying, proceed as follows:

1. **Be sure OFF-line cleaning cycles are finished. Turn cleaning switch to OFF-mode.**
2. **Disconnect main power supply.**
3. **Loosen the hooks of the dustbin and remove it.**
4. **Empty the dustbin in a suitable place and in a contained manner.**
5. **Remount and reinstall the dustbin.**

NOTE: The contents of the dustbin must be treated as hazardous material and destroyed according to national laws and regulations.

⚠ 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.

CHANGING FILTER CARTRIDGE

Filter life depends on use and type of particulate but normal life of the filter is approximately 2000 running hours. The filter should be inspected regularly. Damaged filters must be replaced immediately. Proceed as follows:

1. **Disconnect input power.**
2. **Remove four of the screws for the main cover of the unit. Tilt the cover forward.**
3. **Disconnect compressed air and drain the compressed air tank in order to empty. The drain valve is situated at the lower rear end (behind the dust bin).**
4. **Disconnect the coil for the solenoid valve.**
5. **Disconnect the hose clamp for the solenoid valve.**
6. **Disconnect the hose between the filter cover and rear wall.**
7. **Open the clamp on top of dust bin.**
8. **Lift the cover carefully up and pull slightly backwards. Be sure the inlet connection between the filter cover and the main chassis is separated.**
9. **Lift the cover straight up. Unscrew the center bolt and remove the cartridge. It is recommended to wrap the filter in a properly closed plastic bag before removal, to avoid contact with dust.**
10. **Position the new filter in place and reassemble in reverse order.**

DRAINING OF PNEUMATIC TANK

A valve for draining of water and condensation is mounted at the rear of the unit. The tank should be drained at least once a week. Pull the ring of the drain valve until only clean air comes out. Always protect your eyes when draining the tank.

GREASING OF BEARINGS

All bearings are permanently lubricated. It is recommended to re-lubricate the bearings after approximately 20,000 hours or 2½ years of normal run time. Clean all ball bearings and fill 50% of the bearing and approximately 65% of the housing with new grease. Use ESSO UNIREX N3 or similar.

BELT TIGHTENING

Tighten the belts as shown in Figure 5.

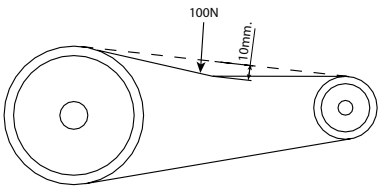
1. Remove the two (or six) screws securing the cover of the unit and tilt the cover forwards.
2. Loosen the screws that fasten the fan and adjust the tension screws.
3. The belts are now tightened.

NOTE: Remember to fasten the mounting screws on the fan after tightening.

4. Fasten the cover.

Changing of belts can be done from the bottom of the unit.

FIGURE 5



ACCESSORIES

The following accessories are available for your X-TRACTOR 5A Fume Extractor from your local Lincoln Electric Authorized Distributor.

EN 20 Extraction Nozzle - Order K2389-5

The EN 20 nozzle is designed for a wide array of welding applications. With its funnel extraction opening and magnetic mounting stand, it gives the welder a great amount of versatility. Includes a 1-3/4 in. O.D. hose adapter.

EN 40 Extraction Nozzle - Order K2389-6

The EN 40 extraction nozzle is designed for stick electrode applications. With its L-shaped tube and an elongated slotted opening, the EN 40 nozzle is designed to coincide with the time it takes the welder to use one stick electrode. This design alleviates the welder from having to continuously reposition the nozzle. Magnetic mounting stand and 1-3/4 in. O.D. hose adapter are included.

NKT Nozzle Kit - Order K2389-3

The NKT nozzle kit provides extraction capacity to standard welding guns. It is designed for mounting the extraction hose on top of the welding gun. Hose dimension is 8 ft. (2.5 m) x 1 in. (25 mm) O.D. Includes a 1-3/4 in. (45 mm) O.D. hose adapter.

NKC Nozzle Kit - Order K2389-4

The NKC nozzle kit provides extraction capacity to standard welding guns by circular extraction which attaches and wraps around the gun nozzle. Hose dimension is 8 ft. (2.5 m) x 1 in. (25 mm) O.D. Includes a 1-3/4 in. (45 mm) O.D. hose adapter.

Other Nozzles

A variety of other nozzles are available. See www.LincolnElectric.com or contact your local Lincoln Electric Authorized Distributor for more details.

Fume Extraction Guns

To extract welding fumes, Lincoln Electric's Magnum® 400XA GMAW gun and the 350A, 500A FCAW-SS guns can be connected to the X-TRACTOR 5A.

Replacement Filter - Order KP2061-1

Connection Kit for X-Tractor 5A - Order K3969-1

Includes:

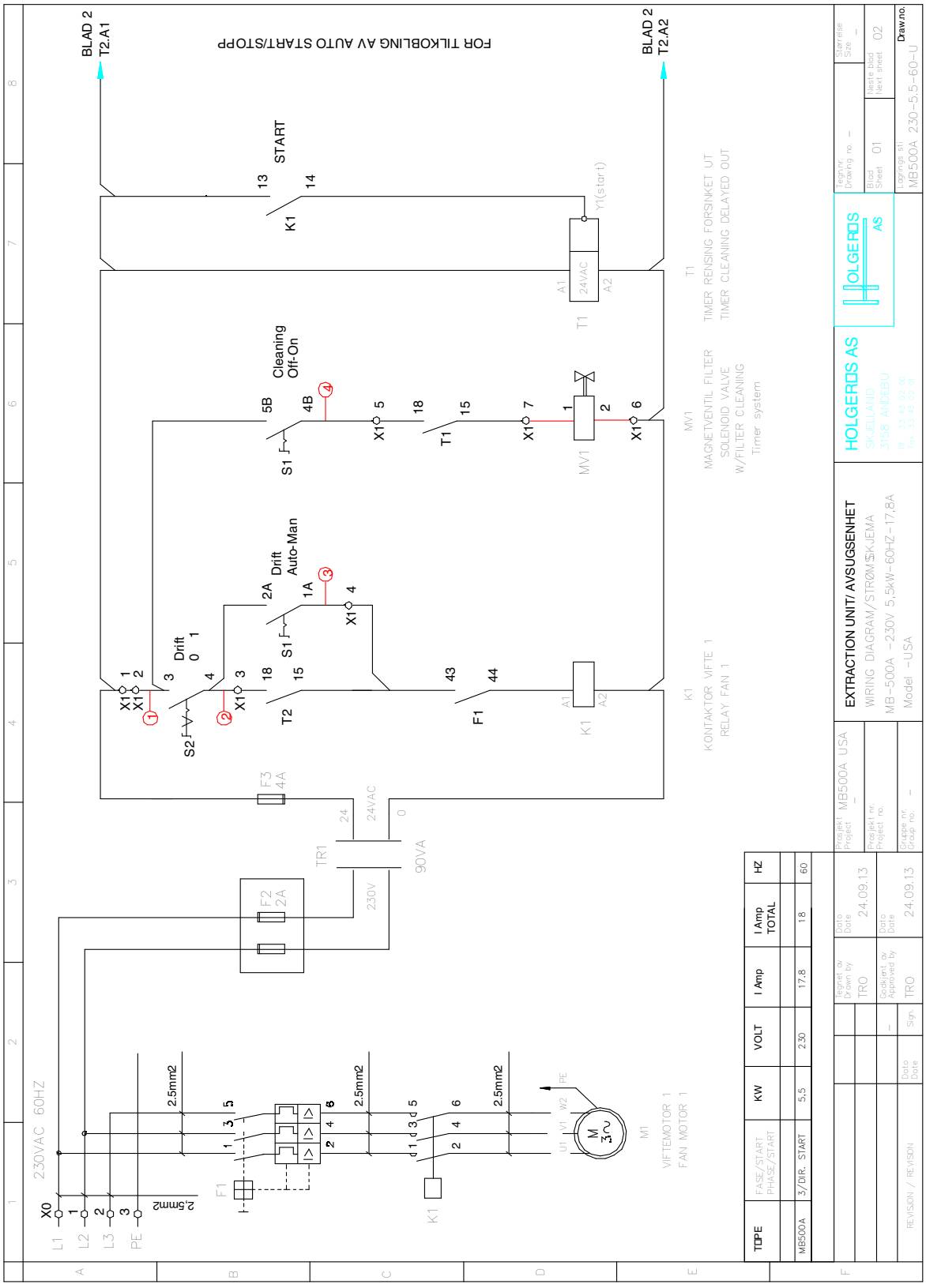
1 - S26767-42	4" Sleeve
1 - S26767-31	Reducer 4" to 3" Steel
2 - S26767-41	3" Sleeve
2 - M17321-8	VV-50 Valve
4 - S20591-8	Hose Adapter 1.75" to 2.0"

TROUBLESHOOTING GUIDE

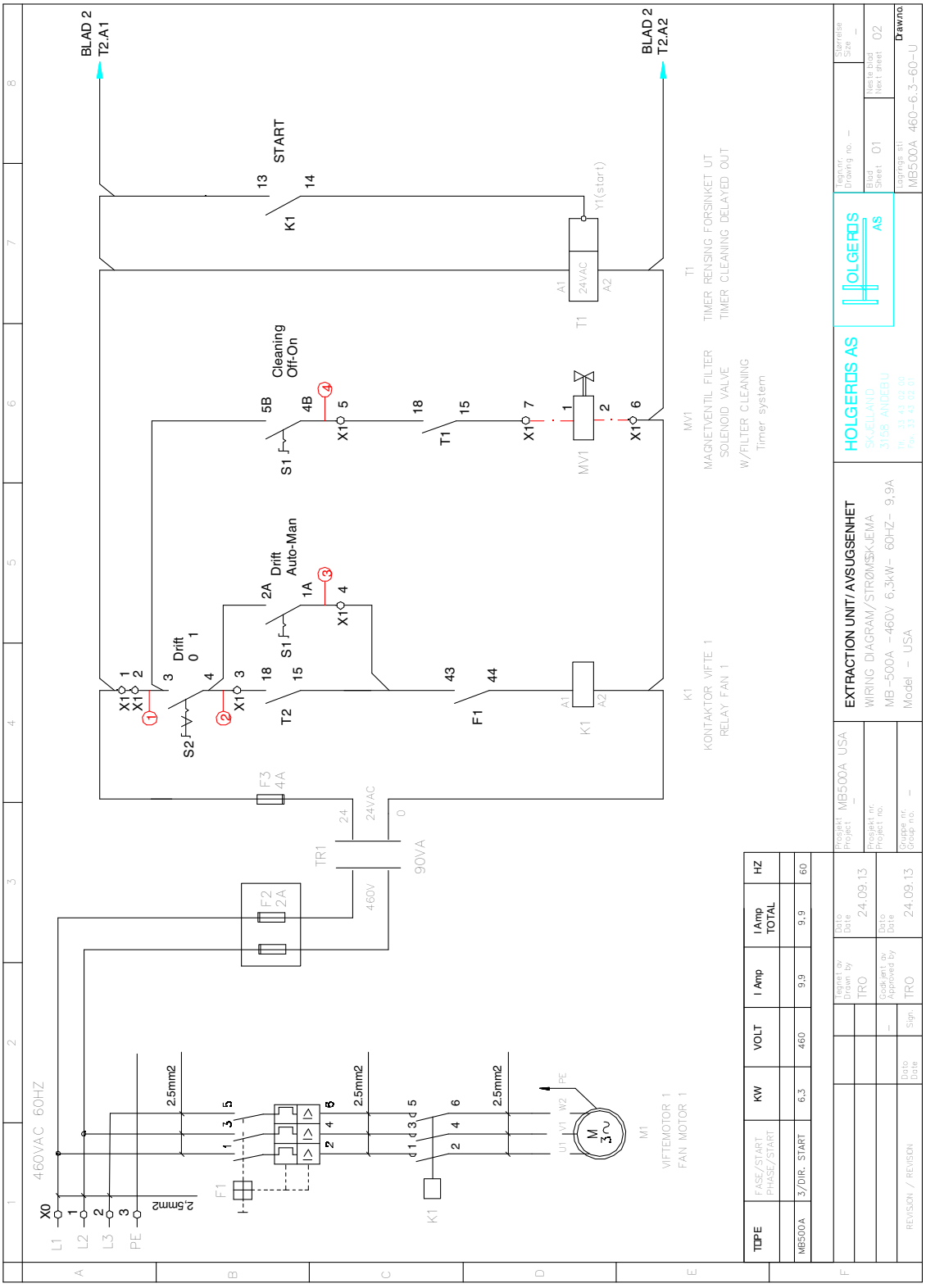
Service and Repair should only be performed by Lincoln Electric Factory Trained Personnel. Unauthorized repairs performed on this equipment may result in danger to the technician and machine operator and will invalidate your factory warranty. For your safety and to avoid ELECTRICAL SHOCK, please observe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

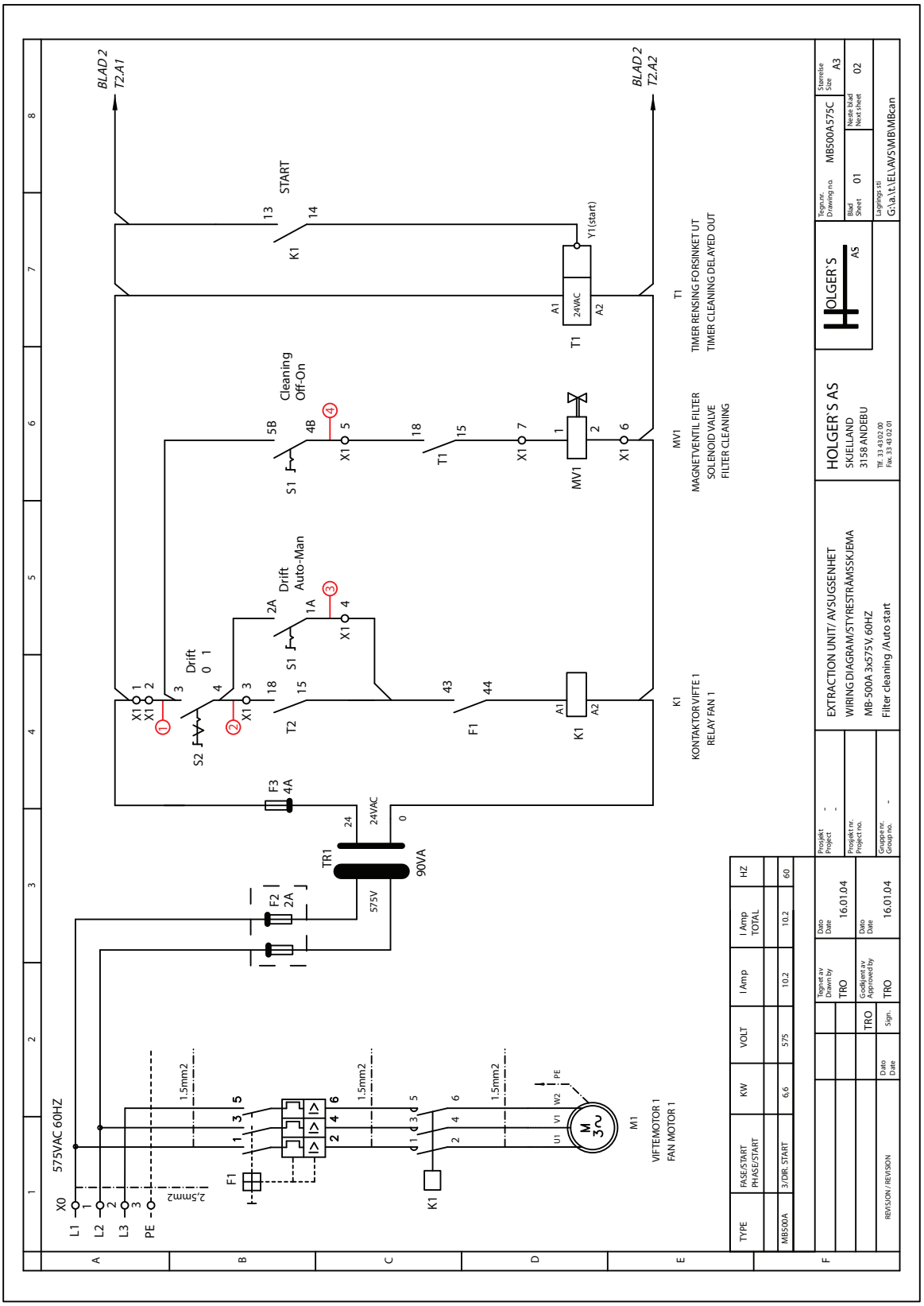
PROBLEMS / SYMPTOM(S)	POSSIBLE CAUSE(S)	RECOMMENDED COURSE(S) OF ACTION
POOR SUCTION.	Filter clogged.	Clean the filter. Replace if necessary.
	Hoses are too long.	Shorten hoses.
	Damaged hoses.	Replace hoses.
	Too many nozzles connected simultaneously.	Use fewer nozzles.
	Motor running in wrong direction.	Change position of any 2 input phases at connection to machine.
	Leakage in the system.	Find the leakage and repair.
MOTOR PROTECTION CUTTING OUT.	Motor running on two phases.	Call for an electrician.
	Low voltage on one or several phases.	Check voltage during operation.
	Extracting too much air.	Close Outlets.
FILTER IS NOT CLEANED.	Switch in OFF-mode.	Turn to ON-mode.
	Cleaning intervals improperly set.	Adjust intervals. (Shorter)
	Solenoid valve defect or without electrical supply.	Contact your local Lincoln Authorized Field Service Facility.
	Rotating cleaning device broken.	Contact your local Lincoln Authorized Field Service Facility.
	Automatic filter cleaning shut off.	Activate on front switch.
UNIT DOES NOT START.	No electrical supply.	Check connections.
	Auto start switch in AUTO-mode.	Turn to MAN-mode
	No connection with external start switches.	Check connections.
NO OFF-LINE CLEANING.	Internal timer is incorrectly set.	Pre-set the timer.
	No electrical supply to the timer.	Check electrical supply.

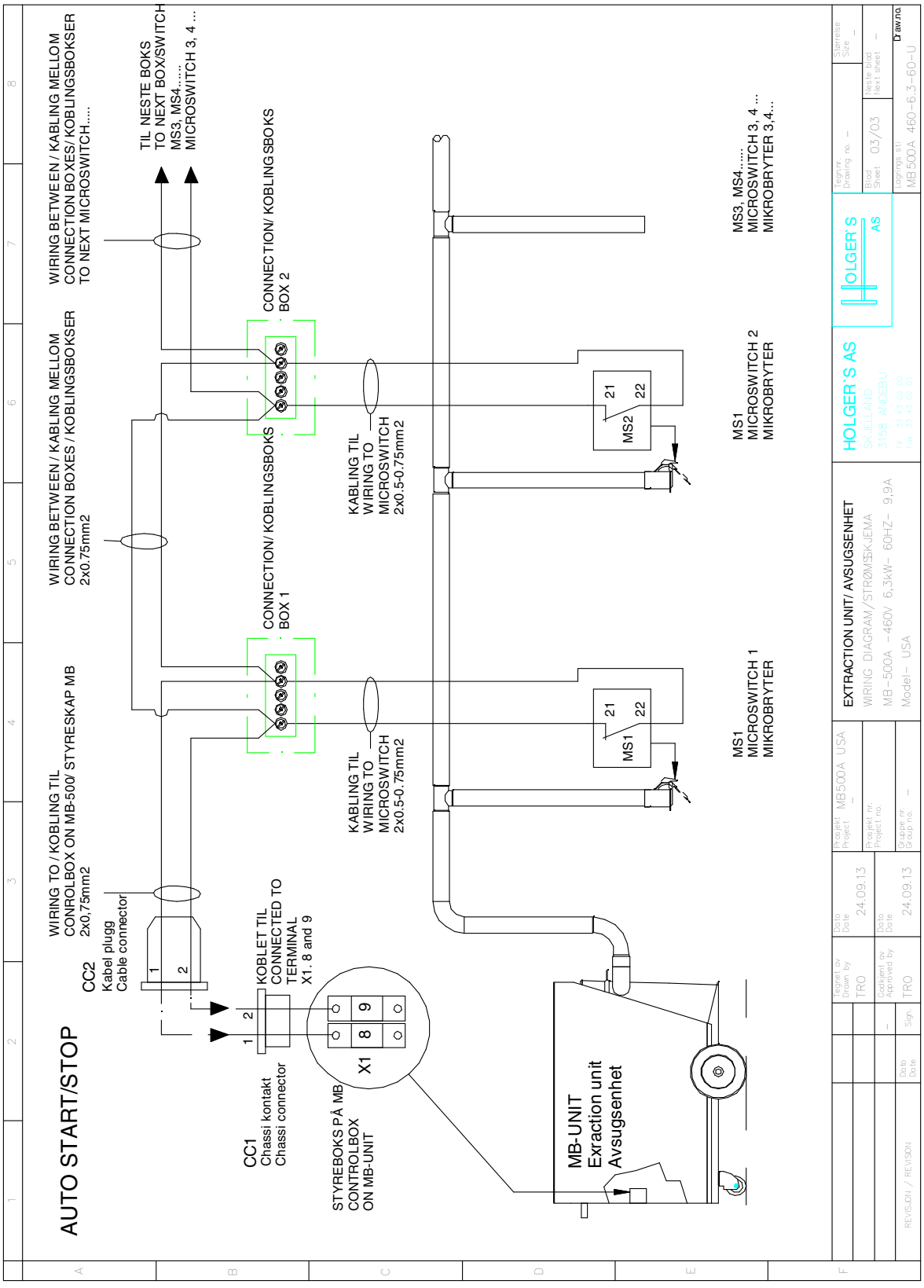
If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your Lincoln Authorized Service Facility for technical troubleshooting assistance before you proceed.
WWW.LINCOLNELECTRIC.COM/LOCATOR

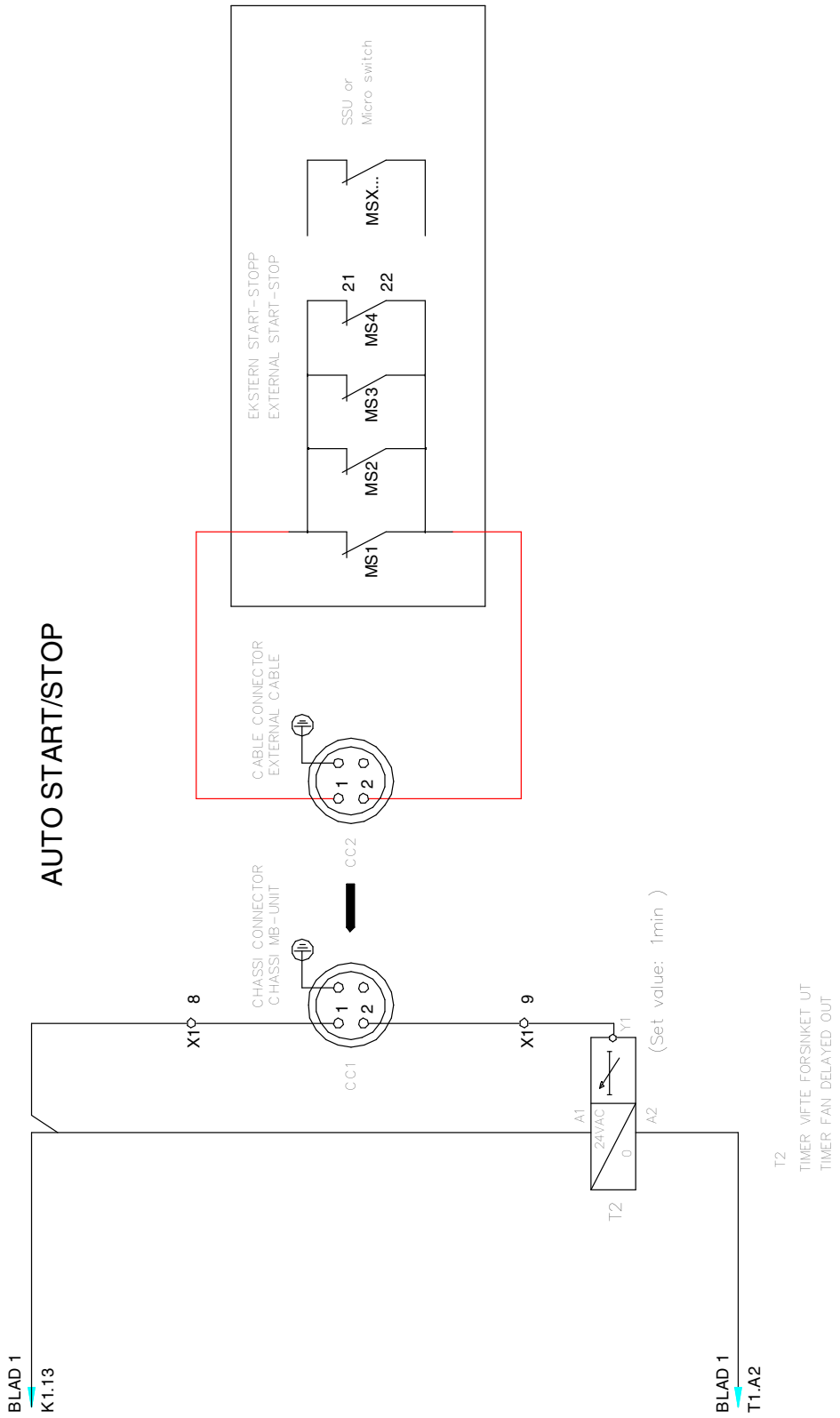


NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment code number.


BLAD 2
T2.A1
BLAD 2
T2.A2
START
Cleaning
Off-On
Drift
Auto-Man
Drift
460VAC 60HZ
2,5mm2
2.5mm2
24VAC
90VA
460V
EXTRACTION UNIT/AVSUGSENHET
WIRING DIAGRAM/STRØMSKJEMA
MB -500A -460V 6,3kW- 60HZ- 9,9A
Model - USA
HOLGERØS AS
SKJELLAND
3158 ANDEBU
HOLGERØS
AS
MB500A
3/DIR. START
6,3
460
9,9
9,9
60
MB500A 460--6,3-60--U


BLAD 2
T2.A1
BLAD 2
T2.A2
START
13
14
K1
Y1(start)
A1
24VAC
A2
T1
T1
TIMER RENSING FORSINKET UT
TIMER CLEANING DELAYED OUT
Cleaning
Off-On
5B
4B
4
S1
X1 5
18
T1
15
X1 7
1
MV1
2
X1 6
MV1
MAGNETVENTIL FILTER
SOLENOID VALVE
FILTER CLEANING
Drift
Auto-Man
2A
1A
3
S1
X1 4
Drift
0 1
X1 1
X1 2
1
3
4
S2
X1 3
2
18
15
T2
43
F1
44
A1
K1
A2
K1
KONTAKTOR VIFTE 1
RELAY FAN 1
F3
4A
24
24VAC
0
TR1
90VA
575V
F2
2A
X0
575VAC 60HZ
L1
L2
L3
PE
2,5mm2
1,5mm2
F1
K1
M1
VIFTEMOTOR 1
FAN MOTOR 1
TYPE
MB50DA
FASE/START
PHASE/START
3/DIR. START
KW
6,6
VOLT
575
I Amp
10,2
I Amp
TOTAL
10,2
HZ
60
REVISJON / REVISION
Dato
Date
Sign.
TRO
Tegnet av
Drawn by
TRO
Godkjent av
Approved by
TRO
Dato
Date
16.01.04
Dato
Date
16.01.04
Prosjekt
Project
-
Prosjekt nr.
Project no.
Gruppe nr.
Group no.
-
EXTRACTION UNIT/ AVSUGSENHET
WIRING DIAGRAM/STYRESTRÅMSSKJEMA
MB-500A 3x575V, 60HZ
Filter cleaning /Auto start
HOLGER`S AS
SKJELLAND
3158 ANDEBU
Tlf. 33 43 02 00
Fax. 33 43 02 01
HOLGER`S
AS
Tegn.nr.
Drawing no.
MB500A575C
Størrelse
Size
A3
Blad
Sheet
01
Neste blad
Next sheet
02
Lagrings sti
G:\ia.lt\.ELIAVS\MB\MBcan


AUTO START/STOP
WIRING TO / KOBLING TIL
CONROLBOX ON MB-500/ STYRESKAP MB
2x0,75mm2
CC2
Kabel plugg
Cable connector
KOBLET TIL
CONNECTED TO
TERMINAL
X1. 8 and 9
CC1
Chassi kontakt
Chassi connector
STYREBOKS PÅ MB
CONTROLBOX
ON MB-UNIT
X1
WIRING BETWEEN / KABLING MELLOM
CONNECTION BOXES / KOBLINGSBOKSER
2x0.75mm2
WIRING BETWEEN / KABLING MELLOM
CONNECTION BOXES/ KOBLINGSBOKSER
TO NEXT MICROSWITCH.....
TIL NESTE BOKS
TO NEXT BOX/SWITCH
MS3, MS4.....
MICROSWITCH 3, 4 ...
CONNECTION/ KOBLINGSBOKS
BOX 1
CONNECTION/ KOBLINGSBOKS
BOX 2
KABLING TIL
WIRING TO
MICROSWITCH
2x0.5-0.75mm2
KABLING TIL
WIRING TO
MICROSWITCH
2x0.5-0.75mm2
MS1
MS2
MS1
MICROSWITCH 1
MIKROBRYTER
MS1
MICROSWITCH 2
MIKROBRYTER
MS3, MS4.....
MICROSWITCH 3, 4 ...
MIKROBRYTER 3,4...
MB-UNIT
Exraction unit
Avsugsenhet
EXTRACTION UNIT/ AVSUGSENHET
WIRING DIAGRAM/STRØMSKJEMA
MB-500A - 460V 6,3kW- 60HZ- 9,9A
Model- USA
HOLGER`S AS
SKJELAND
3158 ANDEBU
HOLGER`S AS
MB500A 460-6.3-60-U
Drawn by TRO
Date 24.09.13
Approved by TRO
Date 24.09.13
REVISJON / REVISION


AUTO START/STOP
SSU or
Micro switch
MSX...
EKSTERN START-STOPP
EXTERNAL START-STOP
21
22
MS4
MS3
MS2
MS1
CABLE CONNECTOR
EXTERNAL CABLE
CC2
CHASSI CONNECTOR
CHASSI MB-UNIT
CC1
X1
8
X1
9
Y1
(Set value: 1min)
A1
24VAC
0
A2
T2
T2
TIMER VIFTE FORSINKET UT
TIMER FAN DELAYED OUT
BLAD 1
K1.13
BLAD 1
T1.A2

			
WARNING	● Do not touch electrically live parts or electrode with skin or wet clothing. ● Insulate yourself from work and ground.	● Keep flammable materials away.	● Wear eye, ear and body protection.
Spanish **AVISO DE PRECAUCION**	● No toque las partes o los electrodos bajo carga con la piel o ropa mojada. ● Aislese del trabajo y de la tierra.	● Mantenga el material combustible fuera del área de trabajo.	● Protéjase los ojos, los oídos y el cuerpo.
French **ATTENTION**	● 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.	● Gardez à l'écart de tout matériel inflammable.	● Protégez vos yeux, vos oreilles et votre corps.
German **WARNUNG**	● Berühren Sie keine stromführenden Teile oder Elektroden mit Ihrem Körper oder feuchter Kleidung! ● Isolieren Sie sich von den Elektroden und dem Erdboden!	● Entfernen Sie brennbarres Material!	● Tragen Sie Augen-, Ohren- und Körperschutz!
Portuguese **ATENÇÃO**	● Não toque partes elétricas e electrodos com a pele ou roupa molhada. ● Isole-se da peça e terra.	● Mantenha inflamáveis bem guardados.	● Use proteção para a vista, ouvido e corpo.
Japanese **注意事項**	● 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。	● 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。	● 目、耳及び身体に保護具をして下さい。
Chinese **警 告**	● 皮肤或濕衣物切勿接觸帶電部件及銲條。 ● 使你自己與地面和工件絕緣。	● 把一切易燃物品移離工作場所。	● 佩戴眼、耳及身體勞動保護用具。
Korean **위 험**	● 전도체나 용접봉을 젖은 헝겁 또는 피부로 절대 접촉치 마십시요. ● 모재와 접지를 접촉치 마십시요.	● 인화성 물질을 접근 시키지 마시요.	● 눈, 귀와 몸에 보호장구를 착용하십시요.
Arabic **تحذير**	● لا تلمس الاجزاء التي يسري فيها التيار الكهربائي أو الالكترود بجلد الجسم أو بالملابس المبللة بالماء. ● ضع عازلا على جسمك خلال العمل.	● ضع المواد القابلة للاشتعال في مكان بعيد.	● 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.

			
● Keep your head out of fumes. ● Use ventilation or exhaust to remove fumes from breathing zone.	● Turn power off before servicing.	● Do not operate with panel open or guards off.	**WARNING**
● Los humos fuera de la zona de respiración. ● Mantenga la cabeza fuera de los humos. Utilice ventilación o aspiración para gases.	● Desconectar el cable de alimentación de poder de la máquina antes de iniciar cualquier servicio.	● No operar con panel abierto o guardas quitadas.	Spanish **AVISO DE PRECAUCION**
● Gardez la tête à l'écart des fumées. ● Utilisez un ventilateur ou un aspirateur pour ôter les fumées des zones de travail.	● Débranchez le courant avant l'entretien.	● N'opérez pas avec les panneaux ouverts ou avec les dispositifs de protection enlevés.	French **ATTENTION**
● Vermeiden Sie das Einatmen von Schweibrauch! ● Sorgen Sie für gute Be- und Entlüftung des Arbeitsplatzes!	● Strom vor Wartungsarbeiten abschalten! (Netzstrom völlig öffnen; Maschine anhalten!)	● Anlage nie ohne Schutzgehäuse oder Innenschutzverkleidung in Betrieb setzen!	German **WARNUNG**
● Mantenha seu rosto da fumaça. ● Use ventilação e exhaustão para remover fumo da zona respiratória.	● Não opere com as tampas removidas. ● Desligue a corrente antes de fazer serviço. ● Não toque as partes elétricas nuas.	● Mantenha-se afastado das partes moventes. ● Não opere com os paineis abertos ou guardas removidas.	Portuguese **ATENÇÃO**
● 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。	● 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下さい。	● 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**
●頭部遠離煙霧。 ●在呼吸區使用通風或排風器除煙。	●維修前切斷電源。	●儀表板打開或沒有安全罩時不準作業。	Chinese **警 告**
● 얼굴로부터 용접가스를 멀리하십시요. ● 호흡지역으로부터 용접가스를 제거하기 위해 가스제거기나 통풍기를 사용하십시요.	● 보수전에 전원을 차단하십시요.	● 판넬이 열린 상태로 작동치 마십시요.	Korean **위 험**
● ابعد رأسك بعيداً عن الدخان. ● استعمل التهوية أو جهاز ضغط الدخان للخارج لكي تبعد الدخان عن المنطقة التي تتنفس فيها.	● اقطع التيار الكهربائي قبل القيام بأية صيانة.	● لا تشغل 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説明以及應該使用的銀捍材料，並請遵守貴方的有関勞動保護規定。

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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