

# Product Information

## Longitudinal Seam Welders

- Complete Product Offering
- Reliable, Simple to Operate
- All Weldable Materials
- Many Custom Options
- No Part Size Limitation
- For All Arc Welding Processes

Longitudinal seam welding is a process used to produce linear welds on a wide variety of parts. For many industrial applications it is necessary to form the material into a desired shape, e.g. a cylinder or rectangular tube, and then weld the edges to form a rigid structure.

The traditional method of doing this is to manually hold the edges in alignment, tack weld them and then complete the linear weld. This is done manually or by use of a simple carriage carrying the welding torch. This type of procedure is costly and time consuming for the following reasons:

- Holding the edges accurately in alignment is difficult for the full length of the part.
- Tack welding takes time and leads to defects in the area of the tack weld.
- There is little effective chilling of the weld joint area leading to distortion and oxidation of the weld and surrounding area.
- Maintaining the dimensional accuracy of the part is difficult.

Jetline longitudinal seam welders provide a solution to these problems. They optimize the welding process, reduce welding costs and improve the quality of the weld. They are designed for the straight line welding of all weldable materials in thicknesses varying from 0.005" (0.1 mm) to 3/8" (10 mm). Thicker materials can be accommodated using Jetline's unique mandrel adjustment capability.



All Jetline seam welders use "chill-shunt" tooling which absorbs and dissipates heat through the use of additional mass operating under pressure against the work piece in the weld zone.

The longitudinal seam welder clamps the materials to be welded firmly in alignment giving uniform chill to the weld. It also provides the facility to move the welding equipment accurately along the weld seam. This produces a butt weld free of melt-through, burnbacks, extreme shrinkage or distortion.

Jetline longitudinal seam welders feature the ultimate in ease-of-operation and accuracy. Modern, simplified controls reduce operator fatigue. The shallow clamping structure design increases visibility and efficiency.

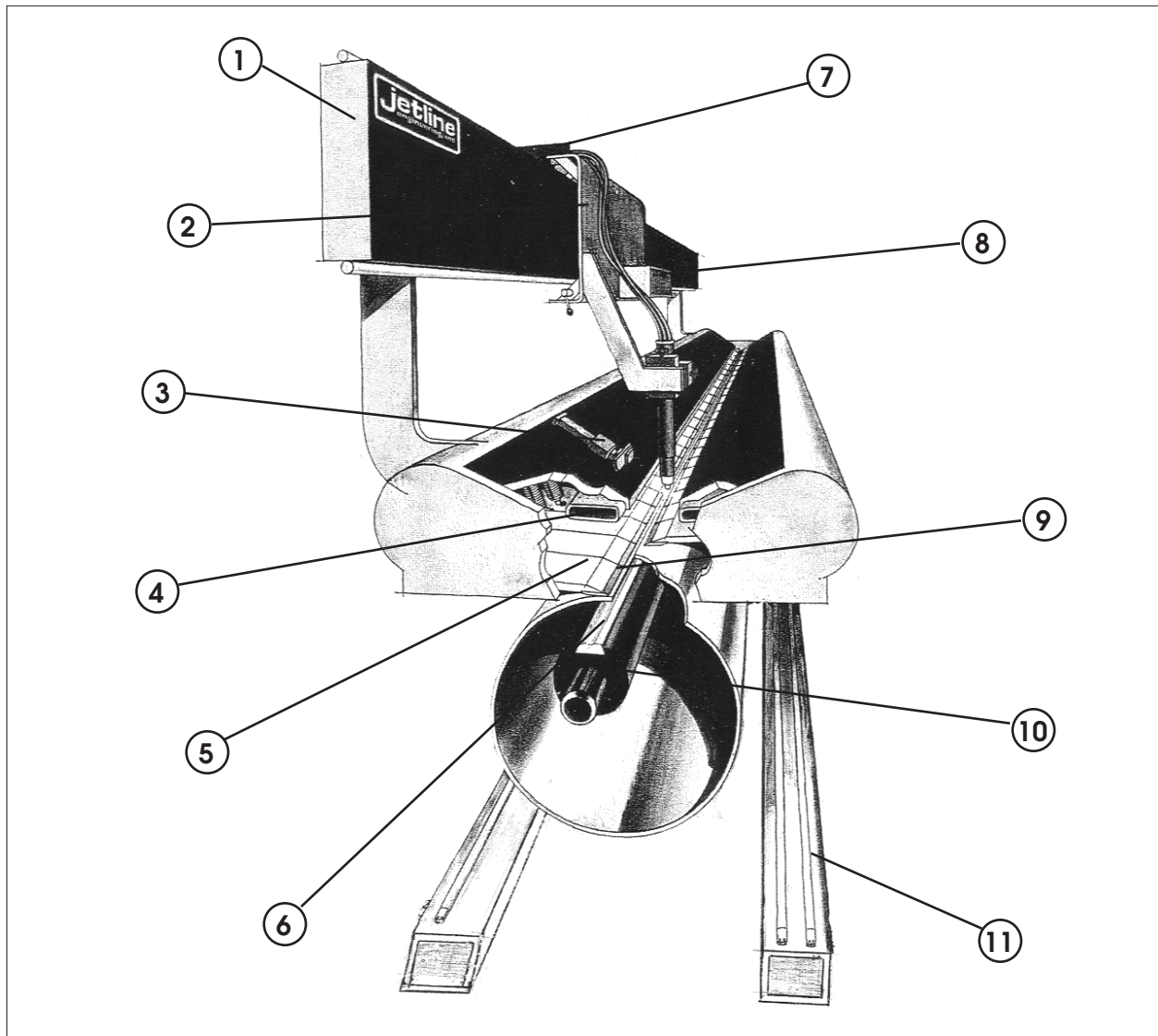
Jetline manufactures a standard range of seam welders for part lengths up to 240" (6 m). Longer lengths are available on special order. The range includes the following models:

- External Style
- Internal Style
- Combination Style
- Elevating Style
- Bench Style

Jetline has manufactured seam welders for more than 50 years and offers the widest range available from any manufacturer. Contact us for all your seam welding requirements.

**Jetline is the world's premier manufacturer of seam welders with over 50 years experience**

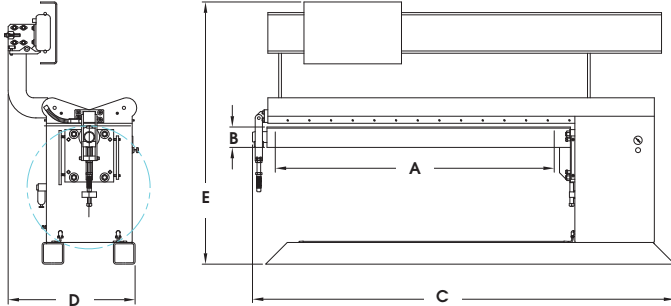
## STANDARD SEAM WELDER FEATURES



- ① Unique side beam track uses case hardened roundways for smooth, precise carriage travel. Linear accuracy is within  $\pm 0.005$ " (0.1 mm) on the precision model and  $\pm 0.015$ " (0.3 mm) on the standard model.
- ② The travel carriage rides on the track using hardened bearings. The 9627 microprocessor controller provides precision speed control. Various speed ranges are available, standard speed holding accuracy is  $\pm 1\%$  of the rated speed. A precision model provides  $\pm 0.1\%$  speed holding accuracy.
- ③ Various types of alignment gages are available for the accurate placement of the sheet.
- ④ Air-operated clamping hose generates a clamping force of up to 5000 lb/ft (2270 kg/300 mm).
- ⑤ Hold down fingers are aluminum to assist in the chilling of the weld joint. They are of a precise width to assure consistent chill and to avoid aspiration of air in critical applications.
- ⑥ Back-up bar insert. Grooved to specification. Gas backing is optional. Made from copper, steel, or stainless steel. Special configurations are available as required.
- ⑦ Cable support bracket. A flexible cable support system is optionally available to support all the hoses and cables on the carriage.
- ⑧ 9627 Microprocessor-based travel speed control is supplied as the standard controller with all Jetline seam welders. The control interfaces with suitable power supplies for weld sequence control. Jetline offers a range of weld system controllers.
- ⑨ Dual-edged, replaceable copper finger tip. Precision machined for distortion-free welding.
- ⑩ Back-up mandrel, water cooling is optional, special mandrels are available on request.
- ⑪ "Toe-Touch" tapeswitch control. Activates the finger clamping. A pendant control is optionally available.

# EXTERNAL STYLE SEAM WELDERS

**LWS - Standard**  
**LWP - Precision**  
**LWX - Ultra-Precision**



Model Number	Welding Length "A" Inches (mm)	Min. Dia. Piecepart "B" Inches (mm)	Overall Length "C" Inches (mm)	Overall Width "D" Inches (mm)	Overall Height "E" Inches (mm)	Shipping Wt. (Approx) Lbs. (kg)
LW_ - 24	24 (610)	2 <sup>5</sup> / <sub>8</sub> (67)	70 (1,780)	40 (1,000)	69 (1,750)	2,300 (1,040)
LW_ - 36	36 (915)	3 <sup>1</sup> / <sub>2</sub> (90)	82 (2,080)	40 (1,000)	69 (1,750)	2,600 (1,180)
LW_ - 48	48 (1,220)	4 <sup>1</sup> / <sub>4</sub> (108)	94 (2,390)	40 (1,000)	69 (1,750)	4,000 (1,815)
LW_ - 60	60 (1,525)	5 <sup>1</sup> / <sub>4</sub> (133)	106 (2,690)	40 (1,000)	69 (1,750)	4,700 (2,130)
LW_ - 72	72 (1,830)	6 (152)	118 (3,000)	40 (1,000)	69 (1,750)	5,300 (2,400)
LW_ - 84	84 (2,135)	6 <sup>7</sup> / <sub>8</sub> (175)	130 (3,300)	40 (1,000)	69 (1,750)	5,900 (2,675)
LW_ - 96	96 (2,440)	7 <sup>1</sup> / <sub>4</sub> (184)	142 (3,605)	40 (1,000)	69 (1,750)	6,400 (2,900)
LW_ - 120	120 (3,050)	9 <sup>1</sup> / <sub>2</sub> (241)	176 (4,470)	42 (1,070)	76 (1,930)	12,000 (5,450)
LW_ - 144	144 (3,660)	12 <sup>1</sup> / <sub>4</sub> (311)	200 (5,080)	42 (1,070)	76 (1,930)	13,000 (5,900)
LW_ - 168	168 (4,270)	15 <sup>1</sup> / <sub>4</sub> (387)	224 (5,690)	42 (1,070)	76 (1,930)	14,000 (6,350)
LW_ - 192	192 (4,875)	18 <sup>1</sup> / <sub>2</sub> (470)	248 (6,300)	42 (1,070)	76 (1,930)	15,000 (6,800)
LW_ - 216	216 (5,485)	21 <sup>1</sup> / <sub>4</sub> (540)	272 (6,900)	42 (1,070)	76 (1,930)	16,000 (7,250)
LW_ - 240	240 (6,100)	24 <sup>1</sup> / <sub>4</sub> (616)	296 (7,500)	42 (1,070)	76 (1,930)	17,000 (7,700)

LW\_ - Use S, P or X according to model

Maximum diameter part is 32" (810 mm)

## LWS - Standard External Seam Welder

For all weldable metals  
 For 0.020" to 3/8" (0.5 to 10 mm) thickness  
 Rack and Pinion carriage drive  
 Travel accuracy is ±0.015" (0.4 mm) per 10 ft (3 m)

## LWP - Precision External Seam Welder

As standard but designed for thin materials  
 For 0.005" to 3/8" (0.1 to 10 mm) thickness  
 Continuous hold down strips are standard  
 Travel accuracy is ±0.005" (0.1 mm) per 10 ft (3 m)

## LWX - Ultra-Precision Seam Welder

As precision but for critical applications  
 Linear drive replaces rack and pinion drive

Consult factory for:

Mandrel modification for other diameters or shapes  
 Installation of a riser for larger diameters

## Carriages and Speeds

Model	Speed Range		Speed Holding
	ipm	mm/min	
For seam welders up to 16 ft (4.8 m) long			
SWCB-3AB	2 - 100	50 - 2540	±1%
SWCB-3D	0.2 - 188	5 - 4775	±0.1%
For seam welders over 16 ft (4.8 m) long			
SWC-6A	4 - 165	100 - 4190	±1%
SWC-6B	3 - 108	75 - 2750	±1%
SWC-6C	2 - 67	50 - 1700	±1%
SWC-6D	1 - 45	25 - 1150	±1%
For LWX Ultra-Precision seam welders			
SWC-4A	4 - 170	100 - 4300	±1%
SWC-4B	2 - 85	50 - 2160	±1%
SWC-4C	0.32 - 160	8 - 4060	±0.1%
SWC-4D	0.22 - 106	5 - 2700	±0.1%

# INTERNAL STYLE SEAM WELDERS

## Model LWI-252

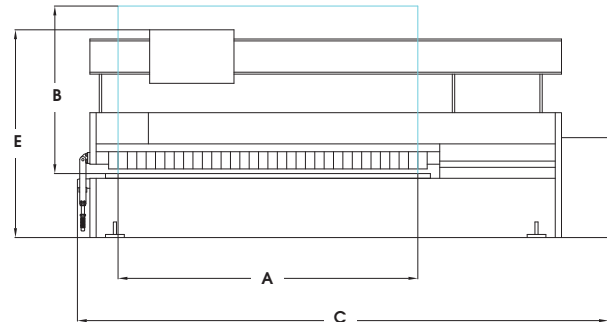
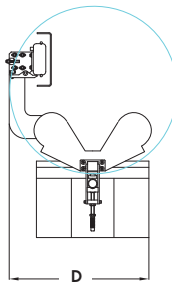
The internal style seam welder shown is designed for the welding of tanks used in the road transportation industry. It has a weld length of 252" (6 m) and powered feed is supplied to aid in the loading and unloading of the part. The system includes GTAW (TIG) welding process equipment capable of welding stainless steel material up to 3/8" (10 mm) thick.



The welding procedure is controlled by a 9627 microprocessor control providing precision travel speed control. Arc length control and cold wire feed are included. The complete welding process is monitored and controlled at the operator control station. Video monitoring can be included to provide the operator with a clear view of the welding area throughout the complete weld process.

Model Number	Welding Length "A" Inches (mm)	Min. Dia. Piecepart "B" Inches (mm)	Overall Length "C" Inches (mm)	Overall Width "D" Inches (mm)	Overall Height "E" Inches (mm)	Shipping Wt. (Approx) Lbs. (kg)
LWI - 72	72 (1,830)	55 (1,400)	146 (3,700)	38 (965)	44 (1,120)	5,500 (2,500)
LWI - 84	84 (2,135)	55 (1,400)	158 (4,000)	38 (965)	44 (1,120)	6,050 (2,750)
LWI - 96	96 (2,440)	55 (1,400)	170 (4,320)	38 (965)	44 (1,120)	6,600 (3,000)
LWI - 120	120 (3,050)	55 (1,400)	194 (4,925)	41 (1,040)	51 (1,300)	12,200 (5,530)
LWI - 144	144 (3,660)	55 (1,400)	218 (5,540)	41 (1,040)	51 (1,300)	13,300 (6,030)
LWI - 168	168 (4,270)	55 (1,400)	242 (6,150)	41 (1,040)	51 (1,300)	14,400 (6,530)
LWI - 192	192 (4,875)	60 (1,525)	266 (6,750)	43 (1,090)	53 (1,350)	15,500 (7,030)
LWI - 216	216 (5,485)	60 (1,525)	290 (7,370)	43 (1,090)	53 (1,350)	16,600 (7,530)
LWI - 240	240 (6,100)	60 (1,525)	314 (7,980)	43 (1,090)	53 (1,350)	17,700 (8,030)

Internal seam welders are designed for applications where the diameter of the parts to be welded is large. They do not employ a conventional mandrel. Instead, they are fitted with a sturdy base structure on which the insert holder and back-up insert are mounted. The advantage of this design is that there is virtually no limit to the diameter of cylinder that can be accommodated. The only limitations are the size and facilities of the building in which the seam welder is situated. Internal seam welders are manufactured to the same exacting specifications as the external range and have the following features:



- For all weldable materials
- For all arc welding processes
- For 0.020 to 3/8" (0.5 to 10 mm) thickness
- Rack and Pinion carriage drive
- Travel accuracy is  $\pm 0.015$ " (0.1 mm) per 10 ft (3 m)

A number of optional items are available to enhance the capability of the system for your application. Please consult Jetline for further details on these features.

### Carriages and Speeds

Model	Speed Range ipm	mm/min	Speed Holding
For seam welders up to 16 ft (4.8 m) long			
SWCB-3AB	2 - 100	50 - 2540	$\pm 1\%$
SWCB-3D	0.2 - 188	5 - 4775	$\pm 0.1\%$
For seam welders over 16 ft (4.8 m) long			
SWC-6A	4 - 165	100 - 4190	$\pm 1\%$
SWC-6B	3 - 108	75 - 2750	$\pm 1\%$
SWC-6C	2 - 67	50 - 1700	$\pm 1\%$
SWC-6D	1 - 45	25 - 1150	$\pm 1\%$



# COMBINATION STYLE SEAM WELDERS

## Model LWC-132

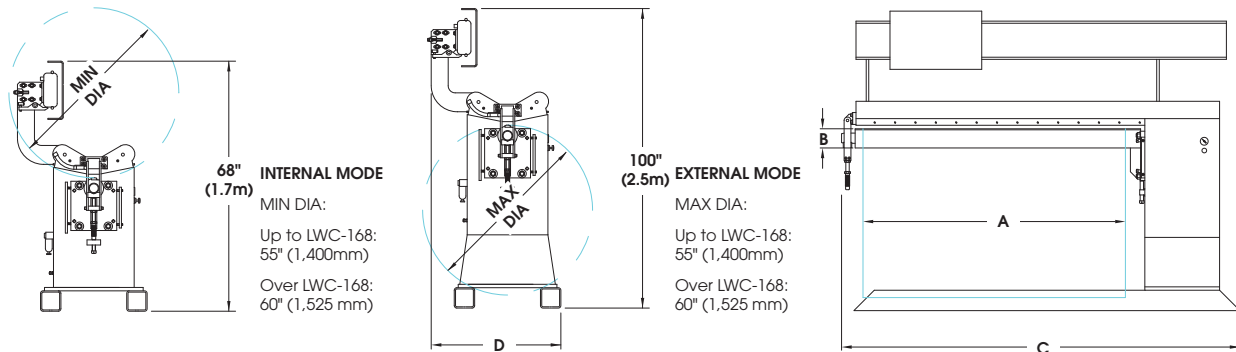
The combination style seam welder shown is designed for the welding of cylindrical tanks and vessels. The parts can be loaded either under (for smaller diameters) or over the tabletop (for larger diameters).

The system illustrated is fitted with Dual-Arc Plasma/TIG welding equipment capable of producing single pass welds in stainless steel material up to 3/8" (10 mm) thick. A 9500 4-channel microprocessor control, arc length control, wire feed, motorized cross seam adjustment and video monitoring complete the package.

The operator can monitor and control the welding process from the control podium conveniently located at floor level. Video monitoring provides the operator with a clear view of the welding area throughout the complete weld process.



Model Number	Welding Length "A" Inches (mm)	Min. Dia. Piecepart "B" Inches (mm)	Overall Length "C" Inches (mm)	Overall Width "D" Inches (mm)	Shipping Wt. (Approx) Lbs. (kg)
LWC - 72	72 (1,830)	6 (152)	118 (3,000)	40 (1,000)	5,300 (2,400)
LWC - 84	84 (2,135)	6 <sup>7</sup> / <sub>8</sub> (175)	130 (3,300)	40 (1,000)	5,900 (2,675)
LWC - 96	96 (2,440)	7 <sup>1</sup> / <sub>4</sub> (184)	142 (3,605)	40 (1,000)	6,400 (2,900)
LWC - 120	120 (3,050)	9 <sup>1</sup> / <sub>2</sub> (241)	176 (4,470)	42 (1,070)	12,000 (5,450)
LWC - 144	144 (3,660)	12 <sup>1</sup> / <sub>4</sub> (311)	200 (5,080)	42 (1,070)	13,000 (5,900)
LWC - 168	168 (4,270)	15 <sup>1</sup> / <sub>4</sub> (387)	224 (5,690)	42 (1,070)	14,000 (6,350)
LWC - 192	192 (4,875)	18 <sup>1</sup> / <sub>2</sub> (470)	248 (6,300)	42 (1,070)	15,000 (6,800)
LWC - 216	216 (5,485)	21 <sup>1</sup> / <sub>4</sub> (540)	272 (6,900)	42 (1,070)	16,000 (7,250)
LWC - 240	240 (6,100)	24 <sup>1</sup> / <sub>4</sub> (616)	296 (7,500)	42 (1,070)	17,000 (7,700)



Combination seam welders are supplied with a removable riser which increases the diameter of parts that can be accommodated underneath the tabletop. Removal of the riser reduces the overall height of the machine. The tabletop is designed to allow internal welding as well.

In the external mode, small diameter parts can be placed over the mandrel which defines the smallest acceptable diameter. With the riser fitted, the seam welder will accept parts up to the minimum diameter which can be loaded over the tabletop thus providing the widest range of acceptable diameters of all Jetline seam welders

### Carriages and Speeds

Model	Speed Range		Speed Holding
	ipm	mm/min	
For seam welders up to 16 ft (4.8 m) long			
SWCB-3AB	2 - 100	50 - 2540	±1%
SWCB-3D	0.2 - 188	5 - 4775	±0.1%
For seam welders over 16 ft (4.8 m) long			
SWC-6A	4 - 165	100 - 4190	±1%
SWC-6B	3 - 108	75 - 2750	±1%
SWC-6C	2 - 67	50 - 1700	±1%
SWC-6D	1 - 45	25 - 1150	±1%

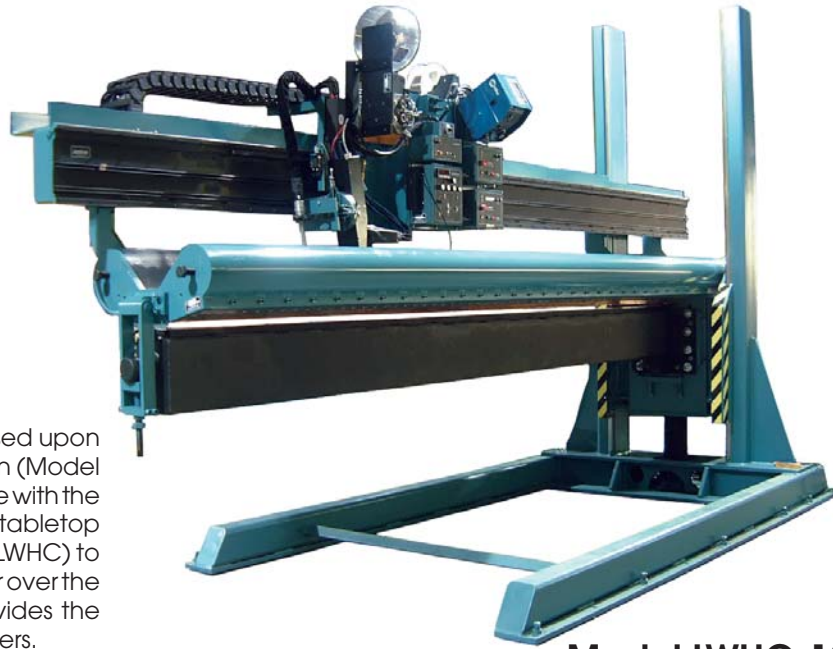
## ELEVATING STYLE SEAM WELDERS

The elevating style seam welder is essentially a variation of the combination model. Instead of a fixed height riser, the tabletop and mandrel on the elevating models are mounted on support columns on which they can be moved up or down. Movement is through the use of a hydraulic cylinder with special fail-safe valves to ensure that the unit remains firmly in position, even in the event of a power failure.

The tabletop design can be based upon the external seam welder version (Model LWH) where all the welding is done with the part below the tabletop. Or the tabletop can be an internal style (Model LWHC) to allow parts to be loaded under or over the tabletop. The internal style provides the maximum range of part diameters.

Elevating style seam welders can be fitted with any type of welding equipment for any arc welding process. Due to the elevated working height, they are often supplied with remote control facilities including video monitoring and operator control stations.

For details of capacities and sizes, consult the specifications for the combination seam welder.



**Model LWHC-120**

The model illustrated is shown complete with both GTAW/GMAW welding equipment. It has a weld length of 120" (3 m) and can be elevated to accept cylinders up to 96" (2.4 m) in diameter.

The system is fitted with a "droop-style" mandrel which can be hydraulically lowered to ease the loading and unloading of cylinders. Jetline can provide loading carts as required.

## BENCH STYLE SEAM WELDERS

Bench style seam welders are designed with a bracket to permit them to be mounted to a work bench or table. They are suitable for the GTAW (TIG) and Plasma (PAW) welding of materials from 0.020" to 3/16" (0.5 to 5 mm) thick. Actuation of the pneumatically powered clamping fingers is operated by foot-controlled air valves.

The unit illustrated is complete with an optional self-standing base. Toe-touch switches (as used on our other models) are available at extra cost. All bench seam welders use Jetline's unique 9627 microprocessor travel control which can interface with suitable power supplies and with a pneumatic torch lift to provide complete sequence control of the weld process.

Contact the factory for special mandrels and other non-standard features.



Model Number	Welding Length Inches (mm)	Min. Dia. Piecepart Inches (mm)	Overall Length Inches (mm)	Overall Width Inches (mm)	Overall Height Inches (mm)	Shipping Wt. (Approx) Lbs. (kg)
LWB - 6	6 (150)	2 <sup>5</sup> / <sub>8</sub> (67)	33 (840)	20 (510)	30 (760)	400 (181)
LWB - 12	12 (300)	2 <sup>5</sup> / <sub>8</sub> (67)	39 (1,000)	20 (510)	30 (760)	600 (270)
LWB - 18	18 (450)	2 <sup>5</sup> / <sub>8</sub> (67)	45 (1,150)	20 (510)	30 (760)	900 (410)
LWB - 24	24 (600)	2 <sup>5</sup> / <sub>8</sub> (67)	51 (1,300)	20 (510)	30 (760)	1200 (550)
LWB - 36	36 (900)	3 <sup>1</sup> / <sub>2</sub> (89)	63 (1,600)	20 (510)	30 (760)	1500 (680)

# STANDARD PERFORMANCE FEATURES



## Travel Carriage and Control

The combination of powered round-way travel carriages and side beams provide the high degree of accuracy demanded in today's precision welding. All carriages feature a large mounting surface which will accommodate all types of welding equipment. Each carriage is mounted on self-aligning, triple roller bearings held in "V"-shaped mounting blocks.

The carriage is driven by a DC servomotor with a rack and pinion drive to the track. Control of travel speed is provided by the 9627 microprocessor control which provides a standard speed holding accuracy of  $\pm 1\%$  of the rated speed.



## Safety Switch

The safety switch is activated when the mandrel latch is closed. It protects the mandrel by preventing clamping when the latch is disengaged.



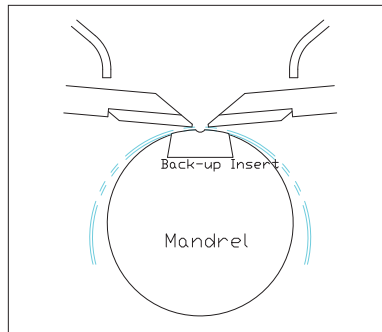
## Retractable Edge Aligning Device

Each seam welder has two alignment gages. Each gage has a blade that can be swung down to the centerline of the back-up insert to assist the operator in aligning the sheet to the centerline of the seam welder.



## Clamping Control

Toe touch pressure at any point along the length of the toe touch pad mounted on the seam welder support legs instantly clamps or releases the clamping fingers. This allows total flexibility in joint gap closing. The finger design permits the second side of the joint to be "pushed-in" as clamping takes place to provide a tight butt joint.



## Back-Up Mandrel

The mandrel is designed to support the part being welded and to restrain the clamping forces. It has a groove to accommodate interchangeable back-up inserts. The mandrel is usually of circular section but can be made to accept any shape of part, e.g. for corner welding or for the welding of square and rectangular sections.

Water cooling or preheating of the mandrel can be accomplished using optional facilities.

## Back-Up Bar Inserts

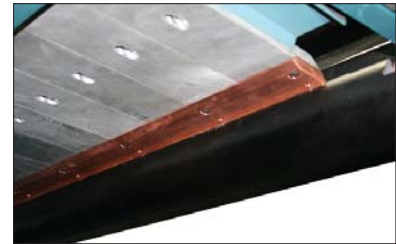
The insert is designed to slide into the groove on the mandrel which maintains the alignment of the insert. Inserts are quickly and easily exchanged. Most inserts are made of copper to carry away the heat generated during welding. The upper surface of the insert is grooved, the size and shape of the groove is designed specifically for the range of material and thicknesses to be welded. Additional inserts are available to cover a wide range of materials.

Inserts are available with or without gas back-up facilities. Where back-up gas is required, the insert includes a gas chamber and holes that feed the gas to the backing groove.



## Pressure Hold-down

Clamping pressure is adjustable up to 5,000 lb/ft (2270 kg/300 mm).



## Hold-down Fingers

Opposing rows of aluminum fingers clamp the edges to be welded securely against the mandrel's back-up bar insert. Precision, reversible copper tips are screwed to the ends of the fingers and can be easily replaced if damaged or worn. The fingers "float" to compensate for any unevenness in the workpiece.



## Continuous Hold-down Strips

All precision seam welders feature these strips which are optionally available on standard models. They are designed for the welding of materials under 0.020" (0.5 mm) thick and for the welding of refractory materials. They minimize the effect of air aspiration between the segmented fingers and create an uninterrupted "chill-shunt" effect along the entire length of the weld.

## Mandrel Tooling Adjustment

All Jetline seam welders incorporate a 2" (50 mm) back-up tooling adjustment. This is effected by lifting or lowering the whole mandrel and provides the ability to accommodate thicker back-up inserts or to adjust for the welding of different parts.



# OPTIONAL ACCESSORIES



## 9900 Controller

The Jetline 9900 Controller is an industrial computer using simple interfaces to control the full range of accompanying weld hardware modules. Up to 15 parameters or channels can be simultaneously controlled in closed loop format. Due to the modular design, the system can easily be expanded or changed as new requirements arise.

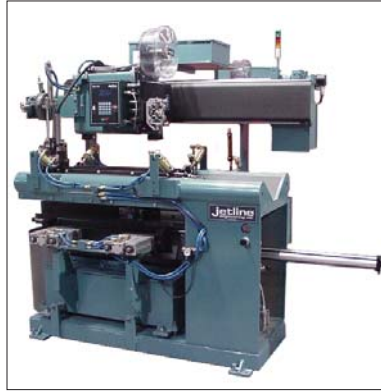
USB ports are available for connection of peripherals. Because the 9900 runs Windows XP® operating system, virtually unlimited program storage is available. The touch screen is of a robust design to give a long service life.

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.

For further details, request our separate 9900 Controller product brochure.

## Welding Gear

Jetline can interface the welding power supply and other weld gear with the seam welder to provide a completely integrated welding system. Equipment for any welding process can be fitted. All necessary cables and hoses will be supplied to provide a system that can be introduced into production immediately following delivery.



## Auto-Clamping Seam Welder

In addition to the extensive range of longitudinal seam welders shown in this brochure, Jetline manufactures the type illustrated above. This is a variation of a standard external seam welder with additional features to automate the aligning, clamping and welding of the parts.

Special air-operated blades mounted on the tabletop ensure the weld seam is aligned and correctly clamped.

Using this system, over 100 parts per hour can be produced. The system can be fitted with TIG or PAW welding capability. For further details, request our separate LWA product brochure.



## Cold and Hot Wire Feeders

Jetline wire feeders, both for cold and hot wire feeding, are available. Wire sizes from 0.020 to 3/32" (0.5 to 2.4 mm) can be accommodated. All models come complete with four drive rolls. For further details, request our separate wire feed product brochures.



## Retractable Tooling

This facility provides an air-operated, quick acting mechanism to lower the back-up insert to provide additional clearance between the fingers and the mandrel for easier part loading and unloading.

## Riser Block

Risers are available to increase the height of the tabletop and therefore increase the diameter of parts that can be externally welded.



## Arc Length Control

Jetline's Model 401 microprocessor-controlled arc length control is used for GTAW (TIG) and Plasma (PAW) welding. It is designed to maintain a precise and consistent arc length throughout the weld process. The unit includes a touch retract facility to preset the arc length prior to welding.

The microprocessor design provides easy-to-use setup screens and an uncluttered front panel for operator convenience. For further details, request our separate ALC brochures.

See Jetline price list for complete ordering information

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