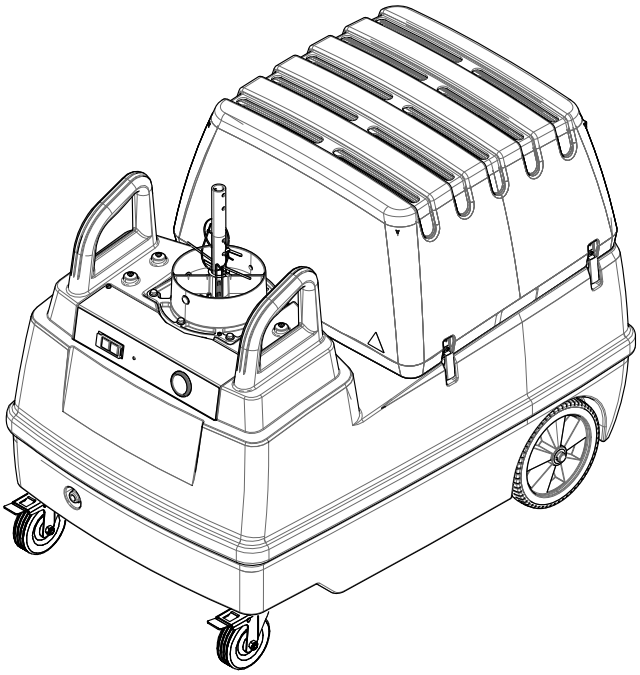
Operator's Manual

Mobiflex® 200-M and 400-MS



For use with machines having Code Numbers:

Mobiflex 200-M

12325 Filter Base Unit w/ MERV 14 filter (120/1/60)
12513 Filter Base Unit w/ MERV 16 filter (120/1/60)
12329 Filter Base Unit w/ MERV 14 filter (230/1/50)

Mobiflex 400-MS

12326 Filter Base Unit w/ MERV 14 filter (115/1/60)|
12561 Filter Base Unit w/ MERV 16 filter (115/1/60)
12330 Filter Base Unit w/ MERV 14 filter (230/1/50)

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)

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

IM10335-A | Issue Date Jun-18

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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 LINCOLN ELECTRIC PRODUCT.

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 Material Safety Data Sheet (MSDS) 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

WARNINGS

Read all instructions before using MINIFLEX

⚠ WARNING

Important safety instructions – Save these instructions

When using an electrical appliance, basic precautions should always be followed, including the following:

- **The use of this machine in conjunction with the pick-up of ingredients in weld fume has not been investigated by CSA Group.**
- **This fume extraction unit shall NOT be used to pick up anything that is hot or burning.**
- **Use only as described in this manual. Use only manufacturer's recommended attachments.**
- **Do not use with damaged cord or plug. If appliance is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center.**
- **Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners. Do not run appliance over cord. Keep cord away from heated surfaces.**
- **Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.**
- **Do not handle plug or appliance with wet hands.**
- **Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.**
- **Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.**
- **Turn off all controls before unplugging.**
- **Do not use to pick up flammable or combustible liquids, such as gasoline, or use in areas where they may be present.**
- **Connect to a properly grounded outlet only. See Grounding Instructions.**

GROUNDING INSTRUCTIONS

⚠ WARNING

A qualified electrician should be consulted if there is any doubt as to whether an outlet box is properly grounded.

This appliance must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with

⚠ DANGER

Improper connection of the equipment-grounding conductor can result in a risk of electric shock.

The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

⚠ 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.

⚠ WARNING

To Reduce The Risk Of Electric Shock – Do not use on wet surfaces. Do not expose to rain. Store indoors.

⚠ CAUTION

To Reduce The Risk Of Injury From Moving Parts – Unplug Before Servicing

⚠ WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK – UNPLUG BEFORE CLEANING OR SERVICING.

⚠ WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

WARNINGS

CALIFORNIA PROPOSITION 65 WARNINGS

DIESEL ENGINES

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

GASOLINE ENGINES

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

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACE-MAKER 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.

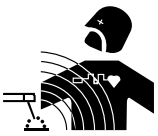
1.f. Do not put your hands near the engine fan. Do not attempt to override the governor or idler by pushing on the throttle control rods while the engine is running.

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.

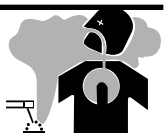


4.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing open arc welding. Headshield and filter lens should conform to ANSI Z87. I standards.

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 with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**

5. b. 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.

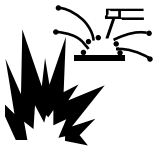
5.c. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

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 material safety data sheet (MSDS) and follow your employer's safety practices. MSDS forms are available from your welding distributor or from the manufacturer.

5.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.

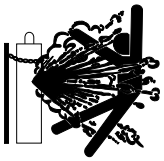
6.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This 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, 1235 Jefferson Davis Highway, Arlington, VA 22202.

FOR ELECTRICALLY POWERED EQUIPMENT.

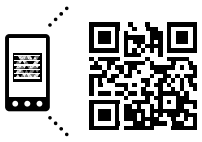


8.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.

8.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer's recommendations.

8.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

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



Welding Safety Interactive Web Guide for mobile devices

Get the free mobile app at
http://gettag.mobi

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

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PARTS LIST .....PARTS.LINCOLNELECTRIC.COM

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

TECHNICAL SPECIFICATIONS -
Mobiflex 200-M Filter Base Unit w/ MERV 14 filter (120/1/60) - K1653-4
Mobiflex 200-M Filter Base Unit w/ MERV 16 filter (120/1/60) - K1653-5
Mobiflex 200-M Filter Base Unit w/ MERV 14 filter (230/1/50) - K2497-12

GENERAL	
INPUT	K1653-4, K1635-5: 120V/1~/60HZ K2497-12: 230V/1~/50HZ
MOTOR POWER	0.75 KW (1 HP)

PHYSICAL DIMENSIONS	
LENGTH (A)	47.6 IN. (1,210mm)
WIDTH (B)	31.9 IN. (810mm)
HEIGHT (C)	36.5 IN. (927mm)
NET WEIGHT	MOBIFLEX 200-M W/ MERV 14 FILTER: 200 LBS. (91 KGS) MOBIFLEX 200-M w/ MERV 16 FILTER: 209 LBS. (95 KGS)

OPERATING CAPACITY	
EXTRACTOR TYPE	LOW VACUUM; HIGH VOLUME
AIRFLOW RATE	MAX. 800 CFM (1,360 M^3/H)

SOUND LEVEL	
120V & 230V	69 DB(A) (ACCORDING TO ISO 3746)

INPUT POWER CABLE
20 FT. (6 M)

FILTER TYPE	
MOBIFLEX 200-M W/ MERV 14 FILTER:	DISPOSABLE CELLULOSE LONGLIFE® FILTER CARTRIDGE WITH PRECOAT
MOBIFLEX 200-M W/ MERV 16 FILTER:	DISPOSABLE CELLULOSE / POLYESTER BLEND LONGLIFE® FILTER CARTRIDGE

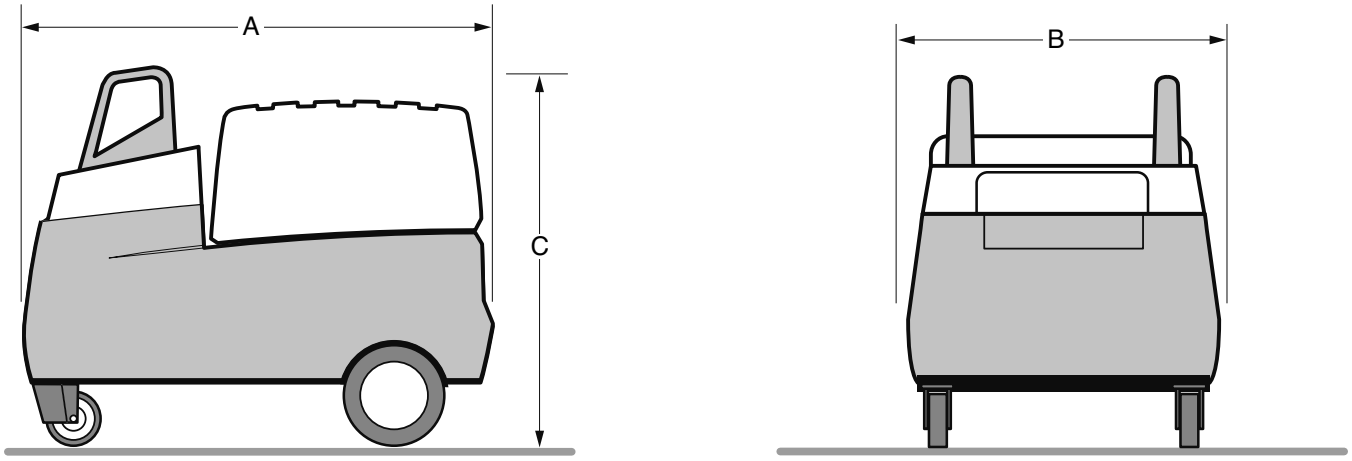
FILTER CLASS (ACCORDING TO ASHRAE 52.2)	
MOBIFLEX 200-M UNTREATED	MERV 11
MOBIFLEX 200-M TREATED*	MERV 14
MOBIFLEX 200-M	MERV 16

*Shipped with standard unit

FILTER SURFACE AREA
538 FT^2 (50 M^2)

AMBIENT CONDITIONS	
MINIMUM TEMPERATURE	41ºF (5ºC)
MAXIMUM TEMPERATURE	113ºF (45ºC)
MAXIMUM RELATIVE HUMIDITY	80%

FIGURE A.1



TECHNICAL SPECIFICATIONS -
Mobiflex 400-MS Filter Base Unit with MERV 14 filter and self-cleaning filter cartridge (115/1/60) - K1741-3
Mobiflex 400-MS Filter Base Unit with MERV 16 filter and self-cleaning filter cartridge (115/1/60) - K1741-4
Mobiflex 400-MS Filter Base Unit with MERV 14 filter and self-cleaning filter cartridge (230/1/50) - K2497-14

GENERAL	
INPUT	K1741-3, K1741-4 115V/1~/60HZ K2497-14 230V/1~/50HZ
MOTOR POWER	0.75 KW (1 HP)

PHYSICAL DIMENSIONS	
LENGTH (A)	48.0 IN. (1,219mm)
WIDTH (B)	32.1 IN. (816mm)
HEIGHT (C)	40.9 IN. (1,038mm)
NET WEIGHT	MOBIFLEX 400-MS W/ MERV 14 FILTER: 220 LBS. (100 KGS) MOBIFLEX 400-MS W/ MERV 16 FILTER: 229 LBS. (104 KGS)

OPERATING CAPACITY	
EXTRACTOR TYPE	LOW VACUUM; HIGH VOLUME
AIRFLOW RATE	MAX. 735 CFM (1,250 M^3/H)

SOUND LEVEL	
120V & 230V	69 DB(A) (ACCORDING TO ISO 3746)

INPUT POWER CABLE
20 FT. (6 M)

FILTER TYPE	
MOBIFLEX 400-MS W/ MERV 14 FILTER:	SELF-CLEANING CELLULOSE/POLYESTER BLEND LONGLIFE® FILTER CARTRIDGE WITH PRECOAT
MOBIFLEX 400-MS W/ MERV 16 FILTER:	SELF-CLEANING CELLULOSE / POLYESTER BLEND LONGLIFE® FILTER CARTRIDGE

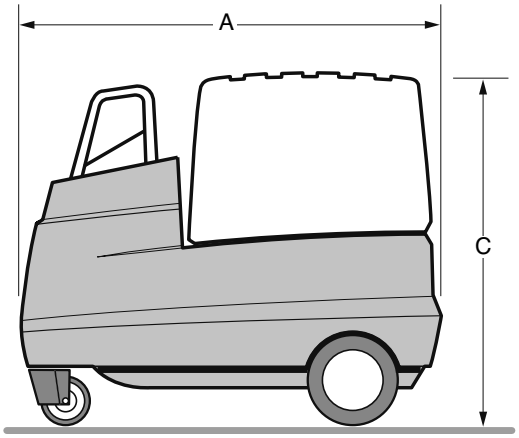
FILTER CLASS (ACCORDING TO ASHRAE 52.2)	
MOBIFLEX 400-MS UNTREATED	MERV 11
MOBIFLEX 400-MS TREATED*	MERV 14
MOBIFLEX 400-MS	MERV 16

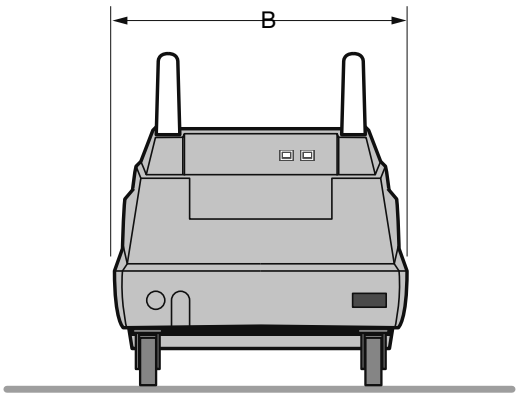
*Shipped with standard unit

FILTER SURFACE AREA
325 FT^2 (30 M^2)

AMBIENT CONDITIONS	
MINIMUM TEMPERATURE	41ºF (5ºC)
MAXIMUM TEMPERATURE	113ºF (45ºC)
MAXIMUM RELATIVE HUMIDITY	80%

COMPRESSED AIR CONNECTION	
COMPRESSED AIR CONNECTION SUPPLY:	70-120 PSI (5-8 BAR), REGULATED DOWN VIA SUPPLIED REGULATOR (FACTORY SET) TO 65-70 PSI (4.5-5 BAR)
REQUIRED COMPRESSED AIR QUALITY:	DRY AND OIL-FREE ACCORDING TO ISO 8573-3 CLASS 6
COMPRESSED AIR CONSUMPTION:	MAX. 2.1 SCFM (60 NL/MIN.) (DEPENDING ON THE DEGREE OF SATURATION OF THE FILTER)
CLEANING CYCLE TIME	60 MIN.

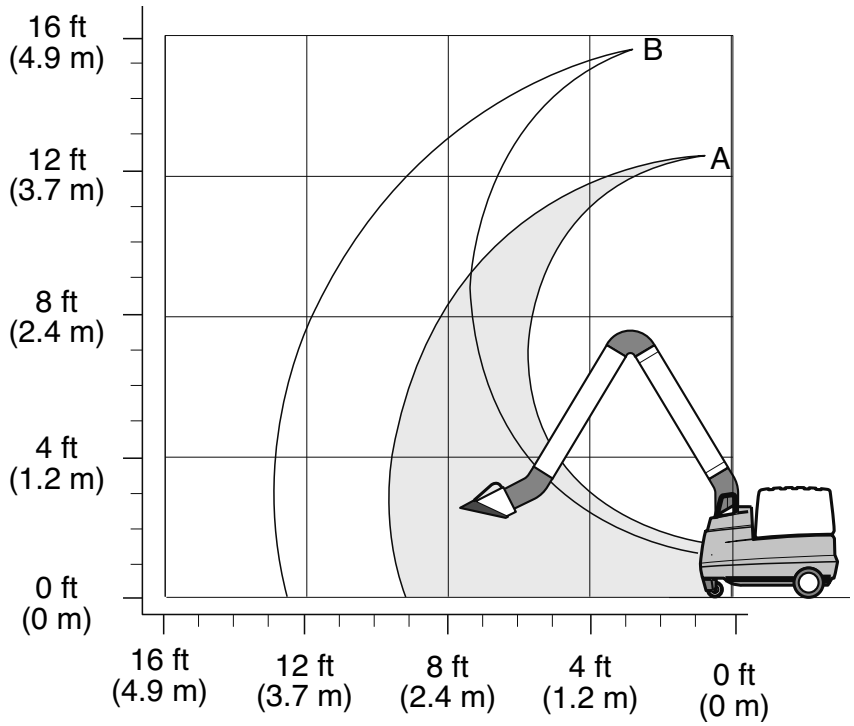




TECHNICAL SPECIFICATIONS - LFA 3.1 / 4.1 EXTRACTION ARMS

LFA 3.1 / 4.1 EXTRACTION ARMS						
MODEL	**PRODUCT NUMBER**	**ARM LENGTH**	**REACH**	**NET WEIGHT**	**DIAMETER**	**LAMP & ARC SENSOR KIT**
LFA 3.1 Mobile Manual	K2633-5	10 FT. (3 M)	SEE FIGURE A.2 (A)	32.8 LBS. (14.9 KG)	Ø 8 IN. (203 MM)	NOT APPLICABLE
LFA 4.1 Mobile Manual	K2633-7	13 FT. (4 M)	SEE FIGURE A.2 (B)	37.3 LBS. (16.9 KG)	Ø 8 IN. (203 MM)	NOT APPLICABLE
LFA 3.1 Mobile Automatic	K2633-6	10 FT. (3 M)	SEE FIGURE A.2 (A)	33.5 LBS. (15.2 KG)	Ø 8 IN. (203 MM)	INTEGRATED
LFA 4.1 Mobile Automatic	K2633-8	13 FT. (4 M)	SEE FIGURE A.2 (B)	38 LBS. (17.2 KG)	Ø 8 IN. (203 MM)	INTEGRATED

FIGURE A.2



Read entire installation section before starting installation.

Safety Precautions

⚠ WARNING

ELECTRIC SHOCK can kill.



- **Only qualified personnel should perform this installation.**
- **Turn the input power OFF and unplug the machine from the receptacle before working on this equipment.**
- **Insulate yourself from the work and ground.**
- **Always connect the machine to a power supply grounded according to the National Electrical Code and local codes.**

⚠ CAUTION

TIPPING Hazard

Unit is to be used on flat surface only.



The extraction arm must be fastened in an upright and folded position during transport of the unit.

GENERAL DESCRIPTION

This instruction manual describes six base units and four types of extraction arms:

- ***K1653-4 & K2497-12 Mobiflex 200-M Base Unit*** (mobile filter unit with disposable filter cartridge - filter class MERV 11 (untreated); MERV 14 (treated))
- ***K1653-5 Mobiflex 200-M Base Unit*** (mobile filter unit with high efficiency disposable filter cartridge - filter class MERV 16)
- ***K1741-3 & K2497-14 Mobiflex 400-MS Base Unit*** (mobile filter unit with self-cleaning filter cartridge - filter class MERV 11 (untreated); MERV 14 (treated))
- ***K1741-4 Mobiflex 400-MS Base Unit*** (mobile filter unit with self-cleaning filter cartridge - filter class MERV 16)
- ***K2633-5 LFA 3.1 Mobile Manual*** (10 ft. extraction arm)
- ***K2633-7 LFA 4.1 Mobile Manual*** (13 ft. extraction arm)
- ***K2633-6 LFA 3.1 Mobile Automatic*** (10 ft. extraction arm with integrated Lamp & Arc Sensor Kit)
- ***K2633-8 LFA 4.1 Mobile Automatic*** (13 ft. extraction arm with integrated Lamp & Arc Sensor Kit)

Mobiflex 200-M Base Unit w/ MERV 14 Filter

The K1653-4 & K2497-12 Mobiflex 200-M Base Unit are mobile filter units with integrated fan that provide extraction and filtration for use with a flexible extraction arm or (optional) hose.

The Mobiflex 200-M Base Unit features an aluminum prefilter and a square disposable cellulose LongLife® filter cartridge. This LongLife® filter cartridge is provided with a precoat (ExtraCoat®) to extend the lifespan and increase initial operating efficiency of the filter.

The Mobiflex 200-M Base Unit is a portable unit suitable for use in relatively small facilities or near sources of welding fume without a fixed location.

The Mobiflex 200-M Base Unit with Flexible Extraction Arm is used for extraction of fume and particulate which is released during the most common welding processes, such as:

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

The Mobiflex 200-M Base Unit is designed for light to medium duty, intermittent welding applications as indicated above.The Mobiflex 200-M filter is recommended for consumable use of approximately*:

- 1,500 lbs (700 kg) GMAW or GTAW
- 1,100 lbs (500 kg) MMA or SMAW or FCAW

* Variables such as coatings (e.g. oil), base material, weld process, humidity and procedures can affect filter life and performance.

Mobiflex 200-M Base Unit w/ MERV 16 Filter

The K1653-5 Mobiflex 200-M Base Unit is a mobile filter unit with integrated fan that provide extraction and filtration for use with a flexible extraction arm or (optional) hose.

The Mobiflex 200-M Base Unit features an aluminum prefilter and a high efficiency disposable cellulose/polyester blend LongLife® filter cartridge.

The Mobiflex 200-M is a portable unit suitable for use in relatively small facilities or near sources of weld fume without a fixed location.

The Mobiflex 200-M Base Unit with Flexible Extraction Arm is used for extracting and filtering fume which is released during the most common welding processes, such as:

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

The Mobiflex 200-M is designed for light to medium duty, intermittent welding applications as indicated above.

The Mobiflex 200-M filter is recommended for consumable use of approximately*:

- 500 lbs (250 kg) GMAW or GTAW
- 385 lbs (175 kg) MMA or SMAW or FCAW

* Variables such as coatings (e.g. oil), base material, weld process and procedures can affect filter life and performance.

Mobiflex 400-MS Base Unit w/ MERV 14 filter

The K1741-1 Mobiflex 400-MS Base Unit is a mobile filter unit with integrated fan that provides extraction and filtration for use with a flexible extraction arm or optional hose.

The Mobiflex 400-MS Base Unit features a steel mesh prefilter and a round cellulose LongLife filter cartridge. This LongLife filter cartridge is provided with a precoat (ExtraCoat) to extend the lifespan and increase initial operating efficiency of the filter. A separate MSDS sheet for the ExtraCoat is included with the instruction manual package.

The Mobiflex 400-MS Base Unit is provided with a RotaPulse system for automatic cleaning of the LongLife filter cartridge.

The Mobiflex 400-MS is a portable unit suitable to be used in relatively small facilities or near sources of pollution without a fixed location.

The Mobiflex 400-MS Base Unit with Flexible Extraction Arm is used for extracting and filtering fume which is released during the most common welding processes, such as:

- MIG/MAG solid wire (GMAW)
- MIG/MAG flux cored wire (FCAW)
- TIG (GTAW) welding
- stick welding (MMA or SMAW)
- autogeneous welding

The Mobiflex 400-MS is designed for intermittent or continuous welding applications as indicated above.

The Mobiflex 400-MS filter is recommended for annual consumable use of approximately*):

- 2,750 kg (6,000 lbs) GMAW or FCAW or GTAW
- 1,800 kg (4,000 lbs) MMA or SMAW or autogeneous

* Variables such as coatings (e.g. oil), base material, weld process, humidity and procedures can affect filter life and performance.

Mobiflex 400-MS/HE Base Unit W/ MERV 16 filter

The K1741-2 Mobiflex 400-MS/HE Base Unit is a mobile filter unit with integrated fan that provides extraction and filtration for use with a flexible extraction arm or optional hose.

The Mobiflex 400-MS/HE Base Unit features a steel mesh prefilter and a high efficiency round cellulose/polyester blend LongLife filter cartridge.

The Mobiflex 400-MS/HE Base Unit is provided with a RotaPulse system for automatic cleaning of the LongLife filter cartridge.

The Mobiflex 400-MS/HE is a portable unit suitable to be used in relatively small facilities or near sources of pollution without a fixed location.

The Mobiflex 400-MS/HE Base Unit with Flexible Extraction Arm is used for extracting and filtering fume which is released during the most common welding processes, such as:

- MIG/MAG solid wire (GMAW)
- MIG/MAG flux cored wire (FCAW)
- TIG (GTAW) welding
- stick welding (MMA or SMAW)
- autogeneous welding

The Mobiflex 400-MS/HE is designed for intermittent or continuous welding applications as indicated above.

The Mobiflex 400-MS/HE filter is recommended for annual consumable use of approximately*):

- 250 kg (550 lbs) GMAW or FCAW or GTAW
- 175 kg (385 lbs) MMA or SMAW or autogeneous

* Variables such as coatings (e.g. oil), base material, weld process and procedures can affect filter life and performance.

LFA 3.1 / 4.1 Mobile Manual / Automatic

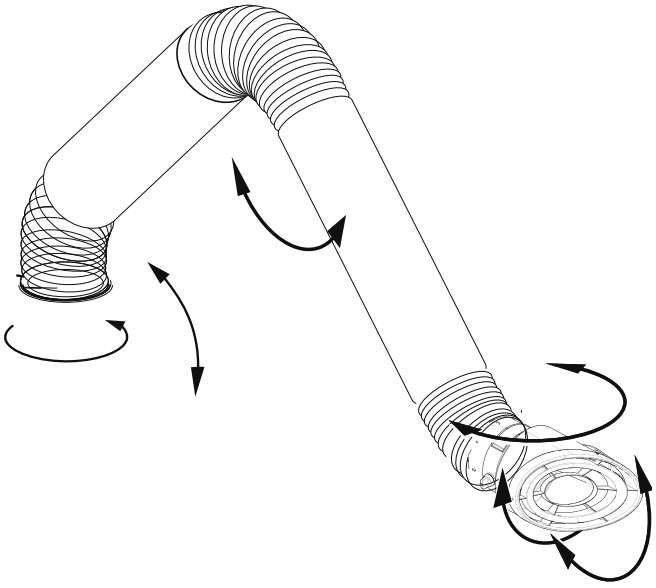
The LFA 3.1/4.1 Mobile Manual and Mobile Automatic Extraction Arms are flexible fume extraction arms with a 360° rotatable hood. Incorporated into the arm's hood is a throttle valve that can be fully opened, partially opened or completely closed to control airflow at hood opening. The hood features an airflow focus vane, which directs the air into the hood.

The arms' balance system increases their durability and stability. When the arms are raised, they are free to move in any direction. Once the arms are positioned, they are fixed into place. This makes repositioning the arms simple, easy and effortless.

The extraction arms are made of solid, lightweight, 8 in. (203 mm) diameter dent and scratch resistant tubes. The arms are provided with a spring balance system for ultra-light, user friendly positioning.

The K2633-6 and K2633-8 LFA 3.1/4.1 Mobile Automatic arms contain an integrated Lamp & Arc Sensor Kit in the hood. The 24V/35W halogen lamp provides additional light to the workpiece. With the use of a delayed arc sensor, the extraction fan will operate automatically. The automatic start/stop utilizes a 20 second auto stop to help conserve energy and reduce noise level.

FIGURE A.4



COMPONENTS

MOBIFLEX 200-M BASE UNIT

The Mobiflex 200-M Base Unit consists of the following components (See Figure A.5):

A. Control Panel

B. Handles

C. Connection For Extraction Arm

D. Filter Cover With Outlet Grid

E. Base Swivel Mount

F. Prefilter (inside LongLife® filter cartridge)

G. Transport Wheels

H. Mobiflex 200-M w/ MERV 14 FILTER: LongLife® filter cartridge MERV 14; or
Mobiflex 200-M w/ MERV 16 FILTER: LongLife® filter cartridge MERV 16

I. Base

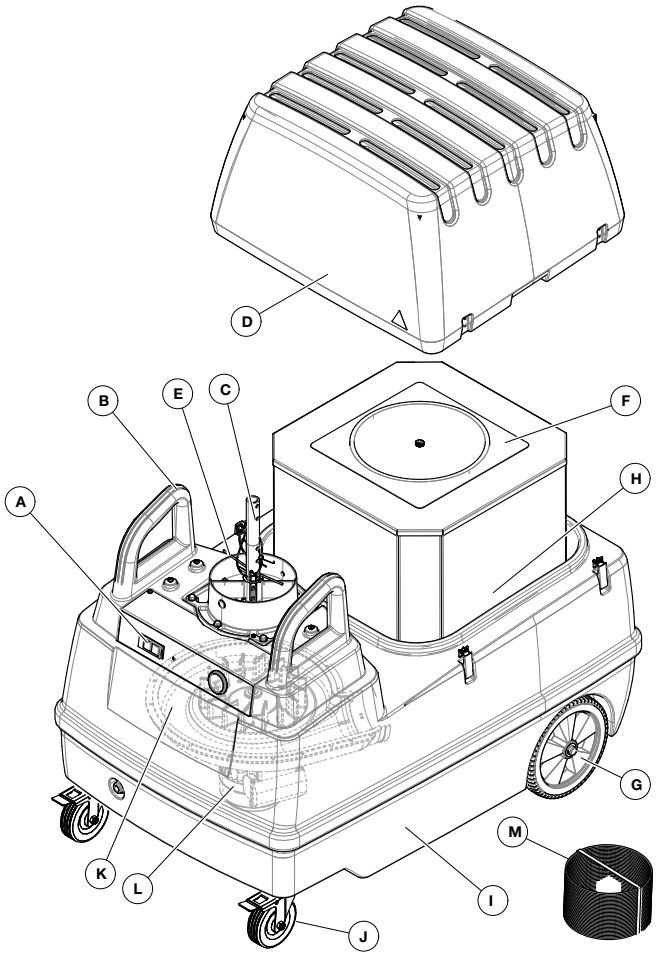
J. Swivel Locking Casters

K. Fan Housing

L. Extraction Fan

M. Flexible Hose

FIGURE A.5



MOBIFLEX 400-MS(/HE) BASE UNIT

The Mobiflex 400-MS(/HE) Base Unit consists of the following components (Fig. A.6):

A. Control Panel

B. Handles

C. Connection For Extraction Arm

D. Filter Cover With Outlet Grid

E. Base Swivel Mount

F. Mobiflex 400-Ms: Longlife Filter Cartridge Fcc 30; or
Mobiflex 400-Ms/He: Longlife Filter Cartridge Fcc 30-HE

G. Base

H. Transport Wheels

I. Dust Tray

J. Rotating And Pulseing Automatic Filter Cleaning System

K. Prefilter

L. Locking Swivel Casters

M. Flexible Hose

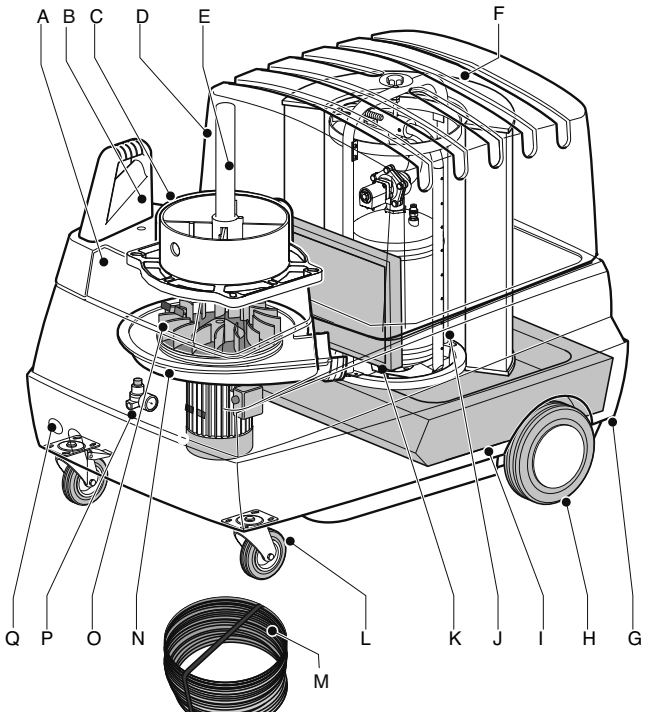
N. Fan Housing

O. Extraction Fan

P. Pressure Reducing Valve

Q. Compressed Air Connection ¼ In. Npt Female

FIGURE A.6



UNPACKING

Check that the product package is complete. The package should contain:

Mobiflex Base Unit

- (1) Mobiflex 200-M OR 400-MS Base Unit with input power cord (20 ft)
- (1) Flexible Hose 2 ft. (65 cm)
- (1) Instruction Manual

LFA 3.1/4.1 Mobile Manual/Automatic Extraction Arm

- (1) LFA 3.1/4.1 Extraction Arm
- (2) Bolt 5/16-18 UNC x 2.00" HHCS
- (2) Self-locking Nut 5/16-18 UNC
- (2) Washer

If parts are missing or damaged, contact Lincoln Electric 888-935-3877.

INSTALLATION

Mobiflex 200-M OR 400-MS Base Unit

The base swivel mount on top of the machine contains two tie wraps. A split pin has been attached to the upper one.

Installation Steps:

See Figure A.7 for steps 1-6

1. Cut through the upper tie wrap (A) to release the split pin.

⚠ ATTENTION

Make sure the tie wrap and the split pin do not fall into the fan. If it falls into the fan, it must be removed prior to turning the base unit on.

⚠ WARNING

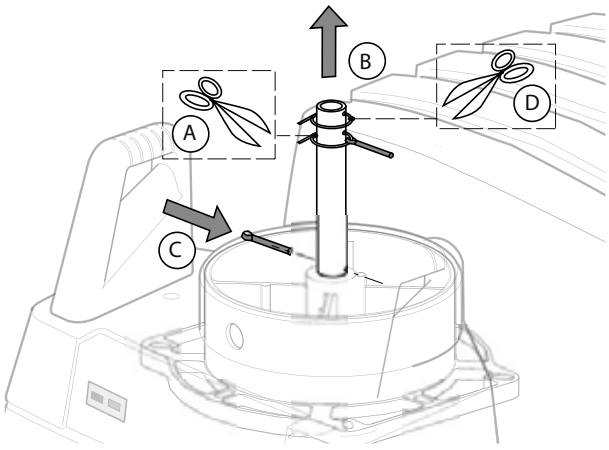
MOVING PARTS can injure.



- **Do not operate with doors open or guards off.**
- **Turn the unit off and unplug before servicing.**
- **Only qualified personnel should install, use or service this equipment.**
- **Keep away from moving parts.**

2. Lift the post of the base swivel mount by the lower tie wrap (B). ***(See Figure A.7)***
3. Put the split pin through the lowest hole in the post (C) and bend it around. ***(See Figure A.7)***
4. Remove the lower tie wrap (D) and let down the post. ***(See Figure A.7)***
5. Remove clamping pin from under rubber seal of the base swivel mount.
6. Fold down the rubber seal and remove the red plastic ring.

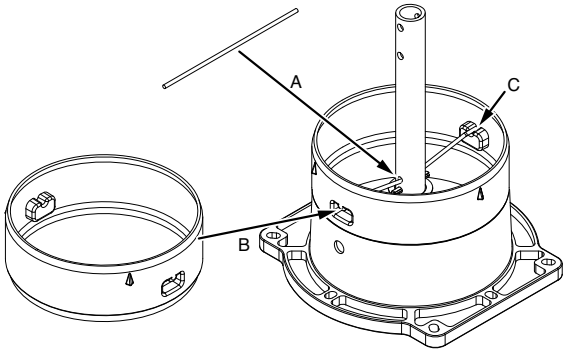
FIGURE A.7



See Figure A.8 for steps 7-8

7. Insert the clamping pin (A) through the hole in the post located above the split pin.
8. Position the red plastic ring (B) and place the clamping pin into the ridges (C). Rotating the red plastic ring may be necessary.

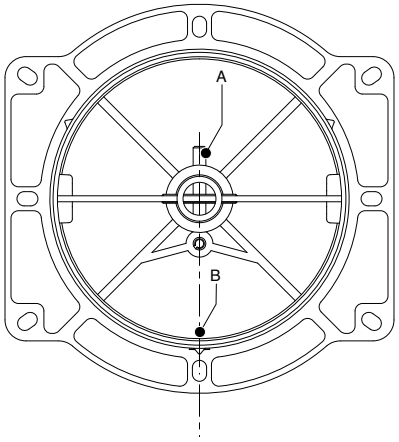
FIGURE A.8



See Figure A.9 for steps 9-12

9. Turn the base swivel mount so, that the stop pin (A) is in line with the cable lead-through hole (B).
10. Remove the wraping on the flexible hose.
11. Place the hose over the red plastic ring on the base of the swivel mount. To secure the hose, at least one metal ring of the hose should be applied over the ridges at the red plastic ring.
12. Fold back the rubber seal and place it over the hose. The underside of the rubber seal should cover the red plastic ring 0.5-1 in.

FIGURE A.9



LFA 3.1 / 4.1 Mobile Manual

The supply cable inside the base swivel mount of the Mobiflex 200-M Base Unit is not used when mounting a K2633-5 or K2633-7 LFA 3.1/4.1 Mobile Manual arm.

Installation Steps:

⚠ ATTENTION

Do not remove the yellow tape attaching both arm sections.

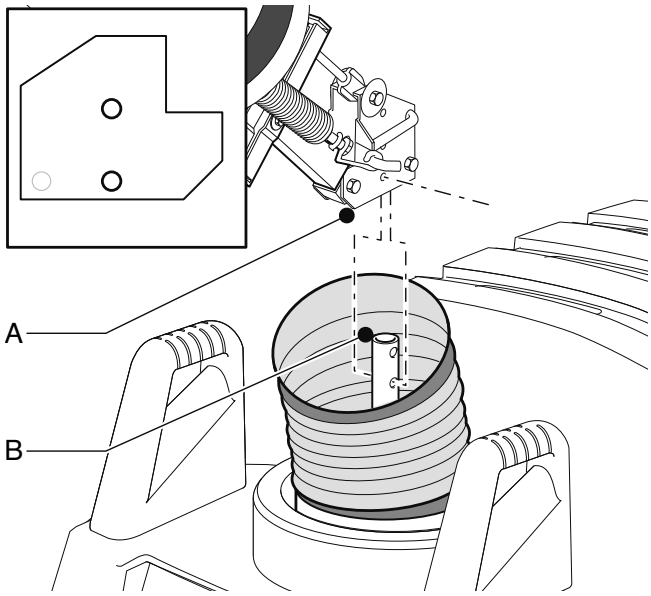
⚠ ATTENTION

The supply cable inside the base swivel mount should hang down vertically. Do not remove the wire bridge.

See Figure A.10 for steps 1-2

1. Mount the extraction arm LFA 3.1/4.1 Mobile Manual (A) on the post (B) using the two bolts 5/16-18 and two self-locking nuts 5/16-18 with washers.
2. Remove the yellow tape from both arm sections.
3. Proceed to ***Balance Check***.

FIGURE A.10



LFA 3.1/4.1 Mobile Automatic

The K2633-6 or K2633-8 LFA 3.1/4.1 Mobile Automatic extraction arm contains an integrated Lamp & Arc Sensor Kit.

⚠ ATTENTION

Do not remove the yellow tape attaching both arm sections.

Installation Steps:

See Figure A.10 for steps 1-5

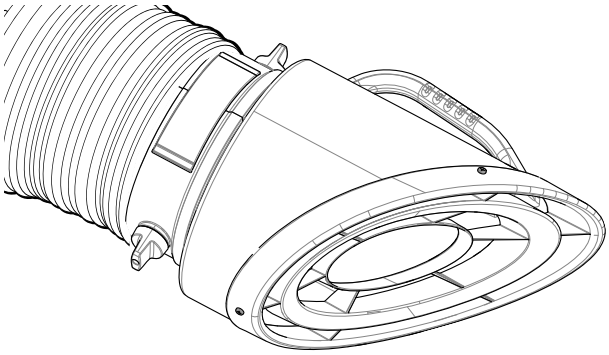
1. Mount the extraction arm LFA 3.1/4.1 Mobile Automatic (A) on the post (B) using the two bolts 5/16-18 and two self-locking nuts 5/16-18 with washers.
2. For Mobiflex 200-M only: Remove the wire bridge from the supply cable inside the base swivel mount.
3. Connect the supply cables of the Mobiflex 200-M or 400-MS Base Unit to the extraction arm.
4. Remove the yellow tape from both arm sections.
5. Turn the extraction arm 359° and check whether the supply cable is long enough. If necessary, pull the supply cable of the Mobiflex 200-M or 400-MS Base Unit to a sufficient length.

BALANCE CHECK

The extraction arms have been pre-balanced in the factory for optimal balance and positioning. However, they sometimes need adjustment. To check and adjust the balance system, proceed as follows.

1. Bring the extraction hood to a horizontal position. The hood should stay in this position. ***See Figure A.11.***

FIGURE A.11



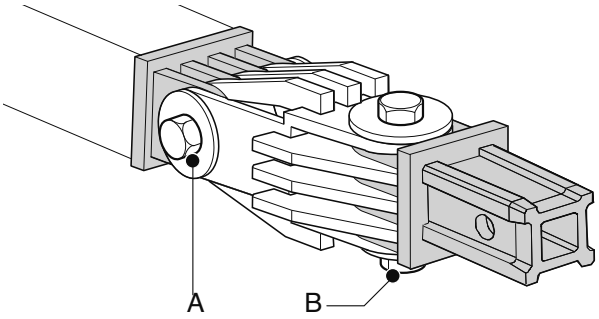
If the extraction hood falls on its own (See Figure A.12):

- Cut the tie wrap of the rubber protection cover which is applied over the hood hinge.
- Pull down the protection cover.
- Turn bolt (A) in the hood hinge clockwise to tighten extraction hood.
- Replace the protection cover and secure it with the spare tie wrap supplied.

If the extraction hood does not maintain a horizontal position (left/right) (See Figure A.12):

- Cut the tie wrap of the rubber protection cover applied over the hood hinge.
- Pull down the protection cover.
- Turn bolt (B) in the hood hinge clockwise to tighten horizontal movement.
- Replace the protection cover and secure it with the spare tie wrap supplied.

FIGURE A.12



1. Bring the arm (including extraction hood) to a horizontal position. The arm should maintain this position. See Figure A.13.

If the entire arm falls on its own:

(See Figure A.13, items A and B)

- Tighten bolt (A) on the hinge fan side to increase spring tension. Ensure spring does not turn as you tighten. See Figure A.14.

If the hood section of the arm falls on its own:

(See Figure A.13, item B)

- Tighten bolt (A) in middle hinge to increase spring (B) tension. Ensure spring does not turn as you tighten. See Figure A.15.

FIGURE A.13

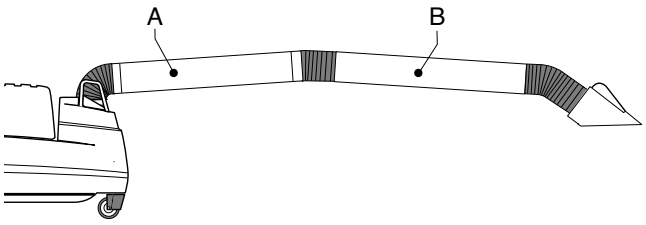


FIGURE A.14

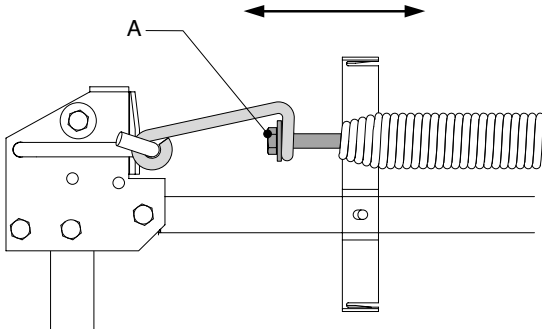
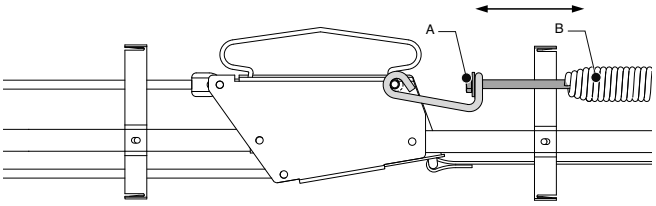


FIGURE A.15



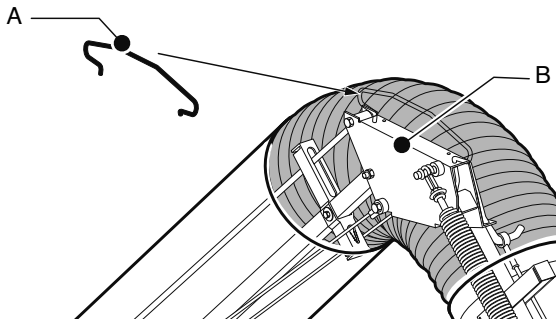
LFA 3.1/4.1 Mobile Manual/Automatic

A hose running guard is attached to the middle hinge of the extraction arm by a piece of tape.

See Figure A.16

1. Take the hose running guard (A) and snap it into place at the middle hinge (B).
2. Fold back 2/3 of both rubber seals.
3. Remove the wrap of the flexible hose.
4. Place the flexible hose over both arm sections. To secure the hose, at least one metal rings of the hose should be applied over the ridges at each arm section.
5. Fold back the rubber seals and place them over the hose. The rubber seal should cover the arm section 0.5-1 in.

FIGURE A.16



Now mount the flexible hose at the hood side.

6. Fold back 2/3 of both rubber seals.
7. Remove the wrap of the flexible hose hood side.
8. Place the flexible hose over the hood and the arm section hood side. To secure the hose, at least one metal rings of the hose should be applied over the ridges.
9. Fold back the rubber seals and place them over the hose. The rubber seals should cover the hood and the arm section 0.5-1 in.

K1668-3 Hose and Hood Set (option)

The Mobiflex 200-M OR 400-MS Base Unit can be equipped with a Hose and Hood Set instead of a flexible extraction arm.

OPERATION

SAFETY PRECAUTIONS

Read and understand this entire section before operating your Mobiflex 200-M.

⚠ CAUTION

This product is intended for commercial use

⚠ WARNING

FUMES and GASES can be dangerous.



- **Use in open, well ventilated areas or vent exhaust outside.**

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 federal, state and/or local regulations and guidelines (i.e. OSHA PEL and ACGIH TLV limits in the U.S.).

⚠ WARNING

Only use the product for the welding processes described in the General Description. Never use the product for extracting and/or filtering fumes and gases which are released during the following processes:



- **oxy-fuel cutting or welding**
- **aluminum laser cutting**
- **oil-treated metal**
- **arc-air gouging**
- **oil mist**
- **paint mist**
- **heavy oil mist in welding fume**
- **hot gases (more than 40°C/100°F continuously)**
- **aggressive gases (e.g. from acids)**
- **plasma cutting**
- **grinding aluminum and magnesium**
- **flame spraying**
- **extraction of cement, saw dust, wood dust etc.**
- **sucking cigarettes, cigars, oiled tissues and other burning particles, objects and acids**
- **in all situations where explosions can occur**

(This list is not comprehensive.)

If the product is used in above situations it could result in potential fire hazard, non-compliance with local regulations and reduction in product performance and life.

⚠ WARNING

Avoid using the product for filtering dust particles which are released when welding surfaces treated with primer.



Never use the product without prefilter and LongLife® filter cartridge.

INTENDED USE

The product has been designed exclusively for extracting and filtering fume which is released during common weld processes. Using the product for other purposes is considered contrary to its intended use. The manufacturer accepts no liability for any damage resulting from such use.

Only use the product in mechanically sound condition in accordance with its intended use and the instructions set forth in the user manual.

MODIFICATIONS

Modifications of this product, other than those specified in this manual, are not allowed. Any unauthorized modification will void the product warranty.

Do not tamper with the user-operated controls, or any ofthe safety devices of the Mobiflex.

GENERAL SAFETY

The manufacturer does not accept any liability for damage to the product caused by a failure to follow the safety and other instructions in this manual, modifications made to equipment or by negligence during installation, use, maintenance and repair of the product mentioned on the cover of this document and any corresponding accessories.

Specific working conditions or used accessories may require additional safety instructions. Immediately contact your supplier if you detect a potential hazard when using the product.

PRODUCT COMBINATIONS

In order to operate the Mobiflex 200-M or 400-MS Base Unit, selection of following product is required:

- K2633-5 (1) LFA 3.1 Mobile Manual (10 ft. extraction arm); or
- K2633-7 (1) LFA 4.1 Mobile Manual (13 ft. extraction arm); or
- K2633-6 (1) LFA 3.1 Mobile Automatic (10 ft. extraction arm with integrated Lamp & Arc Sensor Kit); or
- K2633-8 (1) LFA 4.1 Mobile Automatic (13 ft. extraction arm with integrated Lamp & Arc Sensor Kit); or
- K1668-3 (1) Hose and Hood Set instead of extraction arm

OPERATION

The air which contains welding fume is captured, extracted, and filtered, before being recirculated back into the work environment. First, the welding fume is extracted through an adjustable fume extraction arm by the internal extraction fan.

Second, as the welding fume enters the Base Unit, it passes through the prefilter. The prefilter separates larger particles, debris and most sparks prior to the welding fume entering the LongLife® filter. Third, the air passes through the LongLife® filter cartridge. Fourth, after passing through the LongLife® filter, the filtered air exits the Mobiflex 200-M or 400-MS Base Unit via the outlet grid at top of the filter housing.

⚠ ATTENTION

Never use the Mobiflex 200-M or 400-MS Base Unit without extraction arm or Hose and Hood Set.

⚠ WARNING

Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable federal, state and/or local regulations and guidelines (i.e. OSHA PEL and ACGIH TLV limits in the U.S.).

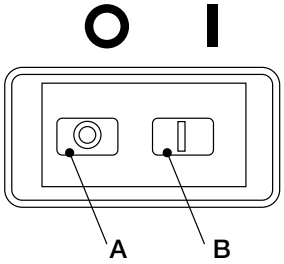


Mobiflex 200-M:

The control panel contains the following controls:

See Figure B.2.

FIGURE B.2



A. Power switch OFF

B. Power switch ON

C. Filter Maintenance Indicator (“FILTER CLOGGED”)

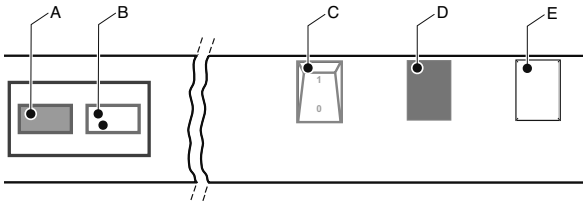
- Use the handles to move the Mobiflex 200-M to the workplace.
- Lock the swivel casters.
- Carefully apply the correct input power.

Mobiflex 400-MS:

The control panel contains the following controls:

See Figure B.3

FIGURE B.3



A. Power switch OFF

B. Power switch ON

C. FAN ON/OFF switch

D. Control light (orange)

- “CLEANING”: the control light is on indicating that the machine is busy performing the (self-)cleaning process
- “ALARM”: the control light blinks indicating that the filter is saturated and cannot be cleaned sufficiently in the automatic cleaning mode

E. Filter cleaning ON/OFF - RESET button for off-line cleaning and reset

- Use the handles to move the Mobiflex 400-MS(/HE) to the workplace.
- Lock the right swivel caster.
- Apply input power.
- Connect the Mobiflex 400-MS(/HE) Base Unit to compressed air (refer to Fig. A.6 item Q).
- Make sure the FAN ON/OFF switch (refer to Fig. B.3 item C) is in the OFF position.

⚠ WARNING

The position of the hood should be approx. 6-12 in. (15-30 cm) in front of the welding arc. Performance depends on factors such as part vs. operator and weld position, airflow (CFM and velocity level), ambient conditions and maintenance. Reposition hood as needed to maintain efficient fume capture.



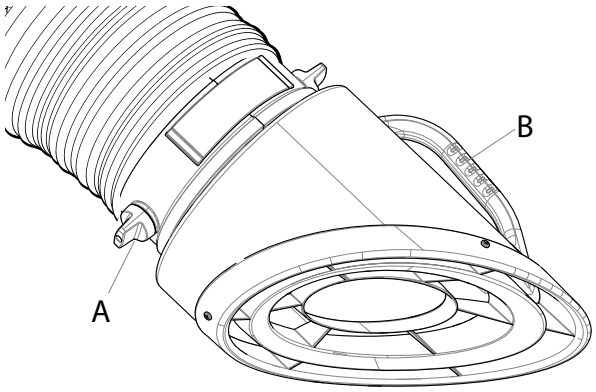
MOBIFLEX 200-M OR 400-MS & LFA 3.1/4.1 MOBILE MANUAL

The hood of the extraction arm is provided with a handle for easy positioning and a throttle valve for adjustment of the airflow.

See Figure B.2, B.3 and B.4

- Using the handle (See Figure B.4, item A), position the hood of the extraction arm in the desired location at approximately. 6-12 in. (15-30 cm) from the source of fume.
- Open the throttle valve (See Figure B.4, item A).
- Press the power switch ON (See Figure B.2 item B, or Figure B.3 item B & C) to start the machine.
- Start welding.
- Press the power switch OFF (See Figure B.2 item A, or Figure B.3 item C) approximately 20 seconds after welding completion.

FIGURE B.4



MOBIFLEX 200-M OR 400-MS & LFA 3.1/4.1 MOBILE AUTOMATIC

See Figure B.2, B.3 and B.4

- Press the power switch ON (See Figure B.2 item B, or Figure B.3 item B & C) to activate power supply.
- Using the handle (See Figure B.4, item A), position the hood of the extraction arm in the desired location at approx. 6-12 in. (15-30 cm) from the source of fume.
- If desired: turn on the halogen lamp using on/off switch.
- Open the throttle valve (See Figure B.4, item A).
- Start welding.

Due to the built-in Arc Sensor, the machine will start automatically. After welding completion, the machine will automatically stop after approximately 60 seconds.

- Press the power switch OFF (See Figure B.2 item A, or Figure B.3 item A) to interrupt power supply.

MOBIFLEX 200-M OR 400-MS & LFA 3.1/4.1 MOBILE AUTOMATIC (MANUAL START)

Manual start of the Lamp & Arc Sensor Kit is recommended for TIG welding* in case the Arc Sensor is unable to detect the arc due to weld position.

* UV from TIG welding is less than other weld processes resulting in arc sensor perhaps not detecting weld.

See Figure B.2, B.3 and B.4

- Press the power switch ON (See Figure B.2 item B, or Figure B.3 item B).
- Using the handle (See Figure B.4, item A), position the hood of the extraction arm in the desired position at approx. 6-12 in. (15-30 cm) from the source of fume.
- If desired: turn on the halogen lamp using on/off switch.
- Open the throttle valve (See Figure B.4, item A).
- Turn on the machine using the Manual / Automatic toggle switch located on the hood of the extraction arm
- Start welding.
- Turn off the machine approx. 20 seconds after welding completion by using the Manual / Automatic toggle switch located on the hood of the extraction arm.
- Press the power switch OFF (See Figure B.2 item A, or Figure B.3 item A) to interrupt power supply.

⚠ ATTENTION

Due to the parallel connection, on/off can be arranged in two different ways:

- **Automatically by Arc Sensor**
- **Manually by manual / automatic toggle switch at the hood of the extraction arm**
- **Mobiflex 400-MS has a third on-off option: Manually by rocker switch on the base of the machine**

MOBIFLEX 200-M FILTER MAINTENANCE INDICATOR

See Figure B.5

The Mobiflex 200-M Base Unit is provided with a Filter Maintenance Indicator “FILTER CLOGGED” (A). When using the machine, regularly check the Filter Maintenance Indicator. The indicator slowly moves from green to red as filter cartridge becomes saturated or clogged.

⚠ ATTENTION

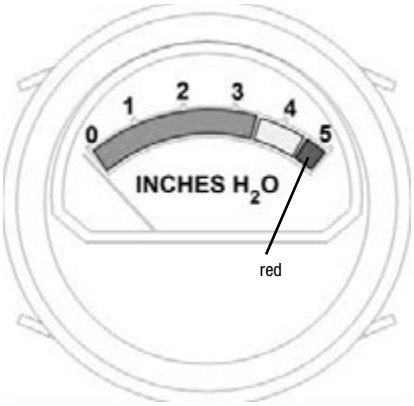
The Filter Maintenance Indicator only functions when the fan is in operation and the system is properly configured.

⚠ WARNING

Saturation or clogging of the filter cartridge results in a decrease of the extraction capacity which could result in reduced extraction of welding fumes.

- When the Filter Maintenance Indicator is red, replace the LongLife® filter cartridge. See Filter Replacement for description.

FIGURE B.5



MOBIFLEX 400-MS AUTOMATIC FILTER CLEANING SYSTEM

Control light: CLEANING

During normal operation (i.e. with a clean, non-saturated filter cartridge), the Mobiflex 400-MS(/HE) functions fully automatically. As soon as a miniumum airflow has been reached as a result of the clogging, the pressure difference switch activates the rotating and pulsating compressed air cleaning system which subsequently cleans the filter using controlled jets of compressed air. The particulate then falls into the dust tray.

During the automatic cleaning process the control light (refer to Fig. B.3 item D) is on (“CLEANING”). The cleaning system stops when the airflow is sufficient again.

This procedure is called online cleaning.

When no welding takes place during the automatic cleaning process, the fan will start running during 30 seconds after every four compressed airjets to check the pressure difference. This happens max. 15 times.

When the airflow hasn’t reached the required airflow rate after 60 compressed airjets, the control light will change into the “ALARM” mode.

- In this case, proceed with section 5.2.2.

Control light: ALARM

When the control light (refer to Fig. B.3 item D) blinks (“ALARM”), proceed as follows.

- Stop welding.
- Press filter cleaning ON/OFF - RESET button (refer to

Fig. B.3 item E) to stop the control light from blinking.

- Make sure the FAN ON/OFF switch (refer to Fig. B.3 item C) is off.
- Close throttle valve in extraction hood (refer to Fig. B.4 item A).
- Press filter cleaning ON/OFF - RESET button again

(refer to Fig. B.3 item E) to start off-line cleaning.

During the off-line cleaning cycle the entire filter cartridge is cleaned systematically by compressed airjets. This cycle takes approx. one hour.

After the cleaning cycle is finished, system operation can be continued.

When you continue welding and the control light starts blinking again immediately or shortly after the cleaning cycle is finished, the LongLife filter cartridge is saturated and should be replaced.

Off-line cleaning

Run a manual off-line cleaning routine minimum twice a week. The most convenient cleaning interval is a matter of experience.

To carry out an off-line cleaning cycle, proceed as follows.

- Make sure the FAN ON/OFF switch (refer to Fig. B.3 item C) is off.
- Close throttle valve in extraction hood (refer to Fig. B.4 item A)..
- Press filter cleaning ON/OFF - RESET button (refer to

Fig. B.3 item E) to start off-line cleaning.

During the off-line cleaning cycle the entire filter cartridge is cleaned systematically by compressed airjets. This cycle takes approx. one hour.

⚠ ATTENTION

Do not use the machine during the off-line cleaning cycle.



If desired, the off-line cleaning cycle can be interrupted by pressing the filter cleaning ON/OFF - RESET button (refer to Fig. B.3) .

⚠ WARNING

Saturation or clogging of the filter cartridge results in a decrease of the extraction capacity which could result in a reduced extraction of welding fumes. Therefore, stop welding immediately when the machine enters the ALARM phase.



⚠ ATTENTION

For more efficient filter cleaning, it is recommended to carry out an off-line cleaning cycle on a regular basis.

Run a manual off-line cleaning routine minimum twice a week. The most convenient cleaning interval is a matter of experience.

⚠ ATTENTION

For off-line cleaning after working hours, make sure compressed air is connected and available.

⚠ ATTENTION

The off-line cleaning cycle takes approx. one hour. Do not use the machine during the off-line cleaning cycle.

If desired, the off-line cleaning cycle can be interrupted by pressing the filter cleaning ON/OFF - RESET button (refer to Fig. 5.1C) .

MOBIFLEX 200-M FILTER REPLACEMENT

⚠ WARNING

Take necessary precautions so that you and your fellow workers are not over-exposed to particulate. Wear suitable personal protection equipment, such as gloves, respirator, eye glass and protective clothing when disposing of the filter and particulate.



Check with local waste management (or local agencies) for assistance in the disposal of filter. If filter has collected certain types of particulate which local agencies define as hazardous waste, filter may be classified as hazardous waste and will need to be disposed in accordance with federal, state and local regulations - which could vary from state to state, and between local municipalities within the state.

Mobiflex 200-M LongLife® Filter Cartridge

Replace the LongLife® filter cartridge:

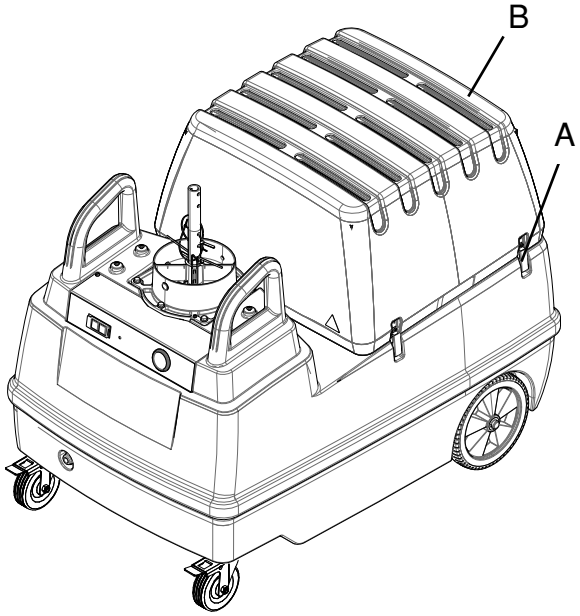
- When the Filter Maintenance Indicator (See Figure B.5) shows that the filter cartridge is saturated or clogged; or
- When the airflow is reduced to the point that extraction performance is no longer satisfactory; or
- When it has been damaged.

Replacement Steps:

See Figure B.6

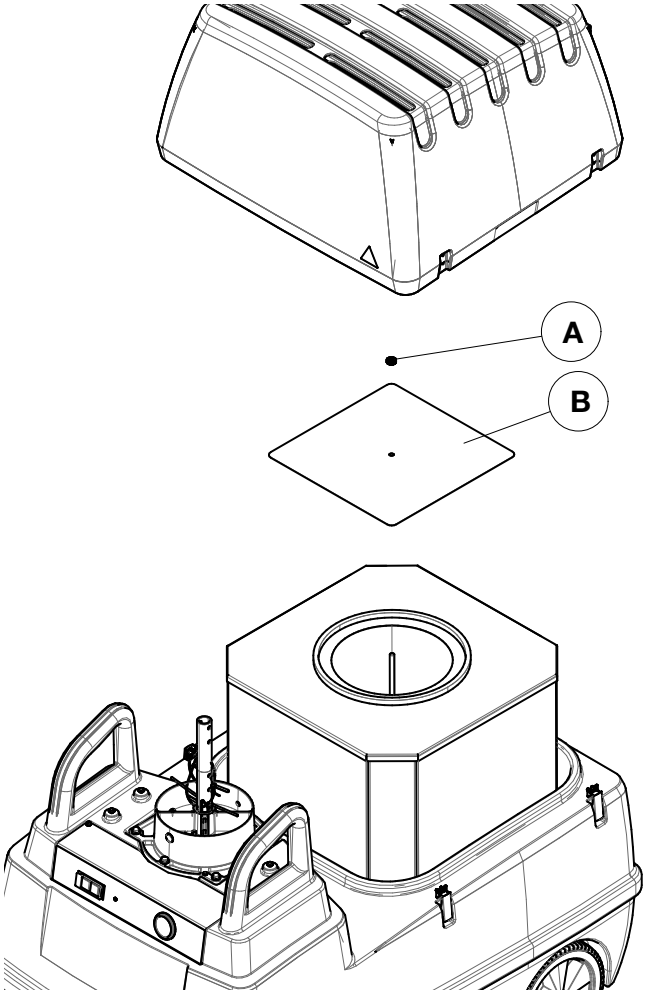
1. Turn off the machine and disconnect it from the input power.
2. Release the four latches (A) and remove the filter cover (B).

FIGURE B.6



3. Unscrew the knurled nut (A) and remove the filter cover plate (B). See Figure B.7.

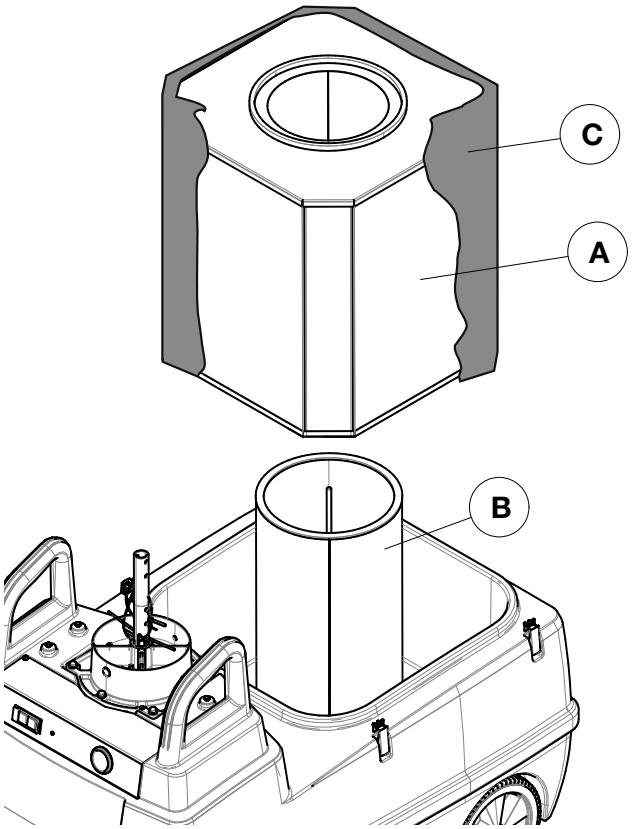
FIGURE B.7



See Figure B.8

4. Lift the LongLife® filter cartridge (A) up and out of the base. It is not necessary to remove the prefilter (B) unless it needs replacement.
5. If required by federal, state and/or local regulations and guidelines, place filter in appropriate bag, e.g. plastic bag.
6. Clean the prefilter with a power washer and filter compartment with an industrial vacuum cleaner that meets OSHA guidelines for Cr6 housekeeping.
7. Install a new LongLife® filter cartridge.
8. Replace the previously removed parts in reverse order.

FIGURE B.8



Prefilter

Replace the prefilter (See Figure B.8, item B):

- When it is saturated or clogged and can't be cleaned using a vacuum cleaner; or
- When it has been damaged.

⚠ ATTENTION

In case the prefilter has been damaged, it is recommended to also replace the LongLife® filter cartridge.

Activated Carbon Filter (option)

Replace the Activated Carbon Filter:

- When detecting odors and smells; or
- When it has been damaged.

Replacement Steps:

See Figure B.6

1. Turn off the machine and disconnect it from input power.
2. Release the four latches (A) and remove the filter cover (B).

See Figure B.8

3. Remove the Activated Carbon Filter (C) from the LongLife® filter cartridge. It is not necessary to take out the LongLife® filter.
4. Install a new Activated Carbon Filter.
5. Replace the filter cover and secure the latches.

MOBIFLEX 400-MS FILTER REPLACEMENT

LongLife filter cartridge

Replace the LongLife filter cartridge:

- when the control light keeps blinking (shortly) after an offline cleaning cycle; or
- when the airflow is reduced to the point that extraction performance is no longer satisfactory; or
- when it has been damaged.

Replacement Steps:

⚠ ATTENTION

Always wear face mask and gloves during emptying of the tray

⚠ WARNING

Never open the dust ray while the motor is running.

1) Turn off the machine and disconnect it from input power and compressed air.
2) Release the four latches (A) and remove the filter cover (B). See figure B.6.
3) Lift the LongLife filter cartridge (A) up and out of the base. see figure B.9
4) If required by federal, state and/or local regulations and guidelines, conceal filter in appropriate bag, e.g. plastic bag.
5) Clean the prefilter (B) with a power washer and filter compartment (C) with an industrial vacuum cleaner that meets OSHA guidelines for Cr6 housekeeping.
6) Install a new LongLife filter cartridge.
7) Replace the dismounted parts in reverse order

Prefilter

Replace the prefilter (Fig. B.9 item B):

- when it is clogged or saturated and cannot be cleaned using a power washer; or
- when it has been damaged.

Emptying the dust tray

See Figure B.10

Dust and dirt particles from the main filter end up in the dust tray underneath the machine. To avoid the dust tray to overflow thus polluting the workshop, it needs to be emptied on a regular basis. Refer to maintenance section for the frequency of emptying.

1) Loosen the star knob (B), which is accessible from the underside at the back of the machine.

2) Carefully take out the dust tray (A).

The dust tray can be emptied in different ways:

- using an industrial vacuum cleaner (preferred way); or
- empty it in a plastic bag.

3) Empty the dust tray. In case of emptying it in a plastic bag, make sure to seal the bag firmly.
4) Slide the dust tray back into the machine.
5) Carefully tighten the star knob making sure that the dust tray is sealed airtight.

FIGURE B.9

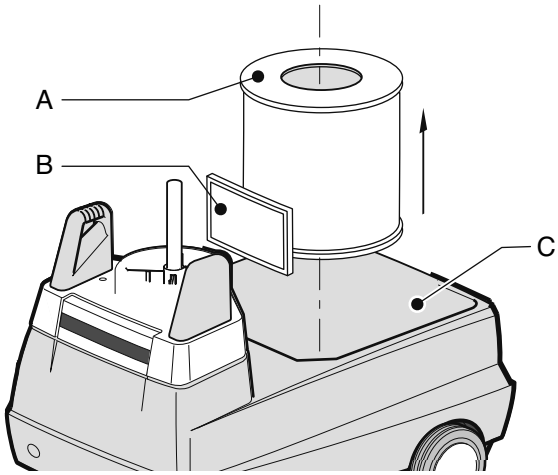
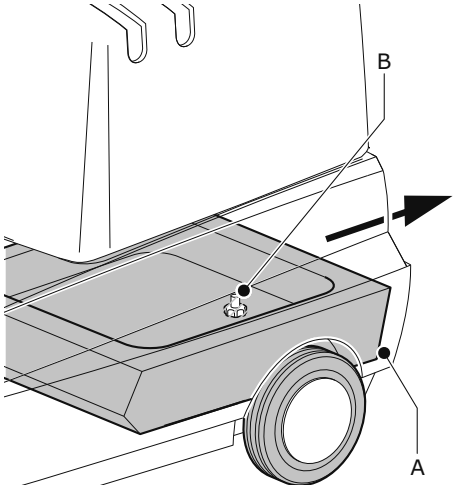


FIGURE B.10



OPTIONS

The following products can be obtained as an option:

K1852-1 Activated Carbon Filter (option) - Mobiflex 200-M only

K1668-3 Hose and Hood Set (option)

The Mobiflex 200-M or 400-MS Base Unit can be equipped with a Hose and Hood Set instead of a flexible extraction arm.

MAINTENANCE

⚠ WARNING



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

Have qualified personnel do the maintenance work. Turn the unit off before working inside the machine. In some cases, it may be necessary to remove safety guards to perform required maintenance. Remove guards only when necessary and replace them when the maintenance requiring their removal is complete. Always use the greatest care when working near moving parts.

Do not put your hands near the cooling blower fan. If a problem cannot be corrected by following the instructions, take the machine to the nearest Lincoln Field Service Shop.

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**

FUMES and GASES can be dangerous.



- **Use in open, well ventilated areas or vent exhaust outside.**

MOVING PARTS can injure.



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

⚠ WARNING

Use of equipment with clogged filters can cause fire.



- **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.**

⚠ WARNING

Electric shock can kill.

Always switch OFF the machine and remove input power before carrying out the maintenance activities below.



⚠ ATTENTION

Do not use compressed air or high pressure water sprayer to clean LongLife® filter cartridge, prefilter or optional Activated Carbon Filter.



The product has been designed to function with minimal maintenance. In order to guarantee optimal performance level, periodic maintenance and cleaning activities are required and described in this section.

Maintenance intervals can vary depending on the specific working conditions, such as ambient conditions, welding consumables and process(es), base material, coatings on base material and operator procedure. Therefore, it is required that regular inspection of the entire system is carried out. It is recommended a thorough inspection of the system occurs at least once every year.

PERIODIC MAINTENANCE

The maintenance activities in the following tables indicated by [*] can be carried out by the user; other activities are strictly reserved for well trained and authorized service personnel.

⚠ WARNING

When cleaning equipment or replacing filter use personal protection equipment (PPE) such as gloves, respirators and protective clothing to protect against overexposure to particulate. It is recommended that a vacuum cleaner or wet methods be used to clean up any loose particulate that is present in the extraction arm. It is necessary to use a vacuum cleaner with HEPA rated filtration.



TABLE D.1 – PERIODIC MAINTENANCE MOBIFLEX 200-M BASE UNIT

COMPONENT	ACTION	EVERY MONTH	EVERY 6 MONTHS	EVERY 12 MONTHS
Filter Maintenance Indicator	Unless LongLife filter cartridge is clean, check if indicator moves right upon starting machine. If not, ***See Troubleshooting Section***.	X [*]		
Prefilter, LongLife filter cartridge and optional Activated Carbon Filter	Check for damage, clogging and saturation. If damaged, clogged or saturated, ***See Filter Replacement***.	X		
Base and filter cover	Clean inside with an industrial vacuum cleaner that meets OSHA guidelines for Cr6 housekeeping and remove the dust from the filter compartment.	X [*]		
	Clean outside with a mild detergent.		X [*]	
	Check for cracks or holes. If damaged, ***See Troubleshooting Section***.	X [*]		
Fan	Check the extraction fan and the extraction fan housing for encrusted particulate. Clean if necessary.			X
	Check the sealing material of the extraction fan. Replace if necessary.			X
Prefilter	Replace every filter. Change or clean with an industrial vacuum cleaner that meets OHSA guidelines for Cr6 housekeeping.	X [*]		
Flexible Hose	Check for cracks, holes or deformities. Replace if necessary.	X [*]		
Input power cord	Check the input power cord for damage.	Before every use [*]		

TABLE D.1 – PERIODIC MAINTENANCE MOBIFLEX 400-MS(/HE) BASE UNIT

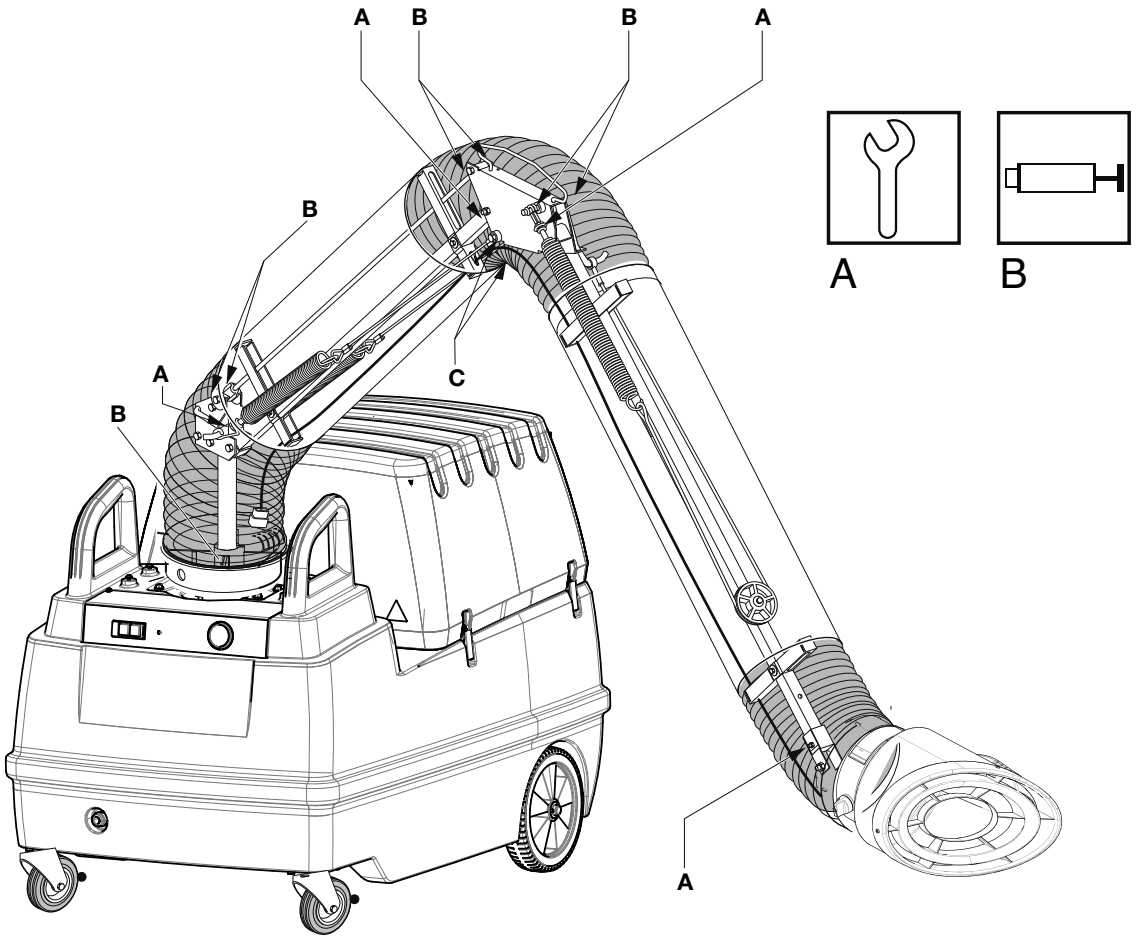
Component	Action	Every month	Every 6 months	Every 12 months
Prefilter	Check for damage, clogging and saturation. If damaged, clogged or saturated, refer to section 6.2.2.	X		
	Clean with a power washer	X [*]		
LongLife filter cartridge	Check for damage, clogging and saturation. If damaged, clogged or saturated, refer to section 6.2.1.	X		
Base and filter cover	Clean inside with an industrial vacuum cleaner that meets OSHA guidelines for Cr6 housekeeping and remove the dust from the filter compartment.	X [*]		
	Clean outside with a mild detergent.		X [*]	
	Check for cracks or holes. If damaged, refer to chapter 7.	X [*]		
Fan	Check the extraction fan and the extraction fan housing for encrusted particulate. Clean if necessary.			X
	Check the sealing material of the extraction fan. Replace if necessary.			X
Rotating Pulsating cleaning mechanism	Check proper turning of compressed air rod. Repair/replace if necessary.		X	
	Check the cleaning mechanism for leakage. Repair/replace if necessary.		X	
Dust tray	Check the contents of the dust tray. Empty if necessary.	X [*]		
Flexible hose	Check for cracks, holes or deformities. Replace if necessary.	X [*]		
Input power cord	Check the input power cord for damages.	Before every use [*]		

TABLE D.2 – PERIODIC MAINTENANCE LFA 3.1/4.1 MANUAL/AUTOMATIC EXTRACTION ARMS

Component	Action	FREQUENCY Every 3 mo.	FREQUENCY Every 6 mo.
BALANCE SYSTEM (ITEM A)	CHECK THE BALANCE CONSTRUCTION OF THE EXTRACTION ARM. ADJUST MECHANISM IF NECESSARY.		X
OUTSIDE ARM	CHECK AND CLEAN WITH A NON-AGGRESSIVE DETERGENT.	X	
FLEXIBLE HOSES	CHECK FOR CRACKS OR DAMAGES. REPLACE IF NECESSARY.		X
INSIDE ARM	CHECK AND CLEAN THOROUGHLY.		X
ARM MOVEMENT	CHECK HORIZONTAL, VERTICAL AND DIAGONAL ARM MOVEMENT. IF NECESSARY, ADJUST THE SPRING AND FRICTION.		X
ROTATABLE ARM	CHECK THE FUNCTION OF THE HOOD HINGE. IF NECESSARY, ADJUST THE FRICTION. .	X	
THROTTLE VALVE	CHECK 90º ROTATION OF THE THROTTLE VALVE USING THE ROTARY KNOB		X
HINGES (ITEM B)	CHECK AND LUBRICATE THE HINGE POINTS WITH BEARING GREASE.		X
LFA 3.1 / 4.1 MOBILE AUTOMATIC ONLY			
HALOGEN LAMP	CHECK HALOGEN LAMP BY TURNING THE ON/OFF SWITCH	X*	
	CHECK GLASS SPATTER GUARD FOR WELD SPATTERS. REPLACE IF NECESSARY.	X	

* Variables such as coatings (e.g. oil), base material, weld process and procedures can affect filter life and performance.

FIGURE D.1



DISPOSAL

After life of the product, dispose of product in accordance with federal, state or local regulations.

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.

The second column labeled “POSSIBLE CAUSE” 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 Cause, generally it states to contact your local Lincoln Authorized Field Service Facility.

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 888-935-3877.

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

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
MOBIFLEX 200-M AND 400-MS BASE UNIT & LFA 3.1/4.1 MANUAL/AUTOMATIC EXTRACTION ARMS		
Motor does not start. Machine does not function.	No input power.	Check the input power.
	Input power cord defective.	Repair or replace input power cord.
	Loose contacts.	Repair the contacts.
	Motor protection switch defective.	Replace the motor protection
Motor makes a humming sound. Machine does not function.	Motor capacitor defective/not connected.	Repair or replace the motor capac-
Motor stops automatically. Machine does not function.	Motor protection switch activated.	Let the machine cool down for some time. Check overload current setting 11A for 120V, 5.75A for 230V.
	Motor defective.	Repair or replace the motor.
Mobiflex 200-M only- Faulty Filter Maintenance Indicator. Indicator does not indicate saturation level of prefilter and/or LongLife® filter cartridge.	Blocked indicator tubes.	Clean tubes with compressed air.
	Indicator leaking.	Replace Filter Maintenance Indicator.
Poor suction. Machine does not function properly.	LongLife® filter cartridge clogged (check filter maintenance indicator - ***See Figure B.5***).	Replace LongLife® filter cartridge (***See LongLife® Filter Cartridge***).
	Prefilter clogged.	Clean (***See Table D.1***) or replace (***See Filter Replacement***) the prefilter.
	Throttle valve closed.	Open throttle valve.
	Outside air is being extracted.	Check or replace the sealing material.
	Outlet grid blocked.	Remove obstructions from the outlet grid.
	Extraction fan polluted.	Clean the extraction fan.

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

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
MOBIFLEX 200-M OR 400-MS BASE UNIT & LFA 3.1/4.1 MANUAL/AUTOMATIC EXTRACTION ARMS		
Dust or smoke coming out of the filter cover. Pollution of the facility.	LongLife® filter cartridge damaged.	Replace LongLife® filter cartridge (***See LongLife® Filter Cartridge***).
	Sealing on LongLife® filter cartridge damaged.	Replace LongLife® filter cartridge (***See LongLife® Filter Cartridge***).
	LongLife® filter cartridge placed incorrectly.	Replace the LongLife® filter cartridge or place correctly.
Vibrations in the machine. Machine not steady.	Imbalance in the extraction fan.	Clean the extraction fan.
MOBIFLEX 200-M OR 400-MS BASE UNIT & LFA 3.1/4.1 AUTOMATIC ONLY EXTRACTION ARMS		
Motor does not start automatically. Machine does not function.	Lens cap of arc sensor damaged or dirty.	Replace or clean plastic lens cap of arc sensor.
	Arc Sensor defective.	Replace arc sensor.

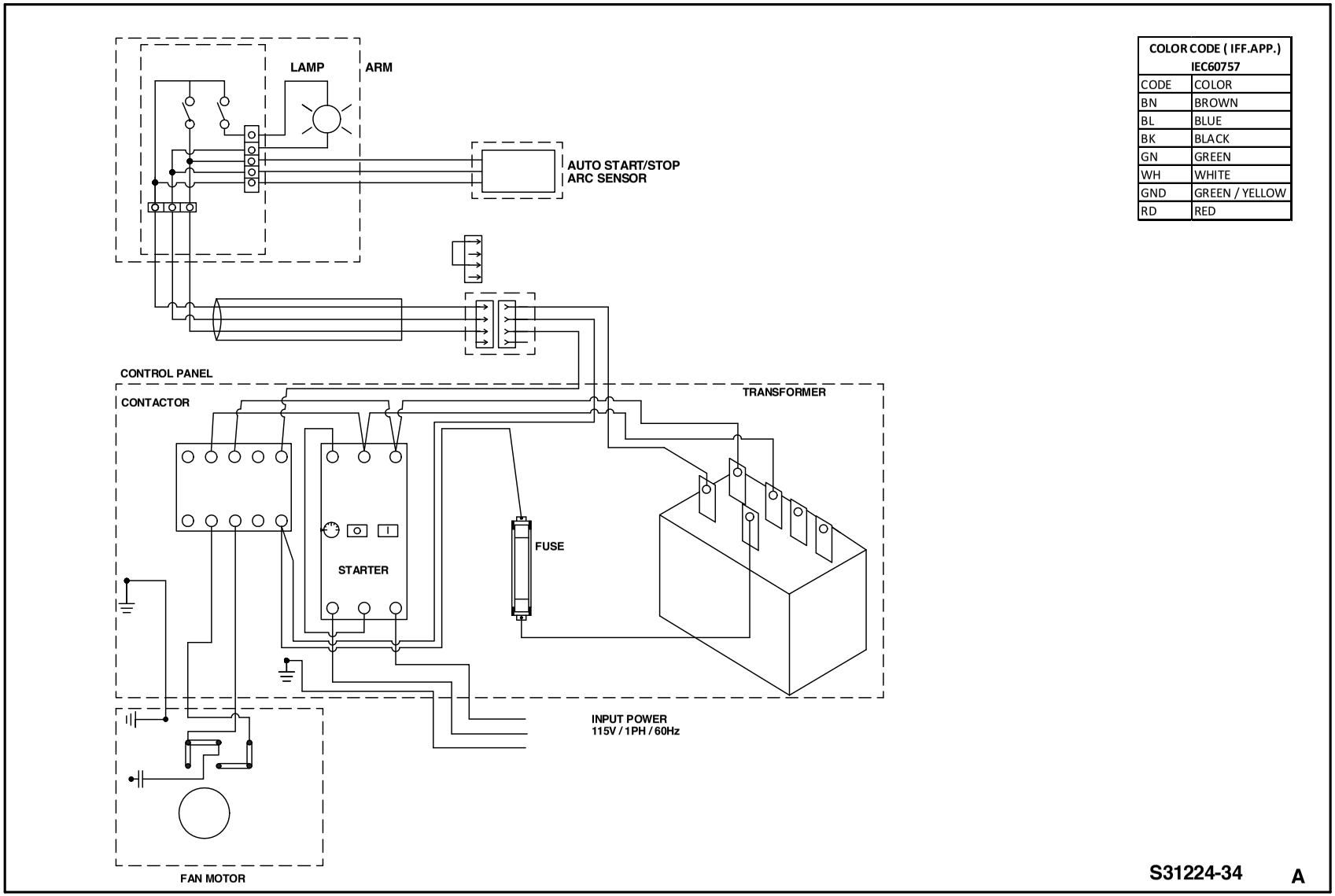
If for any reason you do not understand the test procedures or are unable to perform the tests/repairs safely, contact your Lincoln Authorized Service Facility for technical troubleshooting assistance before you proceed.
WWW.LINCOLNELECTRIC.COM/LOCATOR

Observe all Safety Guidelines detailed throughout this manual

PROBLEMS (SYMPTOMS)	POSSIBLE CAUSE	RECOMMENDED COURSE OF ACTION
LFA 3.1/4.1 MANUAL/AUTOMATIC		
Extraction hood not in balance. Extraction hood does not stay in desired position.	Not enough friction.	Adjust balance. ***See Balance Check*** A-7
Extraction hood not in balance. Extraction hood can't be moved in desired position.	Too much friction.	Adjust friction. ***See Balance Check*** A-7
Extraction capacity insufficient. Pollution of the facility.	Throttle valve closed.	Open throttle valve.
	Flexible hose(s) torn or loose.	Replace flexible hose(s) or apply correctly.
	Rubber seal(s) torn.	Replace rubber seal(s).
Extraction arm not in balance. Entire arm falls on its own.	Lack of spring tension fan side.	Increase spring tension. ***See Balance Check*** A-7
Extraction arm not in balance. Hood section falls on its own.	Lack of spring tension hood side.	Increase spring tension. ***See Balance Check*** A-7
Extraction arm creaks or squeaks. Excessive wear of parts.	Insufficient lubrication in hinges.	Lubricate hinges using oil or grease. ***See Maintenance Section*** D-1
	Worn out steel cable.	Replace steel cable and lubricate.
	Worn out bearing of balance wheel.	Replace bearing and lubricate.
LFA 3.1/4.1 AUTOMATIC ONLY:		
Insufficient light to the workpiece. No clear view.	Weld spatters on glass spatter guard.	Replace glass spatter guard.
	Halogen lamp defective.	Replace halogen lamp.

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

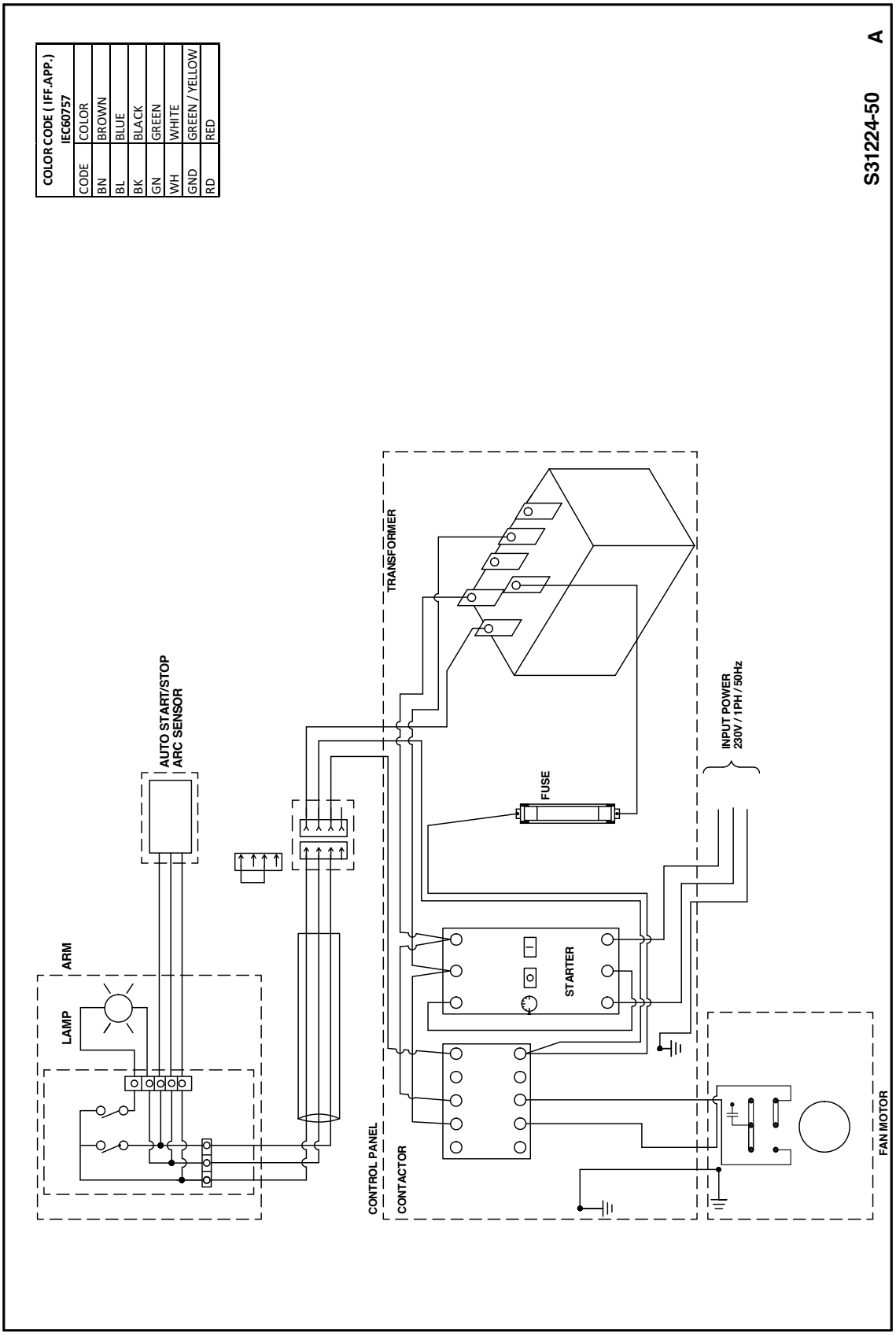
Mobiflex 200-M 120V/1~/60 Hz



COLOR CODE (IFF.APP.) IEC60757	
CODE	COLOR
BN	BROWN
BL	BLUE
BK	BLACK
GN	GREEN
WH	WHITE
GND	GREEN / YELLOW
RD	RED

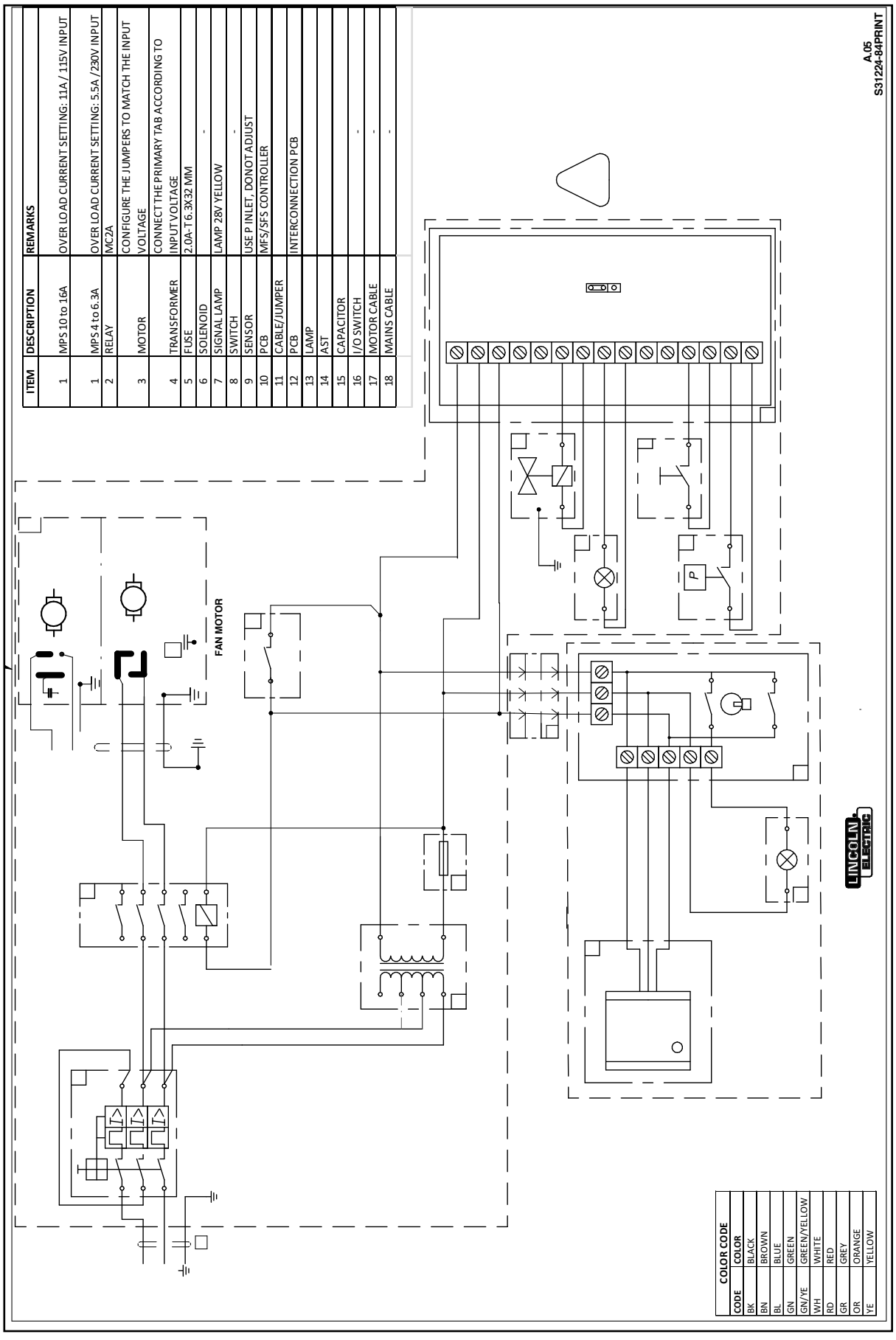
NOTE: This diagram is for reference only. It may not be accurate for all machines covered by this manual. The specific diagram for a particular code is pasted inside the machine on one of the enclosure panels. If the diagram is illegible, write to the Service Department for a replacement. Give the equipment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

Mobiflex 200-M 230V/1~/50 Hz



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.

Mobiflex 400-MS 115V/1~/60Hz OR 230V/1~/50Hz



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.

			
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焊材料，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.

THE LINCOLN ELECTRIC COMPANY
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