

LINCOLN

IM108

August, 1939
Linc-Inductor

“Linc-Inductor”

ALTERNATING CURRENT ARC WELDER

INSTRUCTION MANUAL IM-108



This manual covers equipment which is obsolete and no longer in production by The Lincoln Electric Co. Specifications and availability of optional features may have changed.

THE LINCOLN ELECTRIC COMPANY

Largest Manufacturers of Arc Welding Equipment in the World

CLEVELAND, OHIO

THE LINCOLN "LINC-INDUCTOR" A. C. WELDER

This type single-phase A.C. arc welder embodies entirely new ideas of operation and construction. The automatic arc stabilization of the "Linc-Inductor" simplifies handling of the 60 cycle A.C. welding arc for faster work and high quality results. The new and efficient design features in the welder assure easier operation under all working conditions.

UNCRATING THE WELDER

When the equipment arrives, it should be carefully uncrated and all parts laid out for checking. The use of pinch bars or anything which might injure the mechanism should be avoided. Material which has been damaged in shipment should be laid to one side and the attention of the Shipping Department called to it, so that proper claims may be made against the transportation company.

LOCATION

The welding machine should, if possible, be located in a clean, dry and well ventilated place, using the same discretion as in locating any piece of electrical apparatus. It should be set on a foundation which is as free from vibration as practical.

WIRING AND CONNECTION OF SET

First, check the nameplate of the set to be sure that the voltage and cycles of the equipment are correct for the power available.

All internal connections have been made at the factory, so all that is necessary is to connect the power lines to the proper leads. There are four flexible leads, extending through an opening on the back side of welder. On the welder nameplate, mounted on top of the welder, are two input voltage connection diagrams. Connect these leads and the power lines according to the diagram corresponding to the voltage of your power supply. The input current to the welder for full load at rated input voltage is marked on the nameplate. In order to insure the maximum output of the welder, the power lines should be a little larger than for the full load current to insure full voltage being applied to the welder. Since the welder is not equipped with a switch or fuse panel, a safety

switch of proper capacity should be connected in the power circuit leading to the welder.

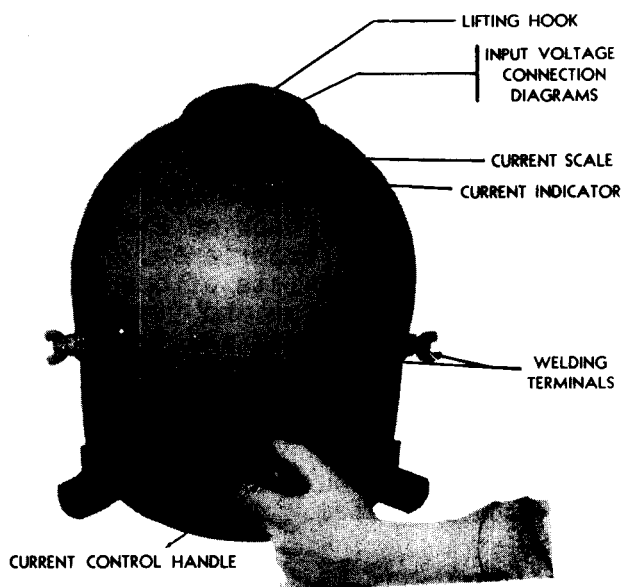
DESCRIPTION

The "Linc-Inductor" embodies design features not heretofore found in single phase welders. These features make possible a construction which is simple and one which will require practically no maintenance. There are no moving electrical connections or coils. There are no contacts or switch parts to require repair. The electrical windings are insulated throughout with woven glass and mica tape and are impregnated with a tough, high-temperature, moisture-resisting compound. No burnable materials are used in the windings. The current control is obtained by means of a handle extending from the case and affords continuous adjustment of the welding current over the entire range of the machine. This insures the proper current for each application. On the welder nameplate is a graduated scale showing the ampere output of the machine. Extending from beneath this scale is a small pointer which indicates the welding current of the machine at that particular setting. This pointer is connected to the rotating part of the welder which determines the output hence as the handle is rotated to different positions the pointer will indicate the welding current on the scale. The amperes on the scale are graduated to correspond with the usual arc voltage used at that particular heat with a coated electrode. These output values also depend upon a constant rated input voltage.

OPERATION OF MACHINE AND CONTROL OF WELDING CURRENT

Connect electrode and ground cables to the welding terminals which are located on the sides of the welder base. To

set the machine for the desired welding current, push down on current control handle to release self-locking cam and then move the handle until the pointer at the current scale indicates the desired current. Release handle, which will lock itself in position. This is all the adjustment that is necessary. If the current control handle is moved while welding, the handle should be held firmly as there is a magnetic force acting on the control mechanism which tends to always move it toward the minimum output position. For welding at considerable distance from the machine, care should be taken that welding cables of ample size are used. If too small, they reduce the output of the machine. It is desirable to reduce the reactance of the welding leads to a minimum and keep the current at a maximum. Hence, the two welding leads should be taped together as far as possible. Under no conditions should the leads be coiled around the welder.



ELECTRODE

With the "Linc-Inductor" welder you should use a special A. C. type of welding electrode. "Transweld" electrode, supplied in 3/32", 1/8", 5/32" and 3/16" sizes is recommended for all general steel welding purposes. "Ferro-weld" electrode should be used for the welding of cast iron.

PROTECTION

The operator should protect himself properly from flying sparks of hot metal and from the rays of the arc.

Good protective lens and shields should be used by the operator and the arc should never be looked at with the naked eye at close quarters. When new lenses are put in the shield, care should be taken that no light leaks in around the glass. If practical, the welding room should be painted a dead black to prevent reflection. Other workmen around an arc can be protected readily by movable or portable screens.

Forty feet is the nearest distance at which the unprotected eye should see the electric arc. Failure to observe this rule will result in various degrees of eye-burn. Burning of the eyes will be extremely painful for 24 to 48 hours. The eyes will not be permanently injured, but intense suffering will result. The eyes may be treated every hour with sweet oil. After the acute burning sensation has passed, a few drops of a 5% solution of argyrol may be applied every five or six hours until the eyes are entirely healed. Argyrol should not be used in the eyes oftener than 5-hour intervals. Ordinary doses of aspirin will relieve most of the pain. Cold compacts will help. In case of severe burn see your doctor.

ARC WELDING SUPPLIES

This company has for sale a complete line of Arc Welding Supplies including:

- Electrodes for all purposes
- Electrode holders
- Cables
- Protective lenses
- Protective clothing
- Face shields and head shields

Supply Bulletins will be sent on request, also full procedures for various electrodes.

SERVICE

The Lincoln Electric Company is vitally interested in having its welding equipment deliver the maximum amount of service to the user. Correspondence from the operators, electricians, or anyone else connected with the operation of Lincoln Welding Equipment is solicited, either with the factory or any of its branch offices. In discussing the behavior of the machine, under various conditions, it is always advisable to give the serial number

of the machine so that reference can be made at the factory to the Test Sheet on that particular machine.

Full information and description of this available literature will be sent on request.

BOOKS AND PAPERS

As a service to its users, The Lincoln Electric Company publishes a great deal of literature on almost all phases of welding applications. Some of these are published regularly, either monthly or bi-monthly. In addition to these regular publications, the company issues leaflets and bulletins on practically all other phases of arc welding. These will be sent to those interested upon application on your company letterhead, stating your interest in welding. A partial list follows:

- Studies in Structural Arc Welding -
Gratis to Structural Engineers
- Elements of Design - Gratis to Mechanical Designers
- The Stabilizer - Gratis to Welders
- Procedure Handbook of Arc Welding Design and Practice - Price \$1.50 in U.S.A., \$2.00 elsewhere, postage prepaid.
- Arc Welding in Design, Manufacture and Construction (Published by Lincoln Foundation) - Price \$1.50 in U.S.A., \$2.00 elsewhere, postage prepaid.
- Lessons in Welding - Price 50 cents in U.S.A., 75 cents elsewhere, postage prepaid.
- Simple Blue Print Reading - Price 50 cents in U.S.A., 75 cents elsewhere, postage prepaid.
- Welding Encyclopedia - Price \$5.00.
- The Welding Engineer - Price \$3.00 per year.

WELDING SCHOOL

For the convenience of its customers, The Lincoln Electric Company maintains a welder training school at Cleveland, Ohio. It is the only arc welding school which has been in continuous existence for more than 20 years. A complete four weeks' training course in practical arc welding is given, under the supervision and direction of competent and practical instructors. It is a highly practical course, covering the fundamentals of welding in horizontal, vertical and overhead positions and on various metals, etc. A small nominal fee is charged. Applicants for admission should write in advance for date of their acceptance and entrance to school.

ENGINEERING SCHOOL

Operated in conjunction with John Huntington Polytechnic Institute for designers, engineers and those in charge of welding operations who have had a college education or its equivalent in practical experience. Course of instruction consists of one week of intensive instruction and training in designing for welding and its efficient application including lectures by prominent consulting welding engineers and technicians. Fee, \$10.00 to cover cost of materials, etc. Applicants for admission should write in advance for entrance dates.

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The Lincoln Electric Co. of Canada, Ltd.
Toronto - Montreal

Lincoln Electric Co., Ltd.
Welwyn Garden City - Herts - England

Lincoln Electric (Australia) Pty., Ltd.
Alexandria; Sydney

Branch Offices and Distributing Agencies in All Principal Cities.