**NA-5 Control and Heads**

**Processes**
Flux-Cored, Submerged Arc

**Product Number**
K356-2

*See back for complete specs*

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**Automated Welding Systems**

Improve productivity with the NA-5 automatic wire feeders. These systems have been specially designed to deposit significant amounts of weld metal at fast travel speeds on thick materials.

**FEATURES**
- **Operating Versatility** - Choice of gear ratios allows use of a wide range of wire sizes and wire feed speeds.
- **Compact Units With Excellent Flexibility** Mountable on simple fixtures or the most complex automated production lines.
- **Rugged Construction** - Minimizes downtime and maintenance costs.

**RECOMMENDED LINCOLN ELECTRIC POWER SOURCES**
- Idealarc® DC-600, DC-655, DC-1000, DC-1500 and CV-655.

**APPLICATIONS**
- Heavy Equipment Fabrication
- Structural Fabrication

**AVAILABLE MODELS**

**FOR SUBMERGED ARC WELDING**

**NA-5S HEAD**
Includes wire feed head with straightener for solid wire, flux hopper with automatic valve and head mounting. Also includes electrode cables from control box to wire contact assembly, and cross seam adjuster. Does not include control box or wire reel, brake and mounting.

Order K346A, K346B

**NA-5SF HEAD**
Includes wire feed head with straightener for solid wire. Does not include control box or wire reel, brake and mounting, flux hopper with automatic valve and head mounting, cross seam adjuster, head mounting parts or electrode cable from control box to wire contact assembly.

Order K347A, K347B

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**Input Power**
115 VAC 50/60 Hz

**Wire Size Range**
.035 - 7/32 in. (0.9 - 5.6 mm)

**Wire Feed Speed Range**
25-775 ipm
(0.6-16.5 m/min)

**Net Weight/Dimensions (H x W x D)**
41 lbs. (18.6 kg)
12.75 x 18.5 x 22.25 in.
(324 x 470 x 565 mm)

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**AC Input Power required for all models is 115 (110) volts, 60 or 50 hertz of 350 volt-amperes capacity for the head and controls. An additional 250 volt-amperes is required for the Lincoln Electric travel carriage and more may be needed for other travel mechanisms. This power can be obtained from the Lincoln Electric power source.**

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**THE LINCOLN ELECTRIC COMPANY**
22801 St. Clair Avenue • Cleveland, OH • 44117-1199 • U.S.A.
PH: +1.216-481-8100 • www.lincolnelectric.com

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**ISO 9001:2000**

**ISO 14001:2004**

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**THE WELDING EXPERTS**

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**Lincoln Electric**

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**Two Year Extended Warranty Available in the U.S.A. and Canada**

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KEY CONTROLS

1. Control Power Switch – Turns wire feeder input power on and off. Also serves as an emergency stop switch.
2. Pilot Light – Shows when the electrode is “hot”.
3. Inch Pushbuttons – Feed electrode up and down when not welding.
4. Start and Stop Pushbuttons – Control welding cycles.
5. Meter Value Pushbutton – Monitor either the preset values or the actual values.
6. Timer Control – For burnback and/or wire react time.
7. Crater Module (optional) – Controls procedure for an adjustable period of time to regulate bead size or fill craters at the end of the weld.
8. Weld Timer (optional) – Eliminates the need to press stop pushbutton.
9. Lockable Cover – Lockout procedure controls when necessary.
10. Digital Display – Monitor wire feed speed and voltage on separate meters.
11. Start Module (optional) – Controls penetration, bead size, or other factors for an adjustable time at the start of the weld.
12. WFS and Voltage Preset Controls – Preset wire feed speed and voltage prior to and during welding. These controls eliminate returning to the power source for routine procedure changes.
13. Travel Switch – Controls the travel mechanism for automatic starting and stopping when welding, travel without welding during setup and travel off.

REQUIRED EQUIPMENT

NA-5S and NA-5SF
For Submerged Arc Welding

DC Power Source –
Constant Voltage type with on-off control of power source output.

Two 4/0 electrode cables and the multi-conductor control cable.

K335-26 Extension – Motor, flux hopper and electrode cables. Optional when more than 4 ft. (1.2 m) is required.

4 ft. (1.2 m) Motor Cord – Included with K346.

4 ft. (1.2 m) Electrode Cables

4 ft. (1.2 m) Flux Hopper Cord – Included with K346.

Work Cable – Two or more 4/0

K299 Reel and Mounting – Order separately.

Solid Wire Straightener Head

Flux Hopper – Included with K346.

Contact Nozzle (optional)

Lincoln Electric
THE WELDING EXPERTS®
RECOMMENDED ACCESSORIES

Solenoid Assembly
Valve to automatically control water flow when using cooling attachment on K148 contact assemblies. Can also be used to control gas. Order K223

Starting or Crater Module
Permits additional settings of wire feed speed and voltage for an adjustable period of time (10 seconds max). Can be used for either a starting procedure or a crater fill procedure. If both are required, two assemblies must be ordered. Order K334

Remote Interface Module
Permits remote operation of the NA-5 Inch Up, Inch Down, Start and Stop Functions by either of the following user-supplied external signals and provides electrical isolation of the NA-5 control circuitry from these signals:
- Switches
  Momentary closure of contacts rated for 24 volts, 5 milliampere, DC.
- 24 Volt Signals
  Momentary application of 24 volt ±10% AC or DC signal capable of 5 milliampere steady state. (15 amp peak capacitive in rush) per input.
This module can be used with all codes of NA-5 Controls and replaces the earlier K336 Remote Pushbutton Interface Module, which provided for only external switch closure signals. Order K336

Weld Timer Module
Permits setting of weld time for an adjustable period of time. Eliminates need to press stop pushbutton. The timer unit is adjustable from 0.00 - 9.99 seconds. Order K337-10

Control To Head Extension
Cable Assembly
The standard head is equipped with cables which permit the head to be mounted up to four feet from the controls. “F” models, however, do not include electrode cables. When the head is mounted further away from the control, extension cable assembly must be purchased. For the NA-5 head, includes motor, tachometer, and flux valve leads extensions with polarized plugs and electrode 20 ft. length. Order K339-26

Recommended for the NA-5NL and SF heads. It is the same as the K335 without the flux valve lead extension. Available in 46 ft. lengths. Order K339-46

Mounting Kit
For use if the NA-5 control box is to be mounted on the carriage. Order T14469

SINGLE ELECTRODE

Submerged Arc Contact Nozzle Assembly for 3/32 in. (2.4 mm), 1/8 in. (3.2 mm) and 5/32 in. (4.0 mm) electrodes.
For 5/64 in. (2.0 mm), 3/16 in. (4.8 mm) or 3/32 in. (5.6 mm) sizes, order additional appropriate KP1962 tips. Outer flux cone gives full flux coverage with minimum consumption. (Rated up to 650 amps.) Order K231-1

K231 nozzle tips
Designed for long life.
Order KP1962-1B1 for 1/8 in. (3.2mm) wire
KP1962-2B1 for 3/16 in. (4.8 mm) wire
KP1962-3B1 for 5/32 in. (4.0 mm) wire
KP1962-4B1 for 1/8 in. (3.2 mm) wire
KP2062-2B1 for 7/32 in. (5.6 mm) wire
KP2062-4B1 for 5/64 in. (2.0 mm) wire

Narrow Gap Deep Grove Nozzle
For single arc 3/32 in. (2.4 mm) diameter wire welding on thick walled steel plate with nearly parallel-sided, narrow gap joint preparations.
Order K386

Contact Jaw Assembly
Single arc contact jaw assembly for 1/8-3/32 in. (3.2-5.6 mm) diameter wire. Rugged contact jaws for maximum life at currents over 600 amps. Order K226R

Horizontal Lift Adjuster
Provides 4 in. (102 mm) hand crank horizontal travel. Order K96

Vertical Lift Adjuster
Provides 4 in. (102 mm) hand crank adjustment of vertical head position. Also includes up to 3-3/4 in. (95.2 mm) in-and-out horizontal adjustment with stops that can be preset for simple repetition of the same adjustment. Order K29

SpreadArc Oscillator
Oscillates head across the line of travel. Calibrated dwell time and oscillation speed controls permit the SpreadArc to cover large areas quickly with smooth beads of uniform coverage with minimum consumption.
Order K278-1

TG-3 Self-Propelled Travel Carriage
The TG-3 travel carriage allows the mounting of up to two feed heads/controllers and wire reels to a beam for basic hard automation installations. Order K225 HCS (for 5-75 rpm)

Large Wire Twinarc® Contact Assemblies
Feeds two 5/64 in. (2.0 mm), 3/32 in. (2.4 mm) or 1/8 in. (3.2 mm) wires for submerged arc welding on “Fast-Fill” joints or hardfacing beads. Order K225

GENERAL OPTIONS

Concentric Flux Cone Assembly
For use with K148. Positive Contact Nozzle Assembly. Gives concentric flux coverage around the electrode. Order K25B

Positive Contact Assembly
For single arc welding at high currents (optional T12928 water cooling attachment recommended when welding over 600 amps).
Order K140A (for 3/32 to 1/8 in. wire)
Order K140B (for 5/32 to 3/16 in. wire)

ESO (Extended Stick-Out)
Extension Linc-Fill long stickout extension for K148A Single Arc Positive Contact Nozzle Assembly. Required for long stickout technique.
Order K149-5/32

5 in. Nozzle Extension
Extends the wire for subarc nozzles by 5 inches (up to 1/4 in. (6.4 mm) diameter wire).
Order KP2721-1

Mounting Kit
For use if the NA-5 contact box is to be mounted on the carriage. Order T14469

Horizontal Control To Head Extension
Cable Assembly
The standard head is equipped with cables which permit the head to be mounted up to four feet from the controls. “F” models, however, do not include electrode cables. When the head is mounted further away from the control, extension cable assembly must be purchased. For the NA-5 head, includes motor, tachometer, and flux valve leads extensions with polarized plugs and electrode 20 ft. length. Order K339-26

Recommended for the NA-5NL and SF heads. It is the same as the K335 without the flux valve lead extension. Available in 46 ft. lengths. Order K339-46

Tiny Twinarc® Wire Straightener
Straightens wire diameters .045 thru 3/32 in. (1.2 thru 2.4 mm). Particularly valuable on longer electrical stickout procedures. Order K281

Tiny Twinarc®
Feeds two 1/16, 5/64, or 3/32 in. (1.6, 2.0, or 2.4 mm) electrodes for high speed submerged arc welding on thin gauge (1.69 mm) to heavy plate. Includes contact nozzle, wire guides, drive rolls and guides, and a second wire reel and mounting bracket.
Order K129-1/16
K129-5/64
K129-3/32

KP1962-1B1 (for 5-75 ipm)
KP1962-2B1
KP1962-3B1
KP1962-4B1
KP1962-5B1
KP2062-2B1
KP2062-4B1
K129 nozzle tips
Order K129-1/16
K129-5/64
K129-3/32

Order K285

Order K338-46

Order K386

Order K96

Order KP1962-5B1
Order KP2062-5B1
Order K149-5/32
Order KP2721-1

Order K225

Order K225

Order K225

Order K225
Automatic Flux Hopper Assembly
Flux Hopper for MAXsa™ 29 Heads (included standard on the MAXsa™ 22 Heads).
Order K219

Wire Reel Assembly for
50-60 lb. Coils
Accommodates 50 lb. (22.7 kg) or 60 lb. (27.2 kg) coils of wire on automatic wire feeders. The unit includes a wire reel mounting spindle and braking system. Cannot be used with K2462-1.
Order K299

**For gear ratios shown.**

**For the K347 Head, order the K338 extension.**

**CUSTOMER ASSISTANCE POLICY**

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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.

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**RECOMMENDED ACCESSORIES**

**PRODUCT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Number</th>
<th>Input Power</th>
<th>Wire Feed Speed Range (ipm/min)</th>
<th>H x W x D inches (mm)</th>
<th>Net Weight (lbs. (kg))</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA-5S</td>
<td>K356-2</td>
<td>115 VAC</td>
<td>25-775 (0.6-16.5)</td>
<td>12.75 x 18.5 x 22.25 (324 x 470 x 565)</td>
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**For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.**