

NA-5 Control and Heads

Processes

Flux-Cored, Submerged Arc

Product Number

K356-2

See back for complete specs

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)

Automated Welding Systems

Improve productivity with the NA-5 automatic wire feeders. These systems have been specially designed to deposit more weld metal at fast travel speeds which eliminates bottlenecks and cuts costs.

FEATURES

- ▶ **Operating Versatility** - Easily adapts to a wide range of wire feed speeds and wire sizes.
- ▶ **Compact Units With Excellent Flexibility** Fits into 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.

WHAT'S REQUIRED

- ▶ Nozzle Assembly
- ▶ Control Cable
- ▶ Weld Power Cable
- ▶ Power Source
- ▶ Wire Reel(s) and mounting

WHAT'S INCLUDED

- ▶ 10 ft. (3.1 m) Control Cable
- ▶ Specific Drive Roll Kit with Each Head
- ▶ Wire Straightener with Each Head

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.

APPLICATIONS

- ▶ Heavy Equipment Fabrication
- ▶ Structural Fabrication



Shown: K356-2
NA-5



Shown: K346A
NA5-S Head
(Shown with
K231-1 Nozzle)

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

INPUT



OUTPUT



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



KEY CONTROLS



- 1 Control power switch turns wire feeder input power on and off. Also serves as an emergency stop switch.
- 2 Pilot light to show 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 Means for having the meters read either the preset values or the actual values.
- 6 Timer control for burnback and/or wire react time.
- 7 Optional crater module (with preset feature) controls procedure for an adjustable period of time to regulate bead size or fill craters at the end of the weld.
- 8 Optional weld timer which eliminates the need to press stop pushbutton.
- 9 Lockable cover over procedure setting controls.
- 10 Digital display of both wire feed speed and voltage on separate meters.
- 11 Optional start module (with preset features) controls penetration, bead size, or other factors for an adjustable time at the start of the weld.
- 12 Controls for presetting of 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.

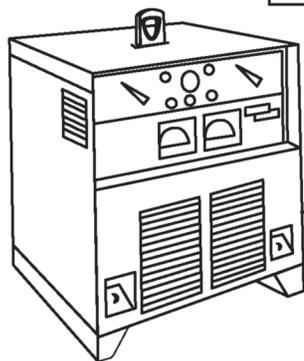
REQUIRED EQUIPMENT

NA-5S and NA-5SF

For Submerged Arc Welding

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

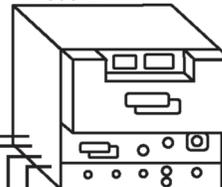
DC Power Source –
Constant Voltage type with on-off control of power source output.



Work Cable –
Two or more 4/0

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

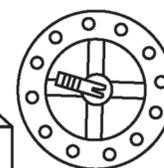
NA-5 Control
K356-2



4 ft. (1.2 m) Motor Cord –
Included with K346 and K347.

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

4 ft. (1.2 m) Electrode Cables –
Included with K331.



K299 Reel and Mounting – Order separately.

Solid Wire Straightener Head

Flux Hopper – Included with K346.

Contact Nozzle
(optional)



Solenoid Assembly
Valve to automatically control water flow when using K239 or 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:
Order K336

- **Switches**
Momentary closure of contacts rated for 24 volts, 5 milliamperes, DC.
- **24 Volt Signals**
Momentary application of 24 volt $\pm 10\%$ AC or DC signal capable of 5 milliamperes 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.



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 assemblies must be purchased. For the NA-5S head: Includes motor, tachometer, and flux valve lead extensions with polarized plugs and electrode. 26 ft. length.
Order K335-26



For the NA-5N, and SF heads, it is the same as the K335 without the flux valve lead extension. Available in 46 ft. lengths.
Order K338-46

Wire Size Conversion Kits
To convert wire feeder for different sized electrodes. Includes drive rolls and guide tubes.

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 7/32 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 3/32 in. (2.4 mm) wire
 - KP1962-4B1** for 5/32 in. (4.0 mm) wire
 - KP1962-5B1** for 7/32 in. (5.6 mm) wire
 - KP2082-2B1** for 5/64 in. (2.0 mm) wire



Narrow Gap Deep Groove 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 1/8-7/32 in. (3.2-5.6 mm) diameter wire. Rugged contact jaws for maximum life at currents over 600 amps.
Order K226R



TWINARC®
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 welds on thin gauge (1.89 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



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 K148B, Positive Contact Nozzle Assembly. Gives concentric flux coverage around the electrode.
Order K285



Positive Contact Assembly
For single arc welding at high currents (optional T12928 water cooling attachment recommended when welding over 600 amps).
Order K148A (for 3/32 to 1/8 in. wire)
Order K148B (for 5/32 to 3/16 in. wire)



ES0 (Extended Stick-Out) Extension
Linc-Fill long stickout extension for K148A Single Arc Positive Contact Nozzle Assembly. Required for long stickout technique.
Order K149-1/8
K149-3/32
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



Horizontal Head Adjuster
Provides crank adjustment of head position. Has 2 in. (51 mm) horizontal travel.
Order K96

Vertical Lift Adjuster
Provides 4 in. (102 mm) hand crank adjustment of vertical head position. It 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 minimum admixture.
Order K278-1



RECOMMENDED ACCESSORIES TO EXPAND MACHINE CAPABILITIES



TC-3 Self-Propelled Travel Carriage

The TC-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 K325 HCS
(for 5-75 ipm)

Order K325 HCF
(for 15-270 ipm)
(Made to order)



Tandem Reels

Two Wire Reel Mounting for TC-3.

Order K390



Tandem Arc Framework

Provides mountings with desired positioning adjustments for two standard Automatic Wire Feed Heads. Includes insulation and hardware to permit direct mounting to a high capacity TC-3 Carriage, or to the user's gantry or fixture for either direction of travel.

Order K387



Wire Straightener (Subarc) up to 7/32 in. (5.6 mm)

Includes a three roll wire straightener with adjustable pressure. (1 included with each tractor and MAXsa™ Feed Head.)

Order K1733-5



Automatic Flux Hopper Assembly

Flux Hopper for MAXsa™ 29 Heads (included standard on the MAXsa™ 22 Heads).

Order K219



Flux Hopper for

Tandem Arc Flux Hopper for K387 mountings.

Order K389



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



Horizontal Adjuster

Provides crank adjustment of head position. Has 2 in. (51 mm) horizontal travel.

Order K96

DRIVE ROLL / GUIDE TUBE KITS

Gear Ratio Head	Wire Size in. (mm)	KP Number
142:1 and 95:1	3/32 – 7/32 (2.4 – 5.6) 1/16, 5/64, 3/32 (1.6, 2.0, 2.4)	KP1899-1 KP1899-2
57:1	1/16, 5/64, 3/32 (1.6, 2.0, 2.4) .035, .045, .052 (0.9, 1.1, 1.3) .045 – .052 Cored (1.1 – 1.3)	KP1899-2 KP1899-3 KP1899-4

WIRE SIZE CONVERSION KITS

Gearbox	Wire Size in. (mm)	Kit No.
142:1	3/32 – 7/32 (2.4 – 5.6) 1/16 – 3/32 (1.6 – 2.4)	T13724A T13724B
95:1	3/32 – 5/32 (2.4 – 4.0) 1/16 – 3/32 (1.6 – 2.4)	T13724A T13724B
57:1	1/16 – 3/32 (1.6 – 2.4) .035 – .052 (0.9 – 1.3) .045 – .052 (1.1 – 1.3) Cored	T13724B T13724C T13724D

PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Power	Wire Feed Speed Range ipm (m/min)	H x W x D inches (mm)	Net Weight lbs. (kg)
NA-5 Control	K356-2	115 VAC 50/60 HZ	25-775 (0.6-16.5)	12.75 x 18.5 x 22.25 (324 x 470 x 565)	41 (18.6)

For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.

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 information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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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.

NA-5S AND NA-5SF

Product Name	Product Number	Wire Size in. (mm)	Gear Ratio	Wire Feed Speed ipm (m/min)	Max. Solid Wire Size ⁽²⁾ in. (mm)
NA-5S	K346A	3/32-7/32 (2.4-5.6)	142:1	15-290 (0.4-7.4)	7/32 (5.6)
NA-5S	K346B	1/16-3/32 (1.6-2.4)	95:1	22-425 (0.6-10.8)	1/8 (3.2)
NA-5SF	K347A ⁽¹⁾	3/32-7/32 (2.4-5.6)	142:1	15-290 (0.4-7.4)	7/32 (5.6)
NA-5SF	K347B ⁽¹⁾	1/16-3/32 (1.6-2.4)	95:1	22-425 (0.6-10.8)	1/8 (3.2)

⁽¹⁾ For the K347 Head, order the K338 extension.

⁽²⁾ For gear ratios shown.