



TANK FABRICATION

Affordable *Solutions*

Bug-O Systems is committed to empowering our customers by providing operator controlled mechanized solutions for their welding, cutting and custom applications.





FEATURES

Bug-O Systems offers the **Automatic Girth Welder** for tank fabrication applications. Unlike other girth welders on the market, the BGW (Bug-O Girth Welder) Series comes standard with a Dual Drive System and other features unique to our machines. This self-propelled submerged arc welding system can reduce field storage tank welding time by 40% by increasing arc on time and reducing weld defects. The models run directly on the tank and carry the operator, eliminating the need for scaffolding while ensuring operator comfort and safety. The Girth Welders, due to their modular design, are applicable for top down or bottom up constructed single or double wall storage tanks. They are designed for internal and external welding. There are four standard units and our design allows us to offer custom-built units for special applications.



Dual Drive

Bug-O All Time exclusive dual AC motor design allows for constant travel across the entire tank circumference. When there is strake plate misalignment or uneven top edge especially over the Tee joints, the dual motors will automatically power up the machine to drive across whilst maintaining a consistent travel speed at all times. This feature reduces horizontal weld seam defects and decreases overall tank erection costs. The dual motors are controlled by a single frequency inverter for ease of operation.

Rotating Flux Dam and Welding Head

The adjustable, rotating flux dam holds the flux in the weld joint and carries the flux to the heavy duty flux recovery vacuum system. The flux dam can be adjusted both vertically and horizontally for easy positioning of the flux belt. The welding head has fine adjustment cross slides with travel of 4" (102mm) vertical and 6" (152mm) horizontal. The laser pointer is mounted on the welding head providing easily monitored seam tracking to keep the wire in the correct position.





FEATURES

Welding Equipment and Power Source Storage

The BGW series comes complete with SAW equipment by Lincoln Electric®. The DC-600 with NA-3 control box and feeder comes standard on all models. Optional power sources and feeder combination are available. The power source cables and electrical connections are stored in the supplied weather proof container for protection. A single power input supplies electrical power to all components of the system. The BGW series comes complete with 200' (61 m) of control cable and welding leads as well as a guide on the machine itself to keep the cables away from the plate.



Environmental Features

A series of fireproof and weather tight canvas covers provide protection for the operator. All models also include interior lighting and a spot light for the Flux Belt. Under the seat is a convenient storage area for wire spools, tools, or additional equipment the operator may need.

Modular Drive System

The Modular Drive System helps to make the vertical seam welds with increased precision and repeatability. By incorporating the Linear Weaver, the Bug-O Modular Drive System can help to increase your overall fabrication productivity.



For more detailed information please see our Modular Drive Brochure.





BUG-O GIRTH WELDERS

Girth Welder Control Panel



Model	Application	Tank Diameter	Welding Thickness	Travel Speed	Min. - Max. Shell Plate Height	Wire	Approx. Weight
BGW-5000-LNG-NA3-600 Single Sided Girth Welder	Double Shell Cryogenic Storage Tanks	Min. 15' (4.5 m)	5/16"-1 9/16" (8-40 mm)	4-144 ipm (100-2900 mm/min)	7'-13' (2-4 m)	2 x 1/16" (2 x 1.6 mm) (dual sided model)	1,984 lbs. 900 kg
BGW-6000-NA3-600* Dual Sided Girth Welder	Cryogenic Storage Tanks				6'-10' (1.8-3.0 m)	1/8" (3.2 mm)	3,968 lbs. 1,800 kg
BGW-5000-NA3-600 Universal Single Sided Girth Welder	Top Down or Bottom Up Constructed Tanks				6'-10' (1.8-3.0 m)	3/32" (2.4 mm)	2,094 lbs. 950 kg
CGW-5000-NA3-600 Compact Single Sided Girth Welder	Top Down or Bottom Up	15' (4.5 m) inside	7/32"-1 3/4" (5-45 mm)			1/8" (3.2 mm)	770 lbs. 350 kg

*can be used as two single sided units

Note: All units are available with DC-1000 Power Source

Feature Comparison

Competition	Modular System	Dual Drive Motor	Easy to use Flux System	Easy Use Control Panel	Laser site guide
Bug-O Systems					
Gulco					
Koike					
ESAB					



LARGE STORAGE TANKS: BUG-O GIRTH WELDERS



BGW-5000 & BGW-6000 Girth Welders

BGW-5000 (Single Sided Girth Welder)

BGW-6000 (Dual Sided Girth Welder)

The Bug-O Automatic Girth Welder is an automatic system that is applied to reduce welding time for joining tank courses during field erection. It straddles the shell plates riding on adjustable flange wheels and travels at a controllable speed for mechanized SAW. The BGW is a complete system including: frame, welding head, controls, flux support belt, flux recovery system, and welding power supply with storage case.



Features

- Industry First Modular System Design enables quick and simple conversion from single head to dual head welding
- Modular System Design enables AGW to be easily converted for traditional Bottom Up erection or Top Down “Jacked Tank” builds
- Our Dual Drive Inverter Controlled Drive System provides the most consistent AGW travel speed in the market and can help make T Joint Repairs a thing of the past due to the BGW ability to drive over inconsistent joint fit ups
- Efficient and reliable Flux Recovery System with filter to minimize waste and protect flux vacuum motor for years of trouble free service





LARGE STORAGE TANKS: BUG-O GIRTH WELDERS

Features, continued

- Easily adjustable weld head and flux belt support system
- Laser Pointer as Standard to assist operator in maintaining precise weld head location in the horizontal joint at all times
- Ergonomic operator cabin and easy to navigate Integrated control panel
- Digital Travel Speed Read Out
- Single Phase Cabin Outlets for operator accessories
- Full Weather Protection System for the operator using weather tight canvas
- Full Interior Lighting System to enable use at night or in poor light conditions
- Full range of custom models available for every application including LNG Tank Construction
- Can be ordered specifically for LNG solutions

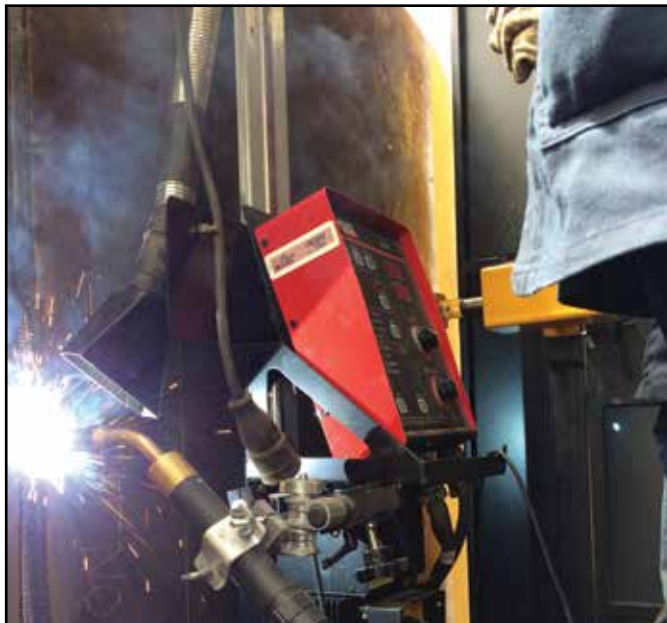




LARGE STORAGE TANKS: BVW-1000

BVW-1000-600MDS Multi Pass Vertical Welder

The BVW-1000-600MDS Vertical Welder is designed for welding the vertical seams on field storage tanks in an enclosed environment. The frame of the Vertical Welder is covered by Aluminum panels to provide a weather tight seal. With the motorized drives and permanently mounted rails, setup time and cost is reduced between the vertical weld seams. This unit is designed to run with any wire feeder/welding power supply combination (machine comes standard with Lincoln D600). A powered elevating platform allows the operator to follow the Bug-O drive carriage up the seam. An exhaust fan helps to keep the interior free from welding fumes. A fume extractor can be added for additional fume removal. The BVW-1000-600MDS Vertical Welder utilizes many of the same features that the Bug-O Girth Welder BGW Series has; including dual drive motors, welding power supply storage container and tool box.



Features

- Used for Multiple Pass Vertical Welding
- Permanently mounted rails remove setup time and costs
- Modular Drive System provides choice of Straight-line, Pendulum, or Linear weaving
- Powered elevator platform allows the operator to focus on welding
- Built in exhaust fan to remove welding fumes
- Dual Drive Motor provides the ability to drive over uneven weld joints and fit-ups

LNG

Custom made solution are available for LNG (Liquefied Natural Gas) storage tanks. Call the factory for more information.





LARGE STORAGE TANKS: EGW-1000



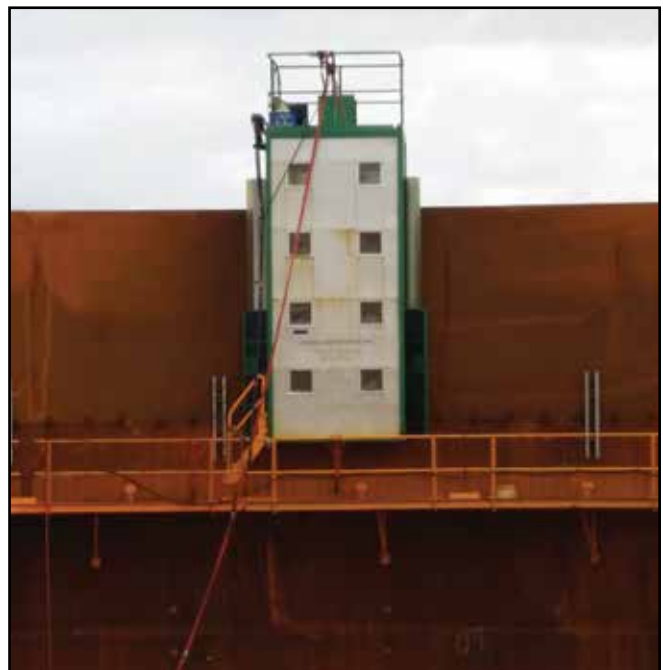
Features

- Closed loop feedback control & automatic carriage travel
- Linear Oscillator for strake plate over .94" (25 mm) in thickness. Enables single sided welding of plates up to 1.4" (35mm)
- Ships with water cooled copper backing bars for 9.84' (3 m) weld
- Heavy Duty High Cycle water cooler
- Completely enclosed self propelled heavy duty double sided positioning frame with powered operator platform
- Allows safe and easy access to both sides of the vertical weld joint
- Positioning System completely encloses vertical weld joint and can be used to weld in the rain
- Ships standard with 200' Cable Assemblies

EGW-1000 Electrogas Welder

The EGW-1000 (Electrogas Welder) is a high deposition, single-pass welding process that uses Water Cooled Copper Backing Bars and an Automatic Vertical Travel Carriage to complete vertical weld joints in previously unimagined weld times. Development in joint designs and weld consumables make the application of EGW suitable for many tanks in colder climates and higher strength structural steels than previously possible.

EGW is the most productive weld process for the welding of tank vertical joints in carbon steel from 2 inch to 10 mm and is in use by most professional global tank contractors.





SMALL TANK, MINING, WIND TOWER & PILING CONSTRUCTION



CGW-5000 Mini Portable Automatic Girth Welder

The NEW **CGW-5000** (Compact Girth Welder) from Bug-O All Time is designed to produce 2G horizontal sub-arc welds for a variety of applications including: Storage Tank, wind tower and piling construction. The machine runs on a simple steel band support that can be easily fabricated and located anywhere on the tank or structure eliminating the need to run on the top edge. This makes it ideal for tank maintenance such as partial stake replacements and shiphull repairs.

Features

- Fits minimum 10' OD (15' ID) work
- Can be used in various applications such as bulk storage tank construction and repair, power station absorber, chimney construction, mine sinking and shaft welding, as well as piling construction and wind towers.
- Highest deposition positional welding process available for these kinds of applications
- Simple to setup and operate
- Perfect solution when space is a premium (4' width or more)
- Applicable for bottom up or top down tank construction and repairs
- Unique in the marketplace for its size and capacity circa 772 lbs. (350 kg) when fully loaded
- SAW process





TRACTORS

BFW-1000

- LT-7 Tractor feeds 3/32" to 3/16" (2.4 to 4.8 mm) solid wires from 100 to 400 inches per minute (2.5 - 10.2 m/min) wire feed speed
 - Calibrated tractor drive adjusts travel speeds from 6 to 70 inches per minute (0.12 to 1.8 m/min)
 - Vertical head lift adjuster for adjusting electrical stickout from 1/2" to 5" (12.7 to 127 mm)
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- A photograph showing a person in a workshop setting operating the BFW-1000 tractor. The operator is wearing a light-colored long-sleeved shirt and safety glasses. They are holding a welding torch and a wire, with the tractor mechanism positioned over a workpiece. The background is a plain, light-colored wall.
- Weld angle up to 50° from vertical on either side; drag angle up to 30° from vertical
 - Control box conveniently located on the tractor (can be mounted either left or right), eliminating the need to return to the power source for routine procedure changes
 - Exceptional tracking control and self-steering in most applications leave the operator free for quality control, joint cleaning, and flux handling
 - Close mechanical alignment between wire and joint maximizes weld quality



TRACTORS



K-BUG 1200 / K-BUG 1200-BAT

- Cordless 18volt battery capable of running 2 shifts per charge (K-BUG 1200-BAT model)
- Drive unit motor overload protection
- Low profile, easy to access torch adjustment knobs
- Weld Contactor Enable Switch
- Capable of traveling up to a 75° incline



K-BUG 4000

- Single gun, compact fillet welder
- Extra strong magnetic base
- Four wheel drive tracks on the vertical wall of a fillet joint
- Lightest machine on the market at only 17 lbs (7.7 kg)
- Pull strength of over 65 lbs (29.5 kg)



Continuous Weld



Stitch Weld





COST ALTERNATIVES

Zipper Welder

BUG-5880 (with Pendulum Weaver)

BUG-5890 (with Linear Weaver)

- For use on any vertical seam with an exposed top edge
- Designed to weld vertical seams on field storage tanks
- Box rail hangs over the top lip of the course section
- Rollers on the top end for easy positioning and less wear and tear on employees
- Held on bottom with powerful, rare earth magnets which provide secure positioning
- Utilizes the Modular Drive System
- Available in 8' and 10' sections (2.5 and 3 m)
Custom lengths available

*Box rail and support carriage can be ordered separately

ARR-1180 (8' (2.5 m) weld)

ARR-1180-144 (10' (3 m) weld)



ACCESSORIES

Spare Parts Kit

SPK-BGW-1000 *

Parts included:

PART NO.	QTY	DESCRIPTION	PART NO.	QTY	DESCRIPTION
BGW-1006	4	Flux Belt	BGW-1031	1	Lamp
BGW-1007	5	Flux Vacuum Filter	BGW-1207	20	3.2 mm Contact Tip
BGW-1008	1m	Flux Feed Hose	BGW-1208	20	2.4 mm Contact Tip
BGW-1009	1m	Flux Recovery Hose	BGW-1209	2	Extension Nozzle Assembly
BGW-1011	1	Flux Pickup Nozzle	BGW-1211	2	Extended Nozzle
BGW-1013	1	Inverter Drive Unit	BGW-1212	1	Electric Flux Valve
BGW-1014	1	Drive Current Display	BGW-1213	1	Laser Pointer
BGW-1016	1	Flux Vacuum			

*Must be ordered with every BGW & CGW unit

Can be ordered separately