

# Product Information

## Model ALC-701 Arc Length Control

- Microprocessor Control
- DC or AC Applications
- GTAW (TIG) or Plasma
- Large weight capacity
- Precision voltage control
- User-friendly

### ALC-701 Arc Length Control

Used with either GTAW (TIG) or Plasma (PAW) welding, the Jetline Arc Length Control maintains a constant preset arc length via control of the arc voltage.

Arc Length Controls yield the following benefits:

- Maintain constant weld penetration on uneven surfaces.
- Regulation of welding voltage for precise, repeatable procedures.
- Easy setup between different parts.
- Minimum requirements for operator intervention.
- Higher weld travel speeds.
- Compensation for electrode erosion.
- Automatic setting of the starting arc gap.

### How does it work?

The arc length control measures arc voltage and compares the samples to the operator setting. To maintain the set arc length, the control works with a field proven servo drive to move the torch up or down as required.

The arc length control works with (GTAW) TIG and Plasma power sources, either inverter or conventional, in DC, straight and reverse polarity or with AC welding currents. The arc length control is equally accurate and stable in pulsed or non-pulsed current mode. A simple remote cable interface is all that is required.



Model 9790 Microprocessor  
Arc Length Control

The ALC-701 offers the widest range of features and benefits of any control in its class.

### 9790 Control - The Brains

Using a microprocessor, proven for its use in the welding environment, the 9790 control yields superior performance. Jetline's experience in the design of this type of control for arc welding applications provides the latest and best control of arc length. Some of the key benefits include:

- Backlit graphic LCD display for convenient reading and setup regardless of shop lighting conditions.
- The LCD displays four lines of information.
- Intuitive arrows rather than a lot of dials and switches allow you to input and change settings and parameters.
- The polycarbonate overlay includes integral "touch pads" in place of conventional push buttons.
- Electrical touch retract (the electrode touches the work and then retracts) allows the starting arc gap to be automatically preset for every weld - the operator has no need for feeler gauges or to view the distance.
- Once the touch retract sequence has set the length, the actual arc length regulation can be delayed for up to 99 seconds as the power source, pre-purge arc initiation circuit, upslope, wire feed and oscillation take place.

# ALC-701 ARC LENGTH CONTROL

The 9790 control is enclosed in a sealed industrial style steel cabinet. All connections are made with industrial grade Amphenol® plugs and sockets. The control is designed for easy panel mounting and can be located up to 75 ft. (23 m) from the actuator holding the welding torch.

## ALC-401-60D - The Brawn

The ALC-401-60D actuator consists of a rugged servo driven motor slide built for years of continuous service. The ball screw design coupled with two hardened and ground shafts using recirculating ball bushings gives a maximum travel speed of 30 inches/min (750 mm/min). The entire mechanism is enclosed in a steel housing and can handle up to 40 lbs (18 kg) at the centerline of the torch. This means that you can mount the wire delivery guide mechanism, magnetic arc probe, video monitoring camera or special gas purge shroud to the torch without worry of overloading.

## Unique Features and Benefits

- ▶ LCD display lets you know set voltage and actual voltage while welding. If remote from the welding operation, it also indicates if the arc is on or off.
- ▶ Electronic touch retract is the most sensitive and exact method of setting electrode to work distance. Minimum force is exerted on the workpiece during setup.
- ▶ Wide range of start gap settings from 0 to 0.25 inches (0 to 6 mm).
- ▶ Sensitivity can be set to activate the drive to respond immediately to the smallest change in arc voltage.
- ▶ Deadband adjusts to a window which you can define. The operator can set the window from 0 to 3 volts around the required operating point.
- ▶ Start delay allows other operations to occur prior to the ALC taking over control.
- ▶ Retract delay allows post purge and other operations to occur after the welding is complete.
- ▶ Stop retract gives you the ability to move the torch away from the work a distance up to the full actuator length.
- ▶ Adjustable speed of retraction allows high speed part changes.
- ▶ A unique brake design eliminates the torch drifting into the work when the power is disabled.

## Optional Items

### RP-401 REMOTE PENDANT CONTROL

This pendant control is designed for use in applications where the operator is unable to conveniently reach the weld head or arc length control. The pendant is fitted with a 15 ft. (4.5 m) cable and Amphenol® plug and includes the following functions:

- Voltage Control (10-turn potentiometer)
- Volt sensing lockout switch (Auto/Manual)
- Actuator Jog Up/Down Switch

## Associated Controls

Jetline designs and manufactures a complete range of controls and fixtures for GTAW (TIG) and Plasma (PAW) welding.

### Arc Oscillators

These are available with mechanical or magnetic oscillation control. In GTAW (TIG) and Plasma (PAW) welding, it is normal to use a magnetic arc oscillator to move or stabilize the arc.

### Cold Wire Feeders

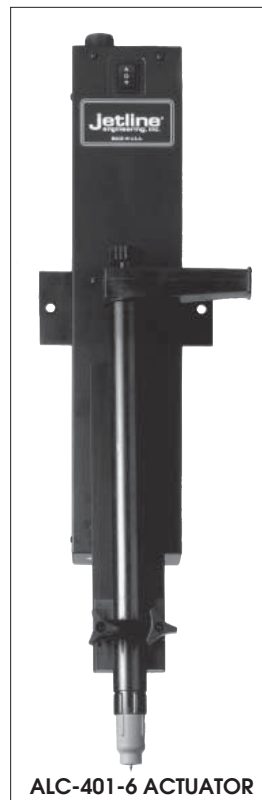
For precise delivery of filler metal to the weld pool, Jetline offers a complete range of wire feeders, both for cold and hot wire feed.

### Video Monitoring Systems

Jetline video monitoring systems use color cameras with special filtering to provide an enlarged view of the weld area before, during and after welding. A zoom model provides unequal views of the weld.

### 9900 Controller

The 9900 is an industrial computer using simple interfaces to control the full range of accompanying weld hardware modules. Due to the modular design, the system can easily be expanded or changed as new requirements arise. System parameters and variables are incorporated in the welding programs offering simplicity and efficiency for basic welding applications or full control of the most demanding ones.



ALC-401-6 ACTUATOR

# ALC-701 ARC LENGTH CONTROL

## Fixtures

In addition to its range of arc welding controls, Jetline designs and manufactures a superior family of fixturing products. These are used to hold and/or move the part to be welded or the welding torch and maintain their relative position.

Jetline's fixturing includes:

- **Longitudinal Seamwelders**  
Used for linear welding of sheets, cylinders, rectangles and cone sections.
- **Circumferential Welding Systems**  
For circumferential welding of tanks and vessels, single or multi-torch applications.
- **Precision Welding Lathes**  
For precision filters, valves and other small parts.
- **Side Beam Tracks and Travel Carriages**  
To move the welding equipment along a weld joint.
- **Positioners and Turning Rolls**  
For a wide range of mechanized circumferential welding applications.

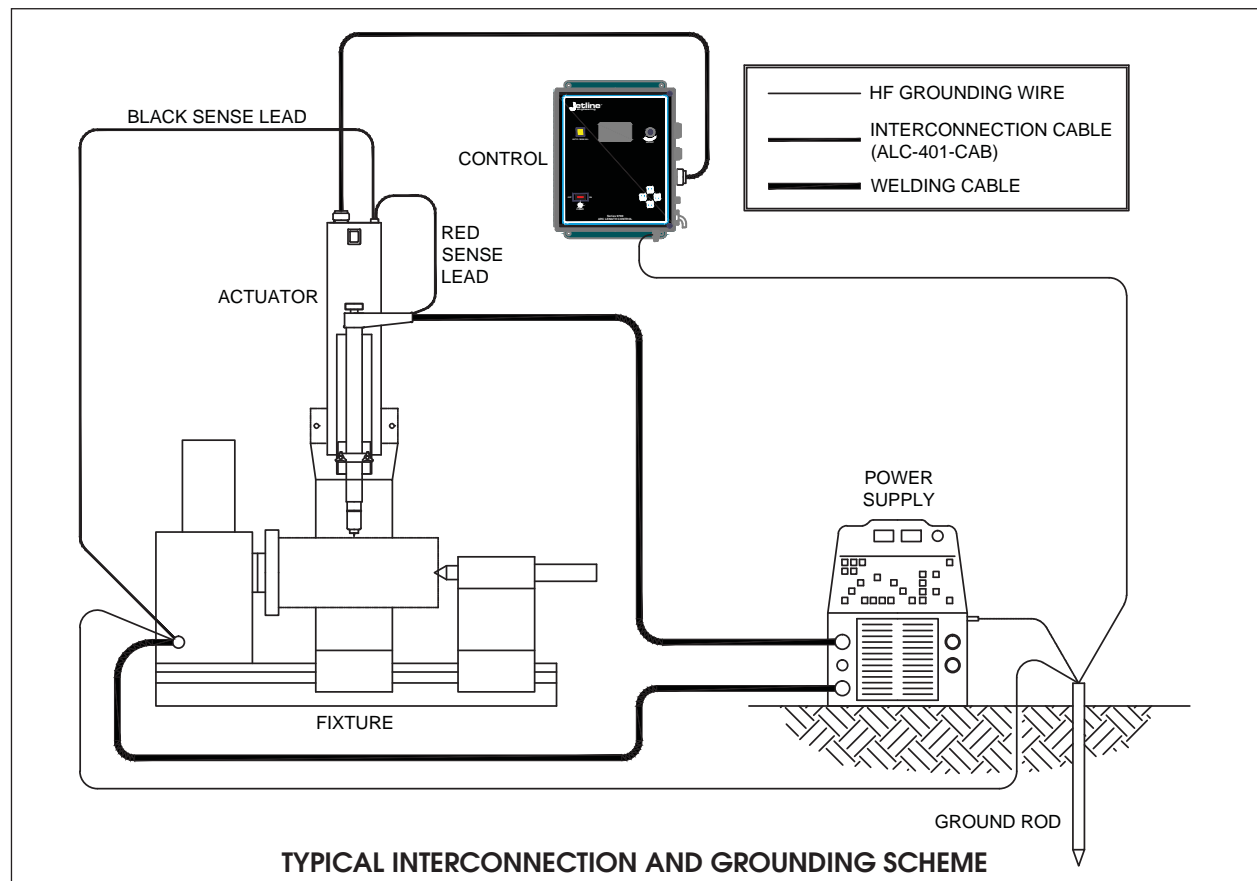
Contact our Customer Support Department for further information on any of these products or for advice on how to weld your application.

## How to order

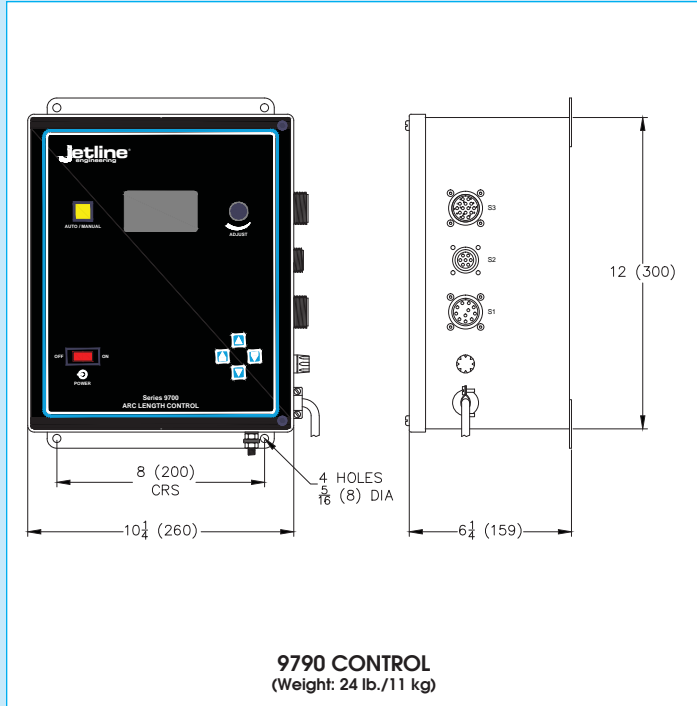
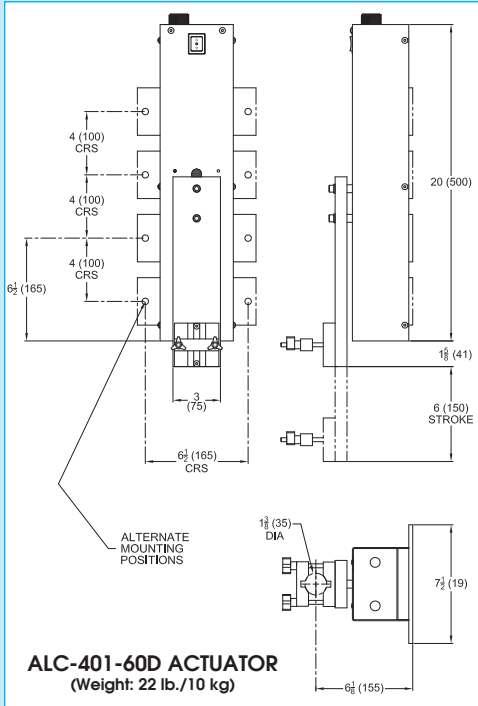
Item	Description	Part No.
	Complete System	ALC-701-6A
	Includes:	
1	Control Unit	9790
2	Actuator - 6" (150 mm) stroke	ALC-401-60D
3	Interconnection Cable - 10 ft. (3 m) long	ALC-401-CAB

### Optional items include:

- Actuator  
- 12" (300 mm) stroke ALC-401-120D  
- 4" (100 mm) stroke ALC-401-CH4A  
- 1" (25 mm) stroke ALC-401-CH1A
- Interconnection Cable (Where cable is xx ft. long) ALC-401-CAB-xx
- Cable to connect to 9700T 9600S1-ALC-3  
- 3 ft. (1 m) long
- Remote Control Pendant RP-401  
- 15 Ft. (4.5 m) Cable
- Precision Cross-Slide 1016A



# ALC-701 ARC LENGTH CONTROL



All dimensions are in inches (millimeters)

## Specifications

### Actuator:

Drive:	Recirculating Ball Screw
Mechanism:	Recirculating Ball Bushings
Stroke:	6" (150 mm) standard
Torch Holder:	Universal Vee-Clamp
Torch Diameters:	3/4" to 1 1/2" (19 to 38 mm)
Weight Capacity:	40 lbs. (18 kg)
Max. Drive Speed:	30 ipm (750 mm/min)
Accuracy:	±1% of setting or 0.1V (whichever is the greater)
Prepositioning:	±0.002" (0.05 mm)
Touch Retract:	0 to 1/4" (0 to 6 mm)
Stop Retract:	0 to 9.9" (0 to 250 mm)

### Control:

Processor:	Microprocessor
Display:	Graphic Backlit LCD
Panel:	Polycarbonate Overlay
Volt Sensing:	5 to 50V DC or AC
Start Delay:	0 to 99.9 seconds
Retract Delay:	0 to 99.9 seconds
Sensitivity:	0 to 99% adjustable
Deadband:	0 to 3.0V adjustable
Temperature:	32 to 130°F (0 to 55°C)
Cooling:	None, Sealed cabinet
Input Cord:	8 ft. (2.4 m), 3 prong
Input:	120/240 VAC, 50/60 Hz Single phase, 200VA

Contact Jetline for complete ordering information

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