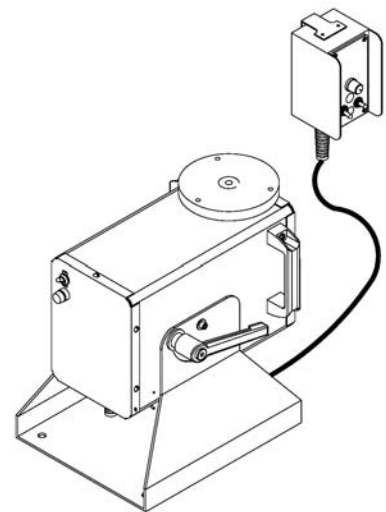
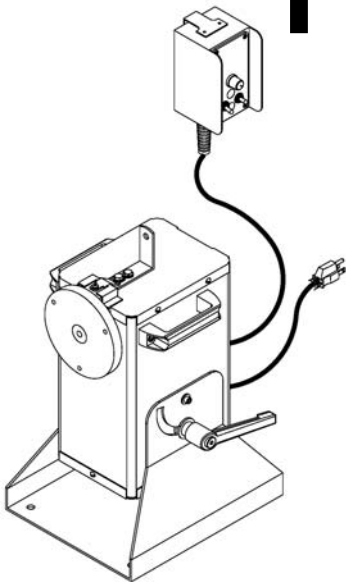




# WELDING POSITIONER

*(USING GULLCO GSP-1000  
SERIES CONTROLS)*

**MODELS:  
GP-200  
GPP-200  
GP-300**



## OPERATING INSTRUCTIONS

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## **SAFETY INSTRUCTIONS**

Although the Gullco welding positioner is manufactured for safe and dependable operation, it is impossible to anticipate those combinations of circumstances, which could result in an accident. An operator of the welding positioner is cautioned to always practice "**Safety First**" during each phase of operation, setup and maintenance.

Read and understand the whole Operating Instructions manual (as well as the additional Technical manual complete with the supplementary GSP-1000 Control Manual, "GD-042") before operating or performing service of this equipment. Become familiar with the machines operation, applications and limitations. Keep the operation manual in a clean and readily available location.

This equipment is normally used to automate / semi-automate welding or cutting processes. These processes usually have any combination of the following; bright and hot arcs, flying sparks, fumes, ultraviolet and infrared radiated energy, hot work-pieces, compressed gases, etc.. The onus is on the operator of this equipment to know, understand and follow all the safety precautions associated with the process being used.

A careless operator invites troubles, and failure to follow safety practices may cause serious injury or even death. Important safety precautions are given in the following:

### **Electrical Shock Prevention**

- Do not use this equipment in damp or wet locations.
- Do not expose this equipment to rain.
- Do not touch electrically live parts or electrode with skin or wet clothing.
- Insulate yourself from the work and ground.
- Never carry this equipment by the cables or pull the cables to disconnect from the receptacle.
- Keep all cables from heat, oil and sharp edges.
- Inspect all cables periodically and replace if damaged.
- Inspect the security of all cables periodically and repair if loose.
- Disconnect the power cord when not in use.
- Disconnect the power cord **positively** to prevent electrical shock before repair and service of the equipment.

### **Bodily Injury Prevention**

- Do not wear loose clothing, jewellery or loose, long hair which may get caught into automatic systems or moving parts.
- Keep equipment (especially lifting handles) dry, clean and free from oil & grease.
- Ensure that the positioner is **well** secured to the bench, tabletop, etc., to prevent it from tipping over when subjected to over hung loading.
- Never loosen the tilt-locking lever, nor try to tilt the rotary welding table, when there is a load mounted to the table generating large radial moments.
- Keep hands away from the rotary table when it is in motion, or when there is the slightest possibility of motion.
- Wherever possible, avoid mounting devices, etc., that protrude from the rotating mass, and pose possible pinch-points.
- Make certain that work-piece/mounting device protrusions will not strike the floor, positioner frame or any other object during rotation.
- There should only ever be one (1) operator working at the machine at any given time.
- Do not operate this equipment if drowsy from medication or fatigue.
- Do not lift the machine with heavy accessories or cables attached and only lift using adopted safe lifting standards and practices.

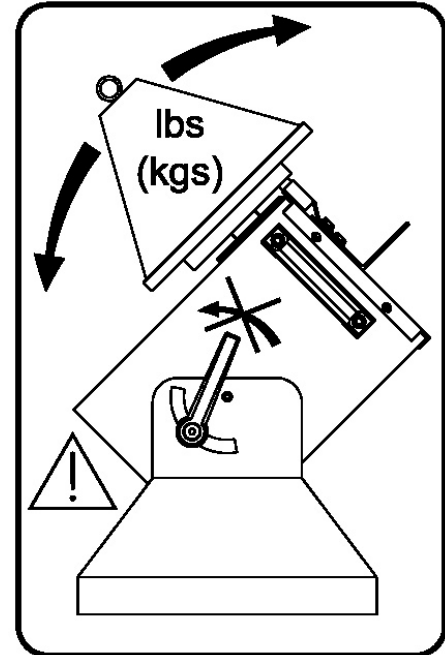
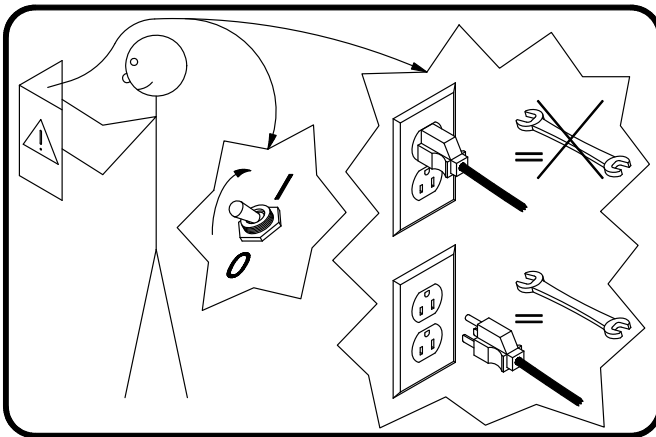
## **SAFETY PRECAUTIONS**

The following cautionary/warning labels are attached to each welding positioner:-

The adjacent label pictorially represents the following:

**Warning:-**

**Do not loosen the tilt clamp lever when there is a load applied to the table. This may result in an unexpected radial movement!**



The above label pictorially represents the following:

**Warning:-**

**Read the manual before turning the unit on and before performing service. Also, positively disconnect the unit from all power supplies before servicing!**

## **IMPORTANT**

### **READ THIS BEFORE OPERATING THE WELDING POSITIONER**

When used with electric arc welding or cutting equipment, ensure that an adequate and well-maintained power return path is provided with good electrical contact. Failure to do so may result in the welding/cutting current passing through the Positioner and damaging the wiring and electrical components.

Important information regarding safety and operation of the “GSP-1000” motor control used in the Positioner is contained in a supplemental manual attached at the end of the Technical Manual. It is equally important to read, understand and apply the information contained within that manual. The supplemental manual (GD-042) has a title “Technical Information For The Gullco “GSP-1000” Microprocessor Based Motor Control”, and it’s pages are numbered with a prefix of “T-“.

**ALL THE SAFE PRACTICES AND PRECAUTIONS MAY NOT BE GIVEN IN WRITING. SOME ARE BASED ON COMMON SENSE, BUT OTHERS MAY REQUIRE TECHNICAL BACKGROUND TO EXPLAIN.**

## **WELDING POSITIONER**

This parts list covers the operation and maintenance requirements of the following Gullco welding positioners:

**GP-200-M, GP-200-H, GPP-200-M, GPP-200-H, GP-300-M & GP-300-H**

## **GENERAL DESCRIPTION**

The Gullco welding positioners are electrically powered, rotary turn tables, that consist of a rotary spindle complete with mounting flange, drive and tilt mechanisms, a microprocessor based, pulse width modulation motor control and a 7-1/2 feet (2.3 mtr.) power cable and a range of options, as detailed on the following pages. The positive drive of the rotary table is obtained from a single stage chain and sprocket reduction, driven by a low voltage permanent magnet motor and gear-head power unit assembly. The microprocessor motor control offers operator interface of start, stop, clockwise rotation, neutral, counter-clockwise rotation and infinitely variable control of the speed, within the range of the model. The GP-200, GPP-200 & GP-300 series of welding positioner can accommodate a variety of optional footswitches. Safety is greatly enhanced by the use of Gullco's low voltage (24 V) control and power supply system that is available in three line voltage inputs. I.e. 42, 115 and 230 VAC, single phase, 50/60 Hz, or any unregulated 24 VDC power supply at 220 watts of power. A power supply on/off isolation switch is provided. The rotation speed is electronically controlled using an optical tachometer located on the back of the gear-motor and is infinitely variable in both clockwise and counter-clockwise directions, within the range of the model, by a rotary speed adjustment potentiometer located on the remote control faceplate of the welding positioner. Table tilt is manually set at any desired angle, from 0° through 90°, quickly and easily.

Purge equipped models have a 1/4" (6.4mm) hole through the center of the table spindle and a rotary gas coupling mounted to the rear of the spindle, providing a female 1/4" N.P.T. gas inlet port.

## **INTENDED / FORESEEN USAGE**

Gullco welding positioners are widely applied to reduce the cost of welding circumferential components, such as pipe flanges and fittings. They are compact, portable and provide fast positioning and smooth rotation.

Through automation or semi-automation, the quality, efficiency and repeatability of the weld produced is greatly improved. Detrimental factors such as poor or awkward accessibility, operator fatigue, or inconsistent workmanship are eliminated. Required quality levels are consistently attained and productivity and profitability increased.

## OPERATION

**Note:** The electrical and mechanical installation of the positioner is explained in the Technical Manual.

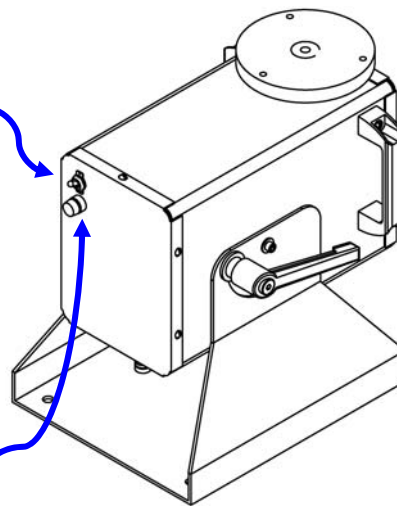
Through the use of the optical tachometer closed loop feedback circuitry, the motor control can obtain constant speed control of the welding positioner. The motor and the control operate on 24 VDC, supplied by a power supply located in the base of the positioner tower. Therefore, all operator interface devices (except the power on/off switch) are subjected to signal level voltages only.

### Local Control Devices

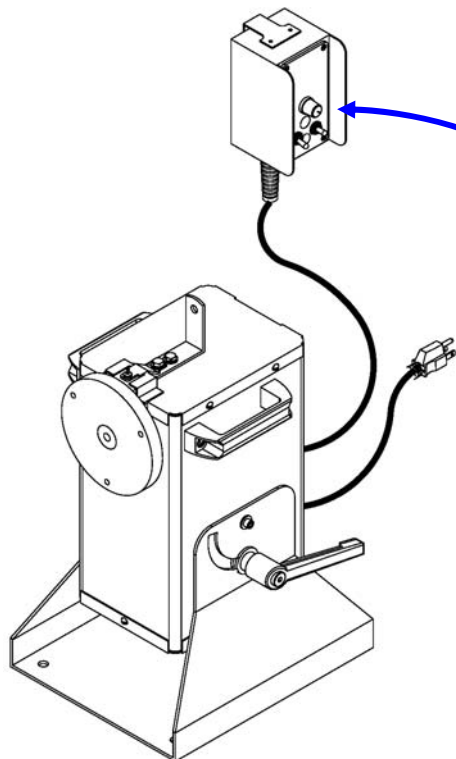
The power On/Off switch is located at the bottom of the positioner tower and is used to disconnect the power to the rest of the control circuitry.

I = On, O = Off.

**WARNING!** The motor control must not be continually started and stopped by the removal and reapplying of power to the control. Turning the power off to the control will not provide instant braking and continued use will damage the control. Allow ten (10) seconds after the removal of power before reapplying the power to the motor control.

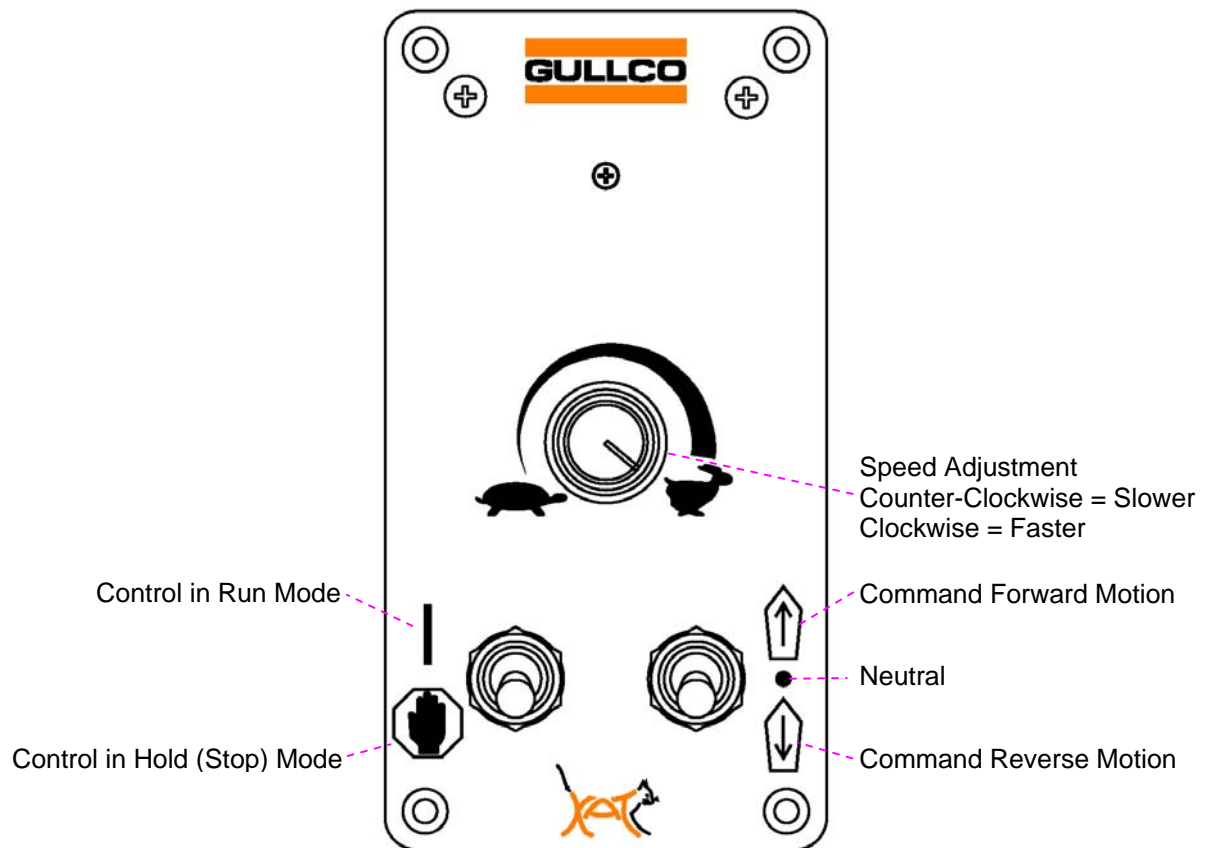


The fuse holder is located at the bottom of the positioner tower and allows accessibility to the main AC fuse by pushing the cap in towards the main body and twisting in a counter-clockwise direction.



The GP-200, GPP-200 & GP-300 welding positioners use a Gullco GSP-1000 microprocessor based motor control, located in a remote pendant attached to the positioner by 6ft [1.8 Mtrs] of control cable.

The following provides a brief description of the GSP-1000 control (refer to the sketch below):



#### The Run/Stop Switch

- This is used to start and stop rotation of the positioner.

#### The Forward/Neutral/Reverse Switch

- This is used to select the direction of rotation.

#### The Speed Adjustment Knob

- This adjustment is used to increase (clockwise) or decrease (counter-clockwise) the rotational speed of the positioner.

**WARNING!** Avoid changing the direction of rotation without making sure that rotation comes to a complete stop first. Failure to comply may cause an overload.

**WARNING!** Avoid repeatedly starting and stopping the positioner in quick, short succession, as this will reduce the life expectancy of the control and the motor.

## **Operation with Optional Footswitches**

### **Run/Stop Footswitch ➤ GP-200-024:**

Place the GSP-1000 Run/Stop switch in the Run position, and the Forward/Neutral/Reverse switch in the desired direction. When the footswitch is activated, the positioner will rotate in the direction chosen at the speed set by the adjustable speed potentiometer. Release the footswitch to cease rotation.

### **Variable Speed Footswitch ➤ GP-200-025:**

Place the GSP-1000 Run/Stop switch in the Run position, place the Forward/Neutral/Reverse switch in the desired direction and use the adjustable speed potentiometer to set the maximum desirable rotation speed. When the footswitch is activated, the positioner will rotate in the direction chosen. The rotary speed will be controlled by the amount that the variable speed footswitch is depressed. The variable speed range of the footswitch is from zero rpm up to the maximum set by the GSP-1000 adjustable speed potentiometer. I.e. if the GSP-1000 adjustable speed potentiometer is set to 40% of full speed, the variable speed range available through the footswitch will be from 0 to 40%. Release the footswitch to cease rotation.

### **Forward/Stop/Reverse Footswitch ➤ GP-200-023:**

Place the GSP-1000 Run/Stop switch in the Run position, and the Forward/Neutral/Reverse switch in the Neutral position. When the footswitch is activated, the positioner will rotate in the direction chosen by the footswitch at the speed set by the adjustable speed potentiometer. Release the footswitch to cease rotation.

## **LOADING**

Before mounting any load to the positioner, the tilt locking adjustable lever should be tested for tightness. When loading the work piece onto the table, take account of the weight, centroid eccentricity and centroid height of both the work piece and all clamping fixtures. When the work piece is large and its weight is one sided at the peripheral portion, inertia start and stop is severe and can cause an overload situation. Wherever possible, counterbalance weights should be used to reduce this stress. Take into consideration the additional weight and distribution of the counterbalance.

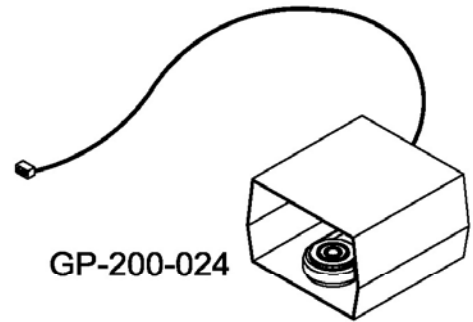
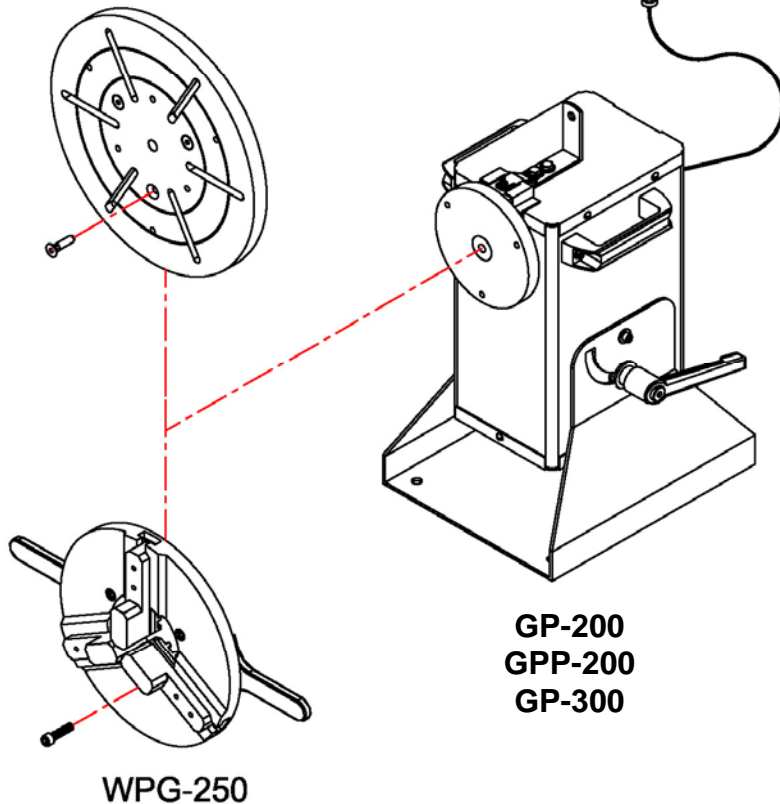
**WARNING!** Lower work pieces onto the turntable gently. Impact and shock loads are many times greater than the "dead-weight" of the work-piece. Dropping loads onto the table can result in damage!

**WARNING!** Do not use impact or shock techniques to clamp and unclamp self-centering grippers mounted to the positioner turntable. The shock will be transferred to the drive system resulting in damage!

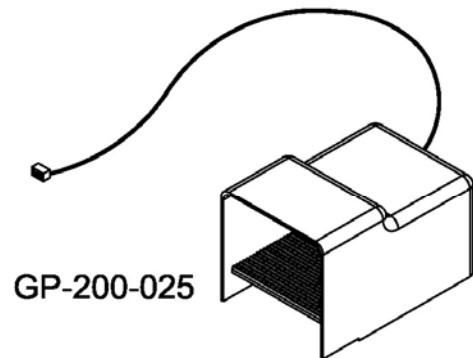


## ACCESSORIES

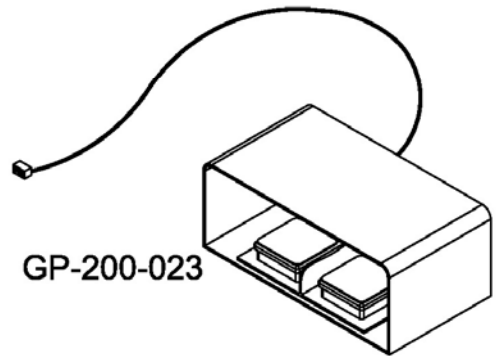
**GP-200-016 (GP-200 & GPP-200)  
GP-300-002 (GP-300)**



**GP-200-024**



**GP-200-025**



**GP-200-023**

### **GP-200-024**

Run/Stop footswitch assembly for manual operation. This kit provides a run/stop footswitch; a footswitch guard cover; a connecting control cable; and strain relief glands. When activated, the footswitch will provide a run signal to the control.

### **GP-200-025**

Variable Speed footswitch assembly for manual operation. This kit provides a run/stop/variable speed footswitch; a footswitch guard cover; a connecting control cable; and strain relief glands. When activated, the footswitch will provide a run signal to the control and allow regulation of the rotational speed via the compression of the footswitch pedal.

### **GP-200-023**

Forward/Stop/Reverse footswitch assembly for manual operation. This kit provides directional footswitches; a footswitch guard cover; a connecting control cable; and strain relief glands. When activated, the footswitch will provide a run signal and a rotary direction signal to the control.

- GP-200-016** 12" [305 mm] Diameter mounting table. This round mounting table is used to facilitate direct mounting of components or fixtures and provides six (6) radial mounting slots and various three (3) hole pitch circle bolt patterns. The mounting table is quickly and easily mounted on the positioner spindle flange.
- GP-300-002** Same as GP-200-016 except that there is a 2.50" diameter centre hole for the through bore GP-300 positioner.
- WPG-250** Gullco Self-Centering Welding Grippers are quickly and easily mounted on the positioner spindle flange. They are slim but rugged, weighing only about half of that of a standard chuck, minimizing reduction in positioner capacity. A single lever provides smooth, positive, self-centering open/close action.  
External clamping range = 0.38" [10mm] to 11.25" [286mm]  
Internal clamping range = 4.25" [108mm] to 15" [381mm]  
Weight 20 Lbs. [9 Kg.]
- KR-1000 CSB** A free standing support and cutting torch holder assembly. 1-1/8" [28.6mm] square rack arms and rack boxes provide 11-1/2" [292.1mm] of vertical adjustment and 10-1/2" [266.7mm] of horizontal adjustment. Supplied with swivel mounted, standard rack-type cutting torch holder.
- KR-2000 CSB** Same as above, except uses 1-1/2" [38.1mm] rack arms and rack boxes and provides 7-1/2" [190.5mm] of vertical and 6-1/2" [165.1mm] of horizontal adjustment.
- KR-1000 WSB** A free standing support and welding gun holder assembly. 1-1/8" [28.6mm] square rack arms and rack boxes provide 11-1/2" [292.1mm] of vertical adjustment and 10-1/2" [266.7mm] of horizontal adjustment. Supplied with swivel mounted, adjustable gun holder assembly.
- KR-2000 WSB** Same as above, except uses 1-1/2" [38.1mm] rack arms and rack boxes and provides 7-1/2" [190.5mm] of vertical and 6-1/2" [165.1mm] of horizontal adjustment.
- NOTE:** The above cutting torch and welding gun support assemblies can be, and often are, equipped with one (1) or two (2) Gullco motorized rack arms controlled by a remote joystick pendant. Ask your local Gullco representative for further details.

**ALSO AVAILABLE:**

Gullco frequently designs and manufactures custom welding systems, often utilizing the welding positioner. These systems normally use some, or all of the following; a programmable logic control, a programmable operator interface (that allows the user to easily adjust any of the timed and counted preset values etc.), pneumatic or motorized slide/slides, interfacing with welding/cutting equipment, external safety devices, auxiliary process equipment etc. Your local Gullco representative would welcome the opportunity to discuss how we may assist in automating your specific application.

## **REVISIONS LIST**

### **November, 2004**

Overall      First release.

### **January, 2007**

Title Page      Update Gullco contact details.  
Page 5          Removed erroneous reference to Automatic Mode.  
Page 7          Updated image of GP-200-023.

### **Sept, 2010**

Title Page      Update Gullco contact details.  
Overall        Added GP-300 through bore model.  
Back page     Updated Back page.

### **Feb, 2013**

Title Page      Update Gullco U.K. contact details (e-mail).

## **ADDITIONAL NOTES**

Specifications and products are subject to change without notice.  
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Only use genuine/authorized replacement parts.



# GULLCO



LINEAR or RADIAL  
HIGH DEPOSIT RATE  
QUICK SETUP TIME

## KAT® OSCILLATOR

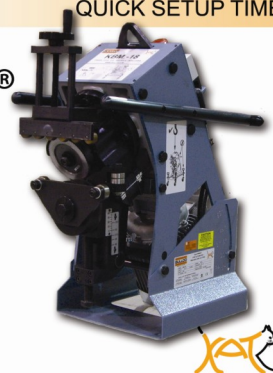
Motorized weld center line  
adjustment  
Motorized stroke width  
Oscillation speed control  
Store up to 10 welding  
programs



PORTABLE PLATE EDGE  
BEVELLING MACHINE  
QUICK SETUP TIME

## KBM®

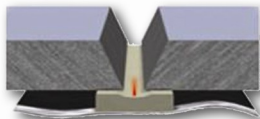
Produce clean bevels with no  
thermal distortion  
Bevels angles 22° to 55°  
(other angles available)  
Hydraulic and Adjustable  
undercarriages available  
Bevels Mild Steel, Stainless  
Steel, and Aluminium  
Reduce cost and save time by  
minimising defects and poor fit  
up



ONE SIDED WELDING  
X-RAY QUALITY BEADS  
HIGH DEPOSIT RATE

## KATBAK® CERAMIC WELD BACKING

Eliminate Defects And Rework  
Eliminate Costly Unnecessary  
Gouging And Grinding  
Sizes 1/4" (6.3 mm) to 2" (51 mm)  
Special Sizes And Configurations  
Available



PORTABLE AND COMPACT  
INCREASE EFFICIENCY  
MORE ARC ON TIME

## MOGGY® FILLET WELD CARRIAGE

Single or Dual Torch Models  
Magnet or Non Magnetic Base  
Continuous or Stitch Welding  
Models  
Fillet, Lap, Butt and Dual Torch  
Welding

