



## **Weld Automation**



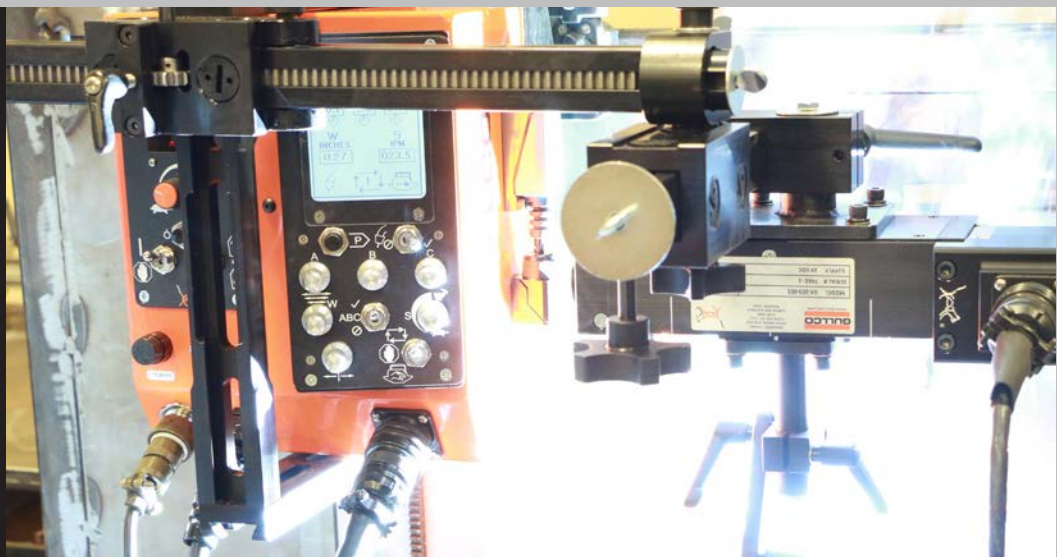
## WELDING AND CUTTING CARRIAGE - KAT® FOR RIGID & SEMI RIGID TRACK



The Gullco KAT® is used throughout the world to automate a wide variety of welding and cutting operations. The KAT® is small and light yet robust with many features which include:

- Tool-less Setup, Adjustment & Operation
- Self-aligning Wheels (Easy Installation)
- Dynamic Dovetail Racking for versatile torch positioning
- Quick clutch mechanism
- OSHA Safety Orange
- Ingress Protection (Sealed Unit) including Conformal Coated Circuit Boards
- Energy Efficient
- Universal Compatibility to all welding power sources and wire feeders
- Torch holder memory for fast torch removal and accurate repositioning after cleaning
- Compatible with all existing rigid track and the new semi rigid track sections

***THE MOST DURABLE, DYNAMIC, AND VERSATILE  
CARRIAGE IN THE INDUSTRY***





# AUTOMATED WELDING SYSTEM KAT® LT CARRIAGE

## SPECIFICATIONS:

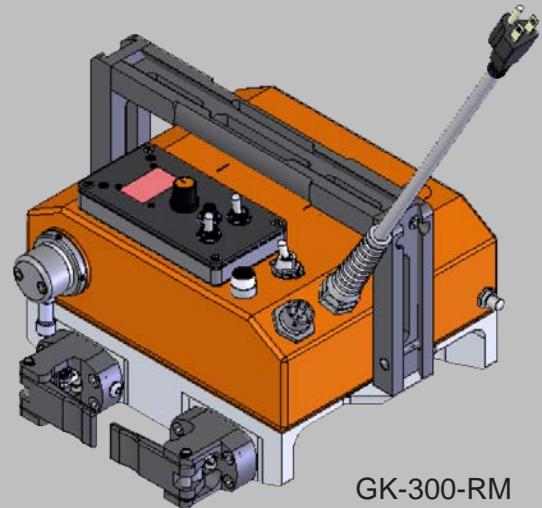
Weight: 17 lb (7.7 kg)

Speed Range: 2.5 - 83.1 cm/min ( 1 - 32.7 IPM)

Racking Weight: 9 lb (4 kg)

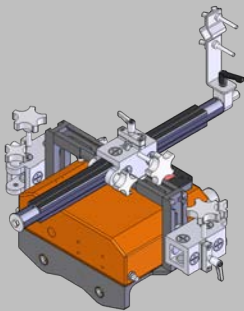
Power Requirements: 42 VAC, 115 VAC, 230 VAC  
Models available.

Vertical Capacity: 56 lb (25.4 kg)



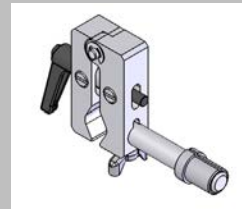
GK-300-RM

## FEATURE RICH ENGINEERED DESIGN



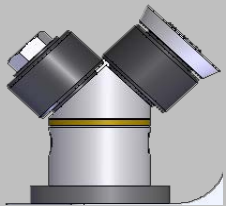
### DYNAMIC RACKING

Using a machined dovetail racking system and locking rack box, torch positioning is versatile and adjustable. The rack box can be positioned anywhere along the racking and torch removal and adjustment is simple.



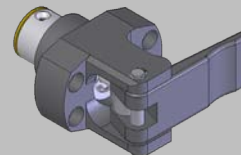
### TORCH HOLDER MEMORY

The torch holder has been designed for quick and easy removal of the torch so that cleaning and accurate repositioning of the welding torch in the optimal position is simple and consistent.



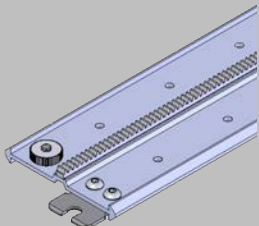
### SELF-ALIGNING WHEELS

Self-aligning wheels means the carriage is mounted to the track correctly and easily every time. This ensures smooth carriage motion and maximizes the life of the track.



### PADDLE LOCKS

Quick installation paddle locks provide smooth transition of the self-aligning wheels onto the track.



### SEMI RIGID TRACK

Semi rigid track is made from precision extruded aluminum and a securely affixed steel rack. The interchangeable end design enables fast accurate joining of the track sections and provides smooth movement of the carriage along the track in both flat and curved surfaces. Flexibility to a minimum diameter of 24ft (7315.2mm) internal or external.

### MACHINED UNDERCARRIAGE

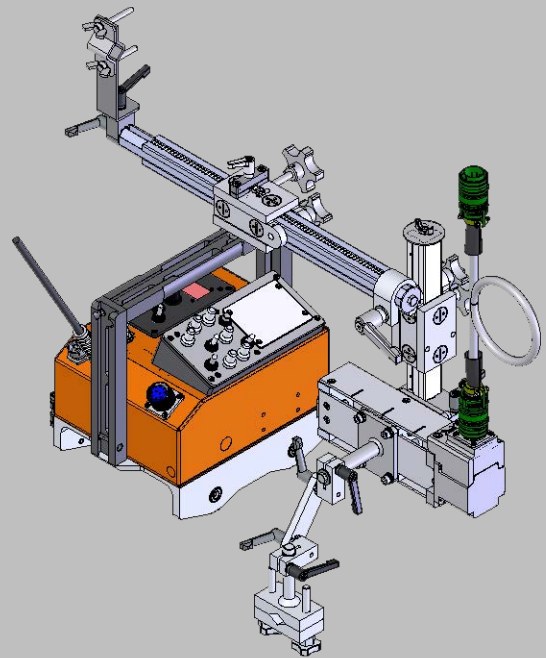


Lightweight design engineered for optimal setup times utilizing the self-aligning wheels and paddle lock technology.

### **GK-L-300 KAT® Rugged Light Weight Carriage Linear Welding Oscillation Combination**

Carriage Speed 1 - 32.7 IPM (2.5 - 83.1 cm/min)  
Heavy duty quick action self-aligning wheels  
combined with two track mounting paddled locks.  
Accurate Carriage speed control by conformal coated  
ingress protected 24 volt Gullco microprocessor.

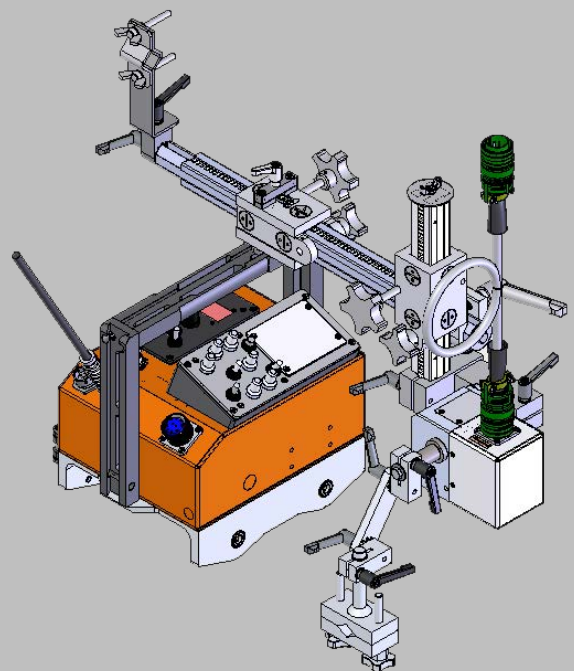
Maximum load capacity 56 lb (25.4 kg) regardless  
of weld position. With forward/stop/reverse switch,  
high speed return, infinitely variable multi-turn speed  
potentiometer and LED display. Oscillator control  
provides Auto Arc Start, independent dwell at each  
end and center of the 1.5" stroke, infinitely variable 0  
to 5 seconds; oscillation speed potentiometer, speed  
range 8 to 188 cycles per minute (16 to 376 passes  
per minute). Weld oscillator head mounted on  
infinitely variable dovetailed tool-less racking system.



### **GK-R-300 KAT® Rugged Light Weight Carriage Radial Welding Oscillation Combination**

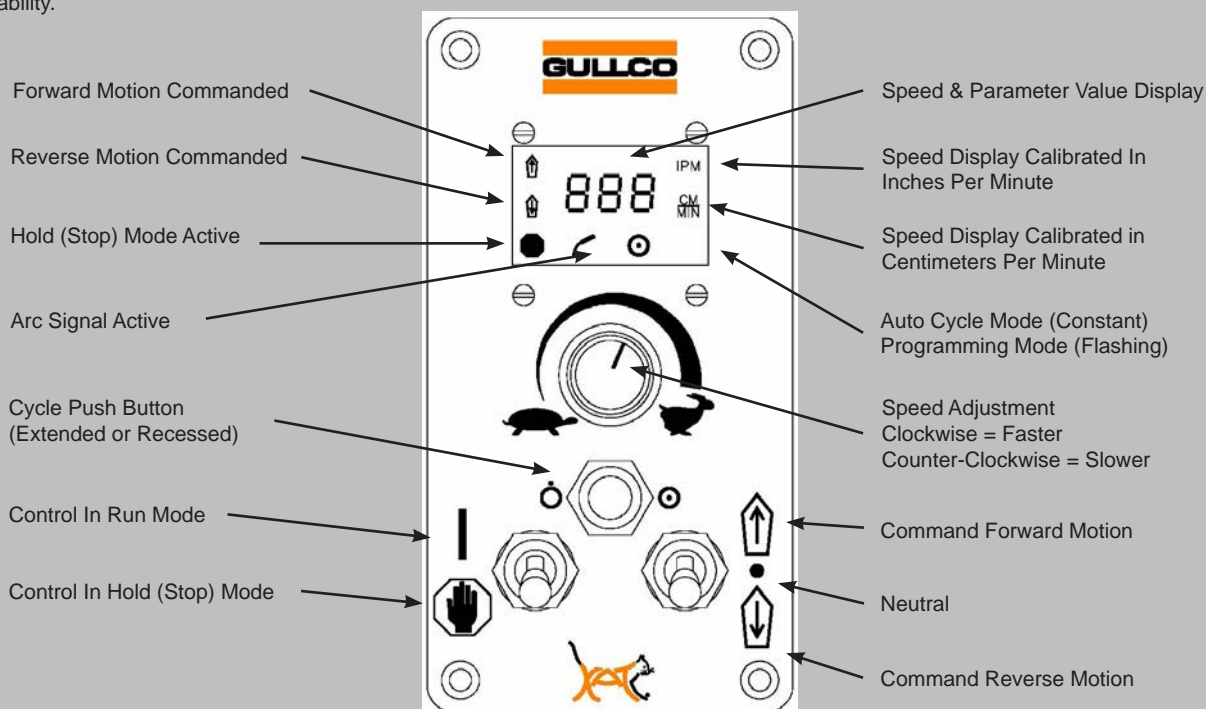
Carriage Speed 1 - 32.7 IPM (2.5 - 83.1 cm/min)  
Heavy duty quick action self-aligning wheels  
combined with two track mounting paddled locks.  
Accurate Carriage speed control by conformal coated  
ingress protected 24 volt Gullco microprocessor.

Maximum load capacity 56 lb (25.4 kg) regardless  
of weld position. With forward/stop/reverse switch,  
high speed return, infinitely variable multi-turn speed  
potentiometer and LED display. Oscillator control  
provides Auto Arc Start, independent dwell at each  
end and center of the 0.8 - 45° oscillation width  
stroke, infinitely variable 0 to 5 seconds; oscillation  
speed potentiometer, speed range 1° - 45° per  
second. Weld oscillator head mounted on infinitely  
variable dovetailed tool-less racking system.





The Gullco Standard Platform (GSP) range of controls have switching for forward / neutral / reverse, run / stop, Manual / Auto & program variable increment/decrement (where applicable) and a rotary encoder for speed control. This micro-processor based, 24 volt DC motor control can be supplied to provide a variety of "optional" functions such as indexing, weld oscillation and auto-weld. The selected "option" function and carriage travel speed/ direction are directed by a single GSP control. This ensures high levels of accuracy, quality and reliability.



## PART NUMBER CONFIGURATION

Select a option and voltage to configure a KAT® specifically suited to your needs

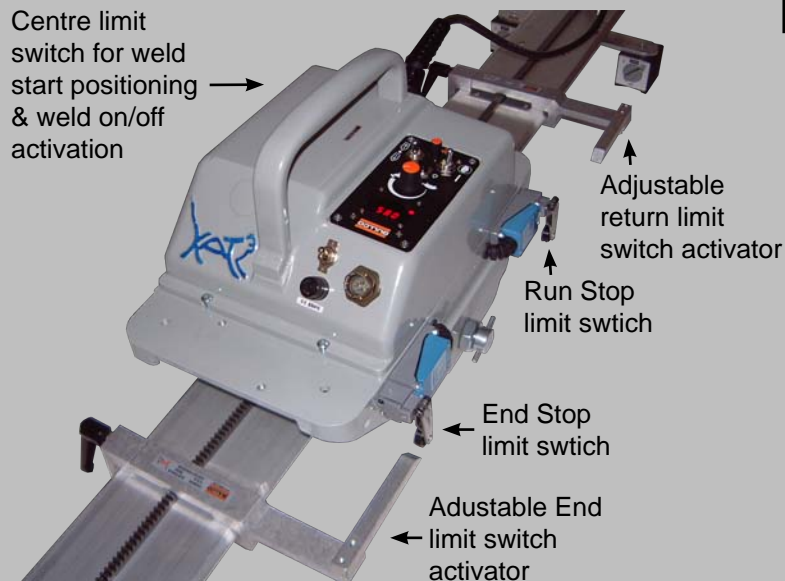
**GK-**   **-300-**  

MODEL OPTIONS	
MODEL	DESCRIPTION
W	Welding Package
AW	Auto-weld
L	Linear Oscillator
R	Radial Oscillator
PC	Plasma Cutting
FC	Flame Cutting

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC



## AUTOMATIC WELDING CARRIAGE - KAT® AUTO-WELD

**MODEL GK-200-R\*-A**

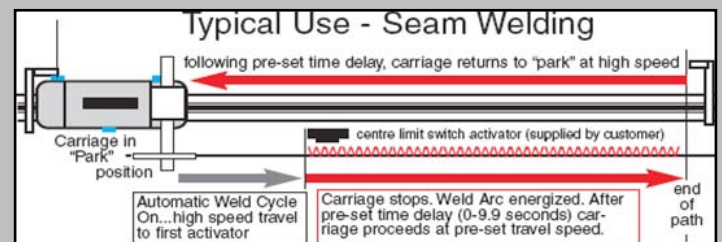
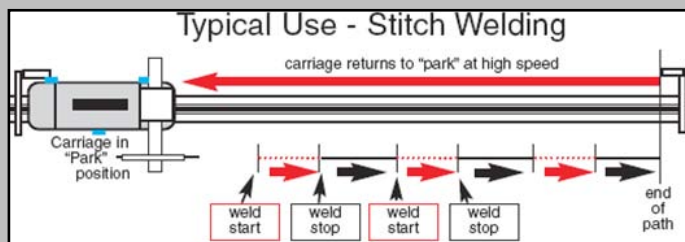
For use on KAT® Rigid Track

**MODEL GK-200-F\*-A**

For use on KAT® Rigid Track

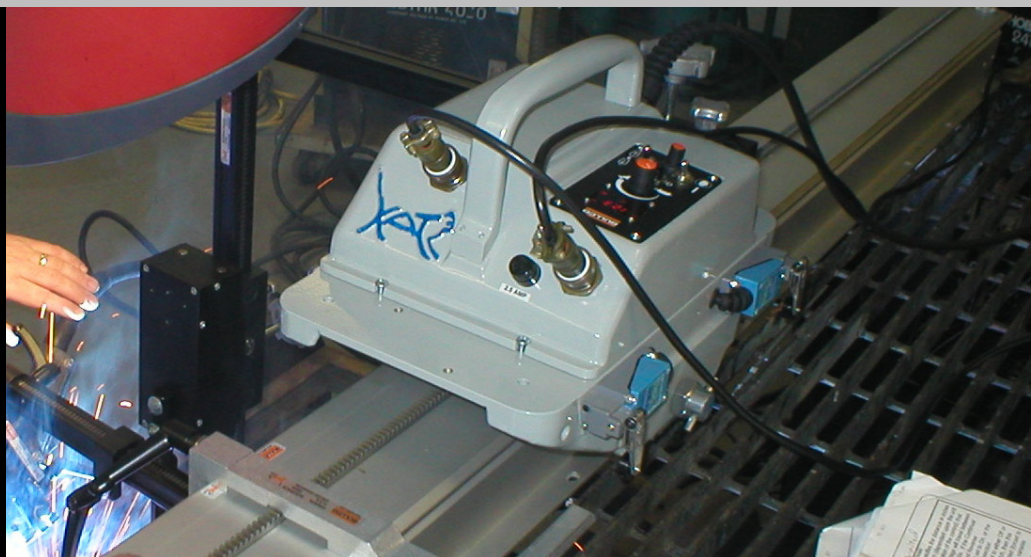
\* See reverse side for speed and voltage requirements

The KAT® Carriage Auto-Weld enables a wide variety of automated welding cycles that can be repeatedly performed along any plane. The advanced Auto-Weld control monitors, via distance travelled, and responds to limit switches mounted on the KAT® which in turn respond to adjustable activators mounted at appropriate positions on the KAT® Track. Travel direction/speed and length of travel path are synchronized with precise weld start and weld stop settings. By combining different control settings and limit switch activator positions, a wide variety of welding cycles can be repeatedly performed. The KAT® Auto-Weld Combination is ideal for stitch welding and seam welding applications where repeatability and accuracy are desired. The reliability and precision of this automated welding system reduces cost, adds efficiency and improves quality.



*Increase Production and Precision with Weld Automation*

PRECISION AND REPEATABLE WELDS CAN BE PRODUCED ALONG ANY PLANE



# SPECIFICATIONS

## KAT® Travel Carriage Auto-Weld Combination comprises:

Gullico Auto-Weld KAT® Travel Carriage with heavy duty self-aligning wheel assemblies and closed loop tack feedback for accurate speed control when running in any plane, regardless of load. Maximum 100 lbs. (45 kgs). Carriage is controlled by the Gullico low voltage 24 volt GSP microprocessor pulsed width modulation motor control, interfacing with the forward/stop/reverse switch and infinitely variable 4-turn speed potentiometer. LED display in IPM or cm/min and with a ten position rotary switch to adjust various functions. Operates on 42, 115 or 230 volts, single phase, 50/60 Hz A.C. power supply. Please specify voltage/speed when ordering. (see below)

**Limit Switches** - 3 limit switches are mounted on the outside of the carriage. One each for forward, reverse and centre limit for weld start positioning and weld on/off activation.

**Adjustable Park and End Limit Switch Activators** - for mounting on Gullico KAT® Rigid or Flex Track. Centre limit switch activator(s) to be supplied by the customer.

Optional

**Remote Pendant Control Kit** - Uses GSP control removed from KAT® Carriage...enabling remote operator control of the Auto-Weld unit. See below for details

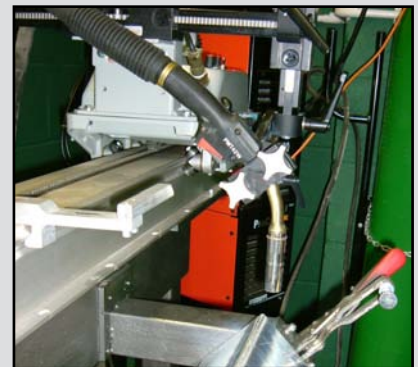
*NOTE: Gullico also has Kat Carriage models available with controls for Oscillation visit [www.gullico.com](http://www.gullico.com) for more information.*

## AUTO-WELD CONTROL SYSTEM

Provides settings to establish:

- Operating position
- Travel start delay after arc start signal, adjustable 0 - 9.9 seconds.
- Crater fill delay, allowing the wire feed signal to stay active after carriage stop, adjustable 0- 9.9 seconds.
- Post weld delay, sets a delay adjustable 0 - 9.9 seconds after each crater fill delay for burnback or postflow to occur.
- Weld direction- forward, reverse, or "forward & reverse"
- Center limit switch use, to enable rapid travel to weld start point using center limit switch.\*
- Stitch weld electronically programmed using carriage travel distance, adjustable 0.1 - 99.9 in. or cm.
- Carriage travel distance, adjustable 0.1 - 99.9 in. or cm.
- Automatic carriage return to home. Limit switch activated.
- Continual forward and reverse of carriage using limit activators.

\*Note: Centre Limit Switch Activator to be supplied by customer



## RIGID KAT® AUTO-WELD

MODEL	SPEED RANGE
L	0.5 to 16.4 IPM (1.2 to 41.6 cm/min)
M	1 to 32.7 IPM (2.5 to 83.1 cm/min)
H	2.7 to 88.4 IPM (6.7 to 224 cm/min)

Select a speed range and voltage to determine your Rigid KAT® Auto-Weld Model Number.

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

## REMOTE PENDANT CONTROL KIT

...for use with Rigid/Flex KAT® Auto-Weld systems. - Comprising Remote Pendant (no control) attached to 8 ft (843.84 cm) control cable one end and KAT® control blanking plate other end with internal connectors at each end. This remote pendant uses the GSP control removed from the KAT® Carriage. This kit can be easily field installed (or factory installed at no charge)

## FLEX KAT® AUTO-WELD

MODEL	SPEED RANGE
L	0.8 to 25.8 IPM (2 to 65.4 cm/min)
M	1.5 to 51.5 IPM (3.9 to 131 cm/min)
H	4.2 to 139.1 IPM (10.6 to 353 cm/min)

Select a speed range and voltage to determine your Flex KAT® Auto-Weld Model Number.

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullico Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL

Distributed by:

**GULLCO**

### CANADA - GULLCO INTERNATIONAL LIMITED

Phone: 905-953-4140 Fax: 905-953-4138 e-mail: [sales@gullico.com](mailto:sales@gullico.com)

### U.S.A - GULLCO INTERNATIONAL INC.

Phone: 440-439-8333 Fax: 440-439-3634 e-mail: [ussales@gullico.com](mailto:ussales@gullico.com)

### EUROPE - GULLCO INTERNATIONAL (U.K.) LIMITED

Phone: +44 1257-253579 Fax: +44 1257-254629 e-mail: [uksales@gullico.com](mailto:uksales@gullico.com)

### AUSTRALIA - GULLCO INTERNATIONAL PTY LIMITED

Phone: 61 (0)7 3348 5515 Fax: 61 (0)7 3348 5510 e-mail: [ausales@gullico.com](mailto:ausales@gullico.com)

### INDIA - GULLCO INTERNATIONAL INDIA PVT LIMITED

Phone: 91-20-6526-0382 Fax: 91-20-2683-6656 e-mail: [indsales@gullico.com](mailto:indsales@gullico.com)

### CHINA - GULLCO INTERNATIONAL SHANGHAI LIMITED

Phone: +8621-50460341 Fax: +8621-50463554 e-mail: [c.zhang@gullico.com](mailto:c.zhang@gullico.com)

### SINGAPORE - GULLCO INTERNATIONAL LIMITED

Phone: +65-9385-4468 e-mail: [benny.lim@gullico.com](mailto:benny.lim@gullico.com)

### LATIN AMERICA - GULLCO INTERNATIONAL LIMITED

Phone: 55-11-99485-1336 e-mail: [rogerio.macedo@gullico.com](mailto:rogerio.macedo@gullico.com)

### Stuch GmbH & Co. KG Schweisstechnik - GERMANY

Phone: (02 03) 72 94 95 Fax: (02 03) 72 94 96 e-mail: [info@stuch-schweisstechnik.de](mailto:info@stuch-schweisstechnik.de)

[WWW.GULLCO.COM](http://WWW.GULLCO.COM)



**WELDING AND CUTTING CARRIAGE - KAT® FOR FLEXIBLE TRACK**

The Gullco Flexible KAT® is used throughout the world to automate a wide variety of welding and cutting operations.

It is a durable, reliable precision travel carriage designed for use on flexible track which enables it to operate on straight or curved surfaces along any position.

Gullco manufactures several systems and accessories designed for use with the Flex KAT® making it one of the most versatile pieces of welding/cutting automation equipment available.

**MULTI-PASS WELDS****CLADDING OVERLAY****ALL POSITION**

*Reliable automation that improves quality and reduces costs in welding and cutting operations*

**ALL POSITION - PRECISE CONTROL - VARIABLE SPEED**







# AUTOMATED WELDING SYSTEM KAT® FLEXIBLE TRACK

The Gullco Flex KAT® Carriage is used throughout the world to automate and improve the quality and efficiency of single or multiple "head" welding and cutting operations. Welding guns or cutting torches are mounted on the KAT® carriage as it moves along Gullco Flex Track at precisely controlled speeds along the desired path in forward or reverse direction. Gullco's Flex KAT® carriage enables welding guns or cutting torches to operate with precise motion from start to finish regardless of the number of passes or the work pieces involved. This improves the quality, efficiency and repeatability of the process. Poor or awkward accessibility, operator fatigue, or inconsistent workmanship are eliminated.

This unit is designed for operation on curved surfaces as the flexible track can be positioned to follow the contour of the work piece. The self-aligning wheel system of the carriage grips the top and bottom of the track, enabling it to travel along any plane. The adjustable wheel assembly keeps the carriage snug to the track, while allowing it to be easily mounted and removed from the track at any point. The positive drive of the KAT® is obtained from a uniquely designed sprocket that engages with slots in the track, driven by a low voltage permanent magnet motor and gear-head power unit assembly.

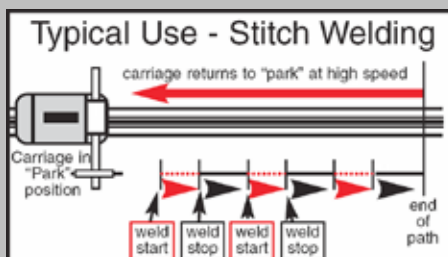


## AUTO-WELD CARRIAGE SYSTEM

The KAT® Auto-Weld Carriage option enables a wide variety of automated welding and cutting overlay cycles that can be repeatedly performed. The GSP control in this unit controls travel direction and speed and length of travel path and synchronizes them with precise weld start and weld stop settings. This travel carriage is pre-drilled for mounting



Auto-Weld accessories (sold separately). It is ideal for stitch welding and seam welding applications where repeatability is desired. The reliability and precision of this automated welding and cutting system reduces cost, adds efficiency and improves quality.



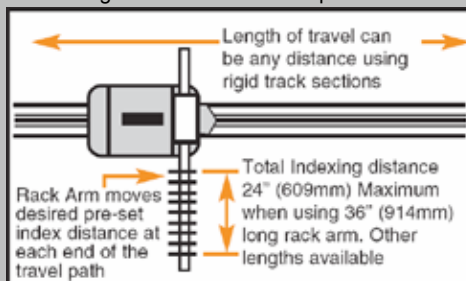
A

## CLADDING / OVERLAY SYSTEM

The Indexing option Flex KAT® uses a GSP control that combines control of the carriage movement and start/stop parameters with precise indexing of the torch at the end of the path. This fully automates and increases the efficiency of overlay welding operations, flame spray work, hard facing etc. At the end of the path the travel carriage



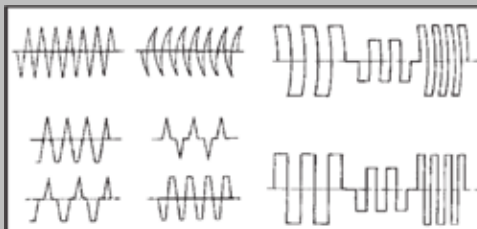
automatically stops and reverses direction while at the same time indexing the gun/torch. It can be programmed to weld or not weld during indexing. Carriage is pre-drilled for quick mounting of the indexing unit (sold separately).



I

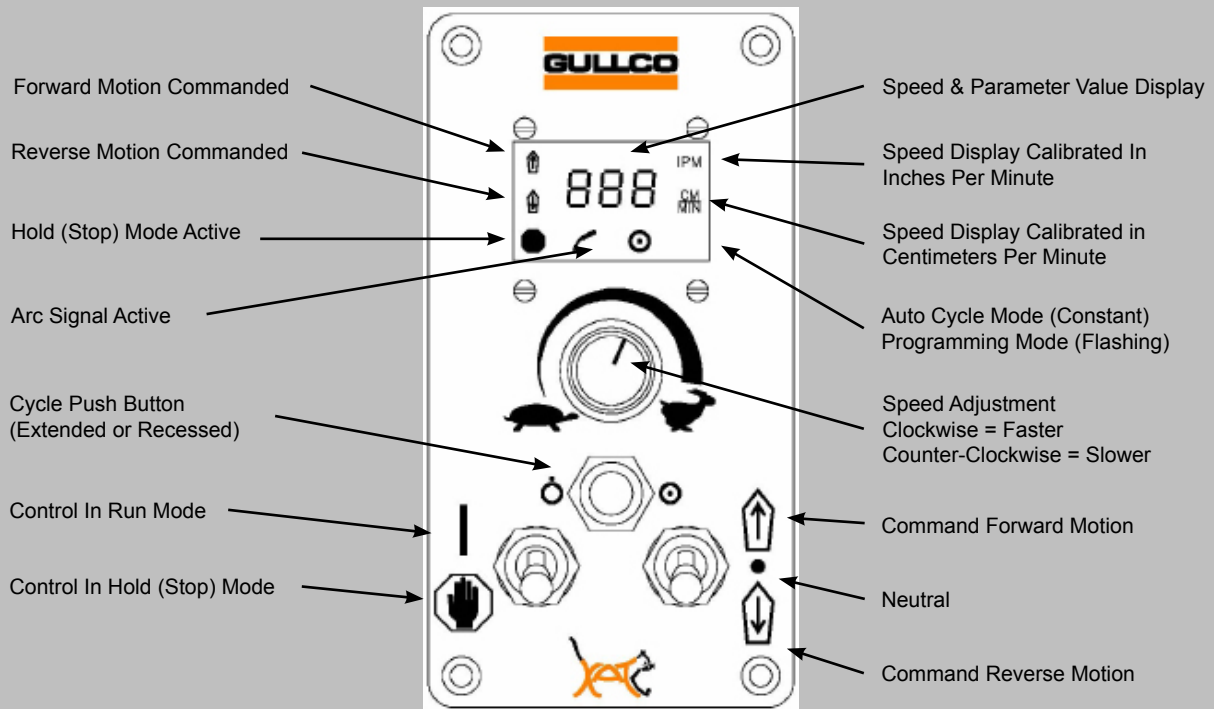
## OSCILLATION WELDING SYSTEM

The oscillator is available with a linear, pendulum, tangential or step (square pattern) motion to the welding gun with adjustable motorized stroke width, infinitely variable stroke speed adjustment, three independent position dwell times, motorized centre line positioning and automatic wire feed start and travel start/stop interface.



O

The Gullco Standard Platform range of controls have switching for forward / neutral / reverse, run / stop, Manual / Auto & program variable increment/decrement (where applicable) and a rotary encoder for speed control. This microprocessor based, 24 volt DC motor control can be supplied to provide a variety of "optional" functions such as indexing, weld oscillation and auto-weld. The selected "option" function and carriage travel speed/ direction are directed by a single GSP control. This ensures high levels of accuracy, quality and reliability.



Select a speed, voltage and option to configure a KAT® specifically suited to your needs

**GK-200-**    —

SPEED RANGES	
MODEL	SPEED RANGE
FL	0.8 to 25.8 IMP (2 to 65.4 cm/min)
FM	1.5 to 51.5 IPM (3.9 to 131 cm/min)
FH	4.2 to 139.1 IPM (10.6 to 353 cm/min)

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

## SPECIFICATIONS

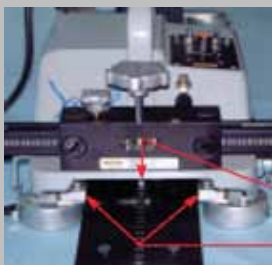
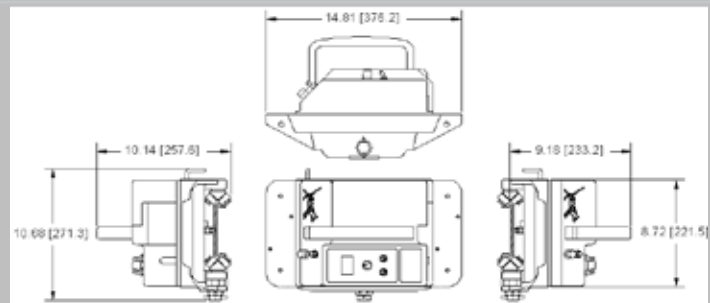
**Weight:** 29 lbs (13 kg)

**Vertical Load Capacity:** 100 lbs (45 kgs)

**Drive Motor:** 24 VDC permanent magnet gear motor

**Supply Voltage:** 42, 115, 230 VAC, single phase 50/60 Hz., 200 Watts

**Complies With:** CSA & CE Certification

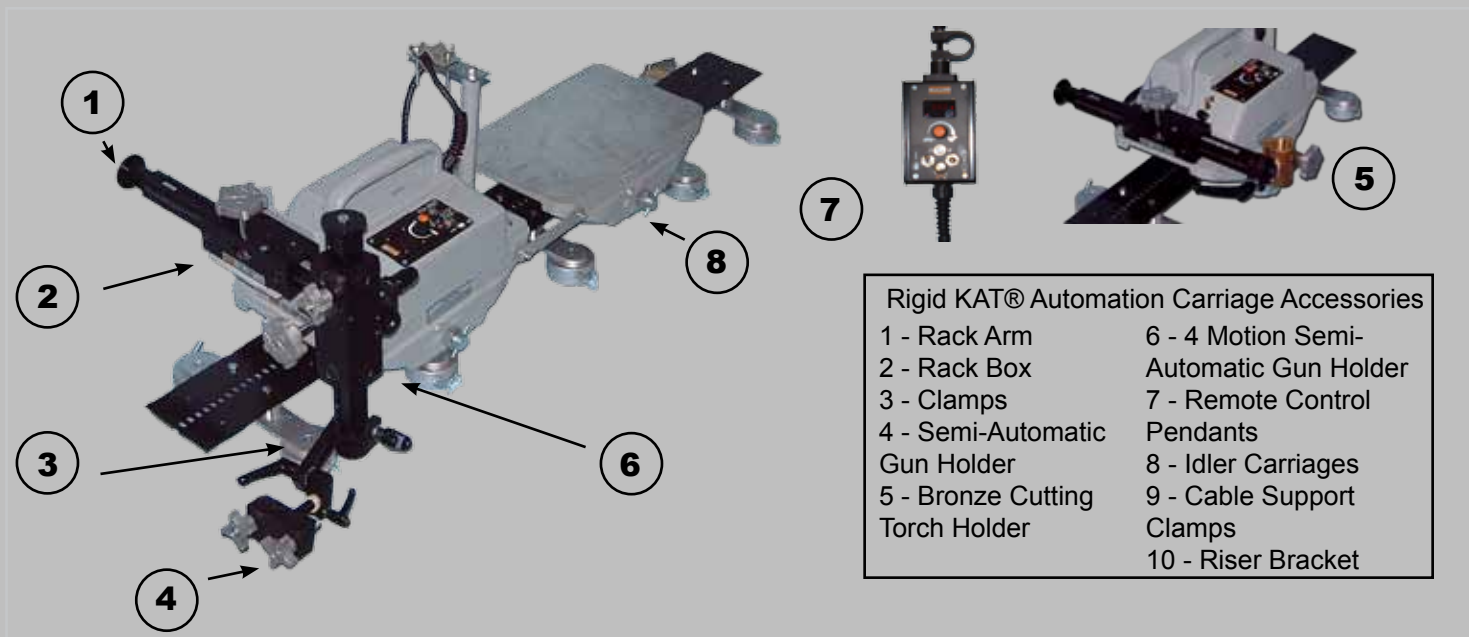


Unique Drive System and Wheel Assemblies Enable Travel in All Positions Including Overhead



Ball studded drive sprocket engages apertures in the track

Self-aligning wheel assemblies run on both top and bottom of the track... enabling operation on any plane.



## FLEX KAT® TRACK AND MOUNTING DEVICES

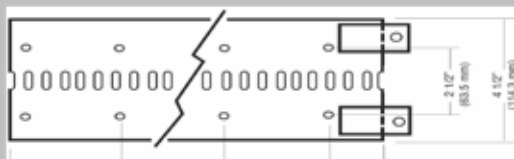
Gullco Heavy Duty Flexible Track is specifically designed for use with Gullco Flexible KAT® all position travel carriages. Flexible Track is made from specialty tempered spring steel and can be easily mounted to conform with curved surfaces. This Flexible Track can be used in applications involving curved surfaces 60" (1524 mm) diameter and greater. The track is securely mounted on ferrous materials using round or square magnet assemblies and vacuum mount assemblies for non-ferrous materials.



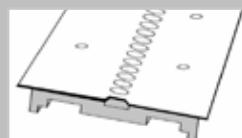
Rare Earth On/Off  
Track Magnet



Vacuum Track  
Mounting Device



Weight  
Heavy Duty:  
Model **GK-192-F-054-2**  
175 lbs/ft. (2.6 Kg/m)



**Flexible-Track Stiffener**  
Extruded aluminum  
for attachment to  
Gullco Flexible Track  
sections for "rigid track"  
applications. Supplied in  
8 ft. sections



**KAT® FLEXIBLE-TRACK  
HEAVY DUTY FLEX-TRACK Model  
GK-192-F-054-2**  
Supplied in 8 ft. (2438 mm) lengths.  
Also available in custom lengths up  
to 8 ft. (2438 mm) with interlocking  
ends to facilitate complete circles  
for diameter 60" (1524 mm), O.D.  
& I.D. and over. Tracks are easily  
joined for continuous runs.  
Other lengths available on request.

**AUTOMATED OSCILLATION WELDING CARRIAGE - KAT®**



Ideal for heavy fabrication industries  
such as: Shipbuilding, Tank Welding,  
Pipeline and Bridge Construction

Motorized weld center line adjustment

Motorized stroke width adjustment

Precise oscillation speed control

Stores up to 10 different weld programs  
for quick recall of frequently used  
processes

*Linear or Radial Oscillation Capability*

ALL POSITION WELDING AND CUTTING AUTOMATION CARRIAGE







### **Models For All-Positions, Flat or Curved Surface Weld Oscillation**

The Gullco KAT® Oscillator Package is comprised of the compact oscillator head, controls, mounting brackets, connecting cable, 1-1/8" heavy duty micro fine rack boxes with rack arms for horizontal and vertical adjustments and standard MIG gun holder, together with a KAT® carriage for rigid track or flex track as shown above.

**Model Series GK-200-F** (left) is supplied with a Gullco KAT® specifically designed for operation on spring steel KAT® Flexible Track.

**Model Series GK-200-R Combo** (right) is supplied with a KAT® specifically designed for operation on rigid aluminum KAT® track.

All are equipped with the Gullco microprocessor-based programmable control with a closed loop feedback system for complete speed accuracy regardless of load [0-100 lbs. (45kgs)] when operating in any weld position.

Detailed information is provided on the back page of this brochure.

### **Also Available Are The Linear or Radial Separate Remote Controlled Compact Oscillator Assembly - Model GK-201-100-RC**

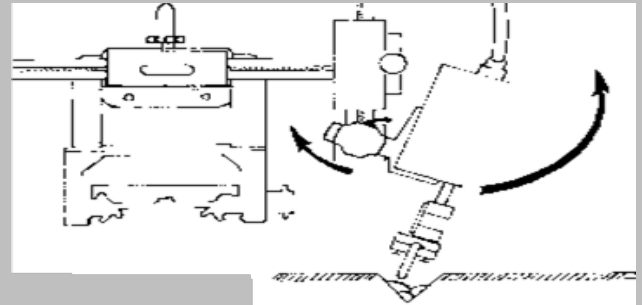
This assembly is comprised of either radial or linear Oscillator Head with MIG gun holder, Remote Control Box, Control Cable (up to 20ft), Micro Fine Rack Boxes, Rack Arms, and Brackets. It can be mounted on existing KAT® All-Position Travel Carriages, Welding Head Manipulators, Side Beam Carriages, etc.





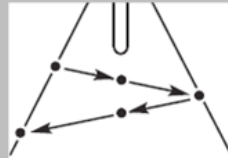
### TANGENTIAL AND PENDULUM OR LINEAR MOTION

The oscillator heads are capable of producing three distinct motions when mounted in either the horizontal or vertical position. Shown in the above (right) is a tangential or scribing motion. The other, (middle) is a pendulum motion. Combined with the third linear straight line head they meet all welding oscillation requirements.



### MOTORIZED CENTRELINE ADJUSTMENT

With independent, electronically controlled dwells (0-5 sec.) at each end of the stroke and at the centre of the stroke path.

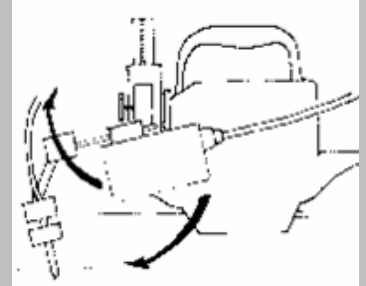


**MOTORIZED STROKE WIDTH** - Easy, precise adjustment to provide the required weld pattern.

**OSCILLATION SPEED CONTROL**- Oscillation speed is electronically controlled by a speed potentiometer (140 inches per minutes (linear) 45° per second (radial)).

The proper torch angle/position is established quickly and easily with the Gullco KAT® Oscillator Head.

It's simply a matter of tilting the oscillator, which can be adjusted side to side or forward and backward this results in the elimination of the time consuming and generally ineffective procedure of tilting the carriage or track.



## Combining High Precision With Exceptional Versatility

High precision, state-of-the-art controls on the KAT® carriage automatically direct the desired forward/reverse movement or dwell of the welding gun and its oscillation motion to produce the numerous weld patterns shown below. The carriage control enables the carriage speed and direction to be pre-set and shown on its

LED display in IPM or cm/min. The oscillator controls enable pre-setting of the carriage delay/start after wire feed start, dwell times, stroke speed, stroke width, program storage and cycle start.

Control information is available on the following page

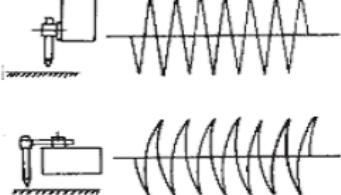


### Some of the Weld Patterns Attainable With the KAT® Oscillator System

#### ANGULAR OSCILLATION PATTERN

KAT CARRIAGE TRAVELS CONTINUOUSLY

WITH OSCILLATOR HEAD VERTICAL TO WORK

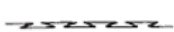


SPECIAL OSCILLATION

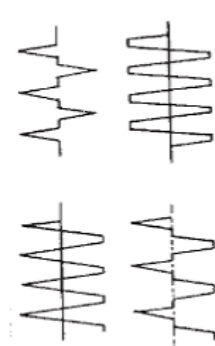
Tilted - for welding on horizontal plane



Straight Line - Back and forth oscillation



COMBINING OSCILLATION AND OSCILLATOR DWELL



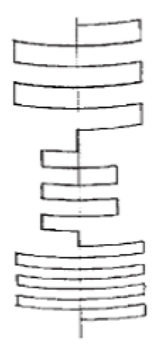
#### STEP OSCILLATION PATTERN

KAT CARRIAGE TRAVELS ONLY DURING END DWELLS

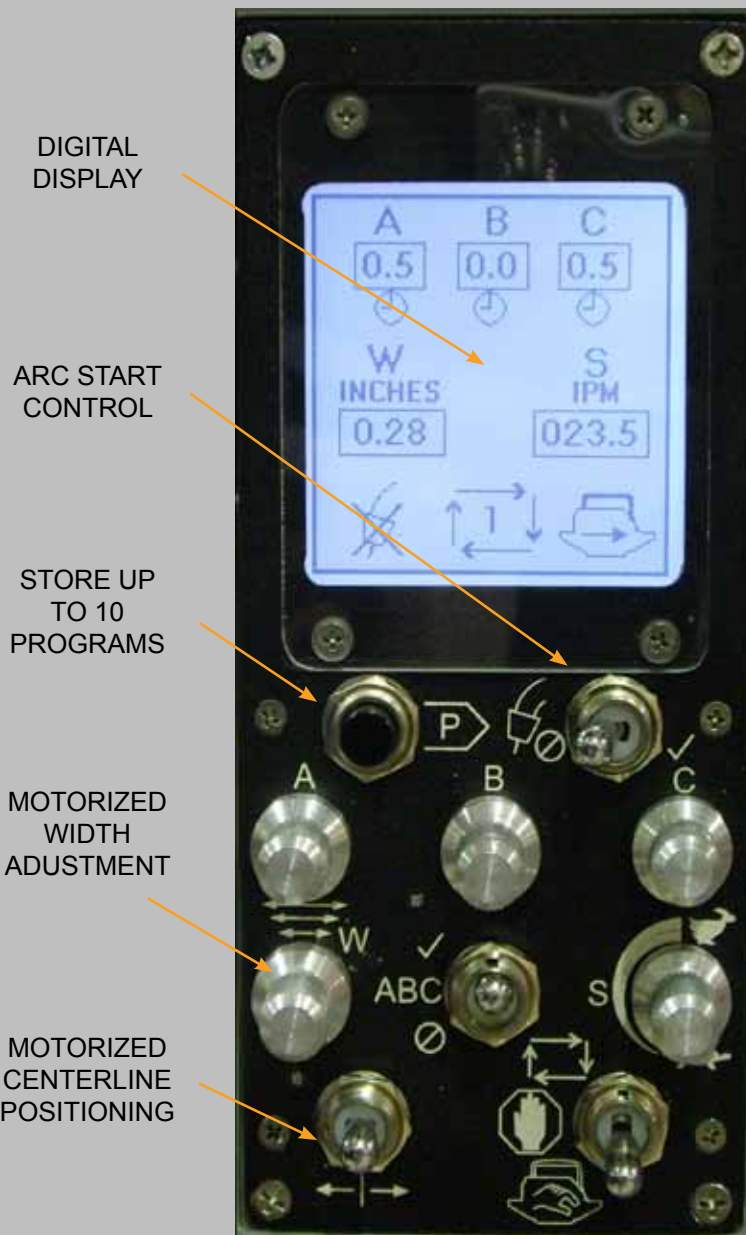
Oscillation Head Vertical



Oscillation Head Horizontal



## OSCILLATOR CONTROL



## RADIAL OSCILLATOR



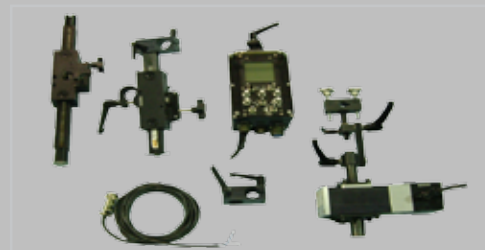
This advanced oscillation package is designed to increase production and improve the quality of the weld produced in automatic mechanized welding operations by minimizing weld defects such as poor penetration, incomplete fusion, overlap and undercut.

The GK-200 Series Compact Oscillator Carriage combination comes with the option for linear or radial oscillation head and can be equipped for use on either rigid or flexible track.

The oscillator is available with a linear, pendulum, tangential or step (square pattern) motion to the welding gun with adjustable motorized stroke width, infinitely variable stroke speed adjustment, three independent position dwell times, motorized centre line positioning and automatic wire feed start and travel start/stop interface.

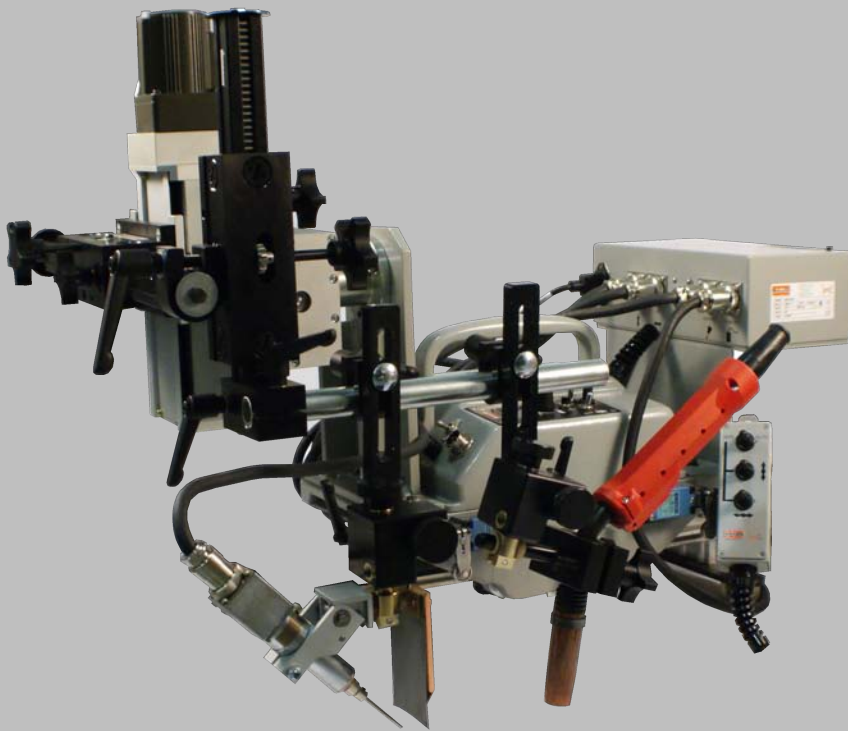
By combining welding gun oscillation movement with the precision controlled travel speed of the Kat carriage, up to 10 weld programs can be produced and stored.

## LINEAR OSCILLATOR





ELECTRONIC SEAM TRACKING SYSTEM - KAT®



\* Carriage sold separately

A high precision tracking system that maintains the torch in optimum operating position regardless of variations in the weld seam. This provides improved quality and efficiency in a wide variety of welding operations.

*High Precision Weld Tracking System*

MAINTAIN THE TORCH IN OPTIMUM OPERATING POSITION TO PRODUCE THE HIGHEST QUALITY WELDS





The quality and efficiency achieved with today's automated welding systems can be impaired by material warpage, misalignment, irregular edge fit-up, different material thickness and other conditions that cause variations in the weld seam. Gullco KAT® Trackers restore optimum performance when these conditions are encountered. They continually sense the slightest variation across the weld seam and automatically correct the position of the weld torch.

The trackers are designed for incorporation and use with the Gullco KAT® travel carriage system but can readily be used with other travelling and rotating devices employed in automated welding operations.

The systems are effectively employed to cut costs and increase productivity in a wide range of applications such as tank, pressure vessel, pipe and structural component fabrication and deep groove welding operations.

Gullco KAT® Trackers are available in standard or heavy duty models to meet virtually all requirements. A brief description of each is provided below.

---

### **GULLCO KAT® TRACKERS**

These Trackers provide precise vertical and horizontal tracking plus...

#### **ELECTRONIC "END OF PLATE DETECTION"**

- puts the tracking system on "hold"... Preventing the torch from driving into the plate and allowing welding to continue to the plate edge.

#### **ELECTRONIC "TACK DETECTION"**

- interrupts the automatic tracking action when a tack-weld is encountered preventing the torch from rising prematurely...and returns the system to normal action when it reaches the end of the tack weld.

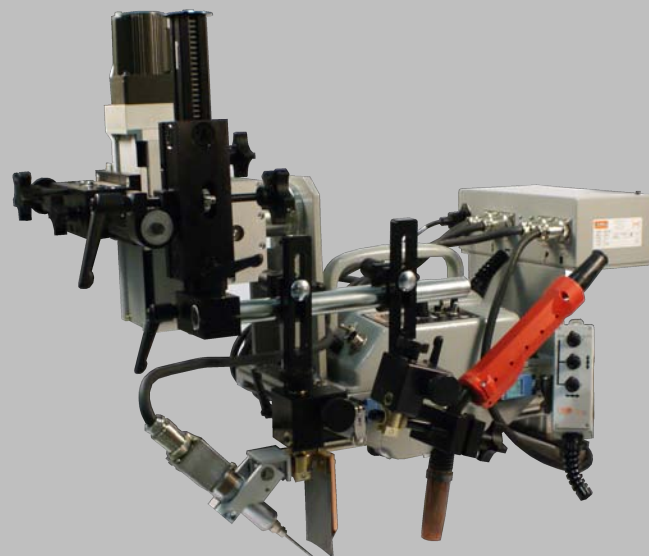
#### **MODEL WSG-1200:**

This model has up to 55 lb. (25kg) vertical load capacity at 4" (100mm) extension from the face plate. The standard stroke is 4" x 4" (100x100mm).

#### **MODEL WSG-2200:**

The heavy duty version of model WSG-2200 with a vertical load capacity up to 100 lbs. (45 kg) at 6" (150mm) extension from the face plate. The standard stroke is 6"x6" (150x150mm).

Note: The above data applies to standard slide assemblies. Other slide lengths, speed and higher capacities are available.



KAT® Tracker Model  
WSG-1200 Electronic  
Seam Tracker

**KAT® Trackers are precise, dependable and highly versatile. They can be used with a wide range of Gullco accessories/ systems such as oscillators, bridge units, multiple torch assemblies etc. Contact Gullco with your requirement.**



Model WSG-2200 Mounted  
on a side beam carriage  
equipped with a submerged  
arc head

## SPECIFICATIONS

### GULLCO MODEL WSG-1200 KAT® TRACKER SYSTEM SYSTEM COMPONENTS

Main Control Box, Pendant Remote Control Box, Probe, Probe Micro Cross-Slide, Motorized Cross-Slide Assembly, Probe-To-Torch Mounting Bracket, Control Cables from Probe and Cross-Slide to Main Control Box, Torch Holder with vertical/ horizontal adjustment, Brackets for mounting Cross-Slide and Main Control Box on KAT® Travel Carriage.

#### MAIN CONTROL BOX

Incorporates main power switch, On/Off pilot light, signal lights indicating sensing function and fuse. Electronic circuit components incorporated in modular system with circuit boards for easy maintenance.

Size: (H) 5-1/2" (W) 2" (D) 1-1/2" (140 x 50 x 38mm.)

Weight: 2 lbs. (900 grams)



#### PENDANT REMOTE CONTROL BOX

Incorporates manual/automatic changeover switch and inching switch -vertical up/down and horizontal left/right.

Size: (H) 5-1/2" (W) 2" (D) 1-1/2" (140 x 50 x 38mm.)

Weight: 2 lbs. (900 grams)



#### PROBE

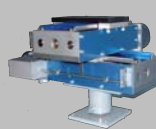
Supplied complete with replaceable 1/8" dia. Probe tip. The assembly incorporates a Shock Protector that protects the system's electronics by breaking when heavy shock is encountered.



#### PROBE MICRO CROSS SLIDE

Provides precise manual pre-positioning of probe relative to torch prior to automatic operations. Stroke plus or minus 3/4" (20mm).

Weight: 1-3/4 lbs. (900 grams)



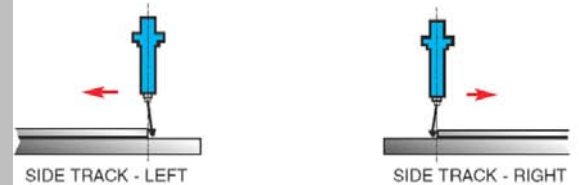
#### MOTORIZED CROSS-SLIDE ASSEMBLY

Model	WSG-1200	WSG-2200
Vertical Load Capacity:	up to 55 lbs. (25kg)	up to 100 lbs
Standard Stroke Length:	4" (100mm)	6" (150mm)
Standard Stroke Speed:	10.16 in/min	9.8 in/min
Height	14" (355mm)	18 1/2" (472mm)
Width	14" (355mm)	18 1/2" (472mm)
Depth	4 3/4" (120mm)	6 1/2" (170mm)
Weight	22 lbs. (10kg)	50.6 lbs. (23kg)

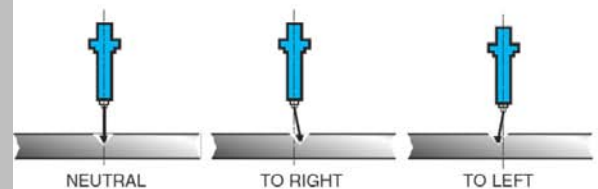
Power Requirements: 110/115 Volt AC - Single phase 50/60 Hz  
Longer slides, other speeds and higher capacity units available on request.

...incorporating sensing modes that cover virtual all tracking requirements

### GULLCO KAT® TRACKERS MODEL WSG-1200 & 2200 SINGLE DIRECTION SENSING

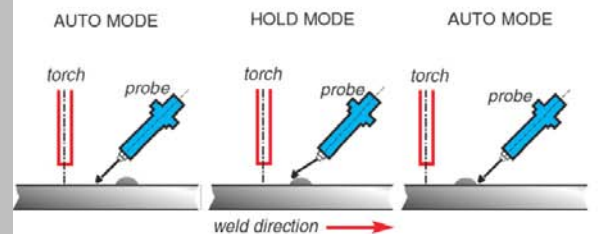


#### TWO DIRECTIONAL RIGHT/LEFT SENSING



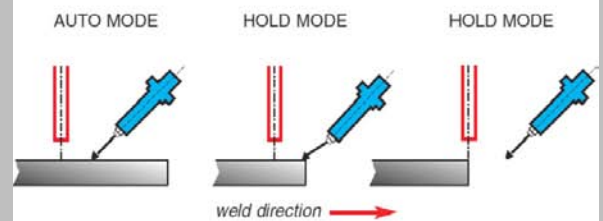
plus...

#### WELD TACK DETECTION



plus...

#### END OF PLATE DETECTION



Gullco Mechanical Seam Trackers and Height Sensors are designed for use with the Gullco KAT® Travel Carriage to accurately maintain the required, pre-set distance between the gun or torch and the workpiece in automated welding and cutting operations.

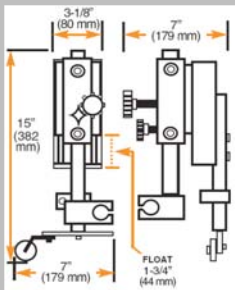
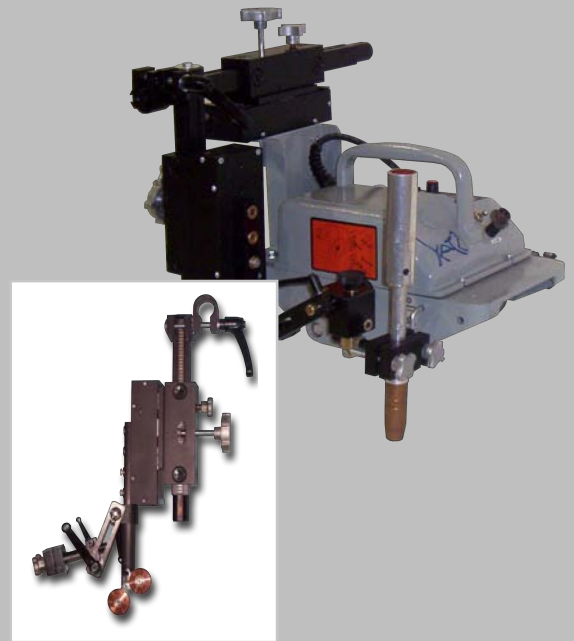
Three models are available to effectively meet various application needs. All are constant velocity, spring-type sensors utilizing hardened and ground slide bars with recirculator ball bushings to provide 1-3/4" (44mm) of torch float.\*

**Model GK-190-600** Height Sensor has an adjustable swivel copper guide wheel to contact the work surface.

**Model GK-190-602** Height Sensor has a stainless steel ball transfer that is particularly useful to maintain contact on curved surfaces or vertical applications.

**Model GK-190-603** Seam Tracker is specifically designed for fillet welding applications.

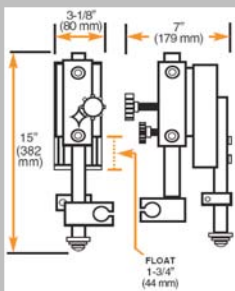
*\*Other float distances available on request.*



#### MODEL GK-190-600

Mechanical Height Sensor with constant velocity spring, hardened ground rods and circulator ball bushings to provide 1-3/4" (44mm) of torch float.

Supplied complete with adjustable, swivel copper guide wheel, 1-1/8" (29mm) sq. rack box, 12" (304mm) rack arm and swivel mounting clamp for attachment to KAT® Travel Carriage arm.



#### MODEL GK-190-602

Mechanical Height Sensor with constant velocity spring, hardened ground rods and circulator ball bushings to provide 1-3/4" (44mm) of torch float.

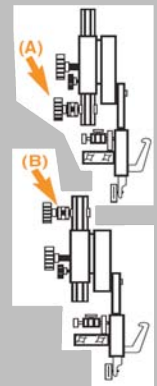
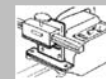
Supplied complete with hardened stainless steel ball assembly, 1-1/8" (29mm) sq. rack box, 12" (304mm) rack arm and swivel mounting clamp for attachment to KAT® Travel Carriage arm.

#### MODEL GK-190-603

Mechanical Seam Tracker with constant velocity spring, hardened ground rods and recirculator ball bushings to provide 1-3/4" (44mm) of torch float and 1-1/4" (31.75mm) of weld seam misalignment in both the horizontal and vertical plane. The assembly includes a Micro Cross-slide with gun holder to provide 3/4" (19mm) of XY adjustment. Supplied as standard with single copper guide wheel, 1- 1/8" (29mm) sq. rack box, 12" (304mm) rack arm and 1-1/8" (29mm) swivel mounting clamp for attachment to KAT® Carriage rack arm.

(A) When the weld seam is below the Kat carriage level, the sensor rack arm clamp is located below the sensor rack box.

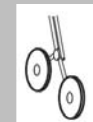
(B) When the weld seam is above carriage level the sensor rack arm clamp is positioned above the sensor rack box. Additional height adjustment may be required. We recommend the use of our Rack Box Riser Assembly (below) to increase the carriage rack arm height by 2", 4" or 6"



#### SPECIAL SENSOR GUIDE WHEEL ASSEMBLIES For Fillet Welding applications involving tack welds

##### Model GK-190-604

Dual in-line guide wheels react independently when tack welds encountered on thin edge material, one always in contact with the weld seam.



##### Model GK-190-605

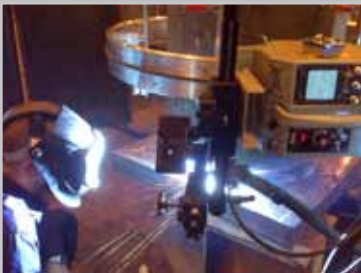
Dual, side-by-side guide Wheels straddle tack weld Line in general range of Fillet Weld applications.





**WELDING AND CUTTING CARRIAGE - KAT® FOR RIGID TRACK**

The Gullco Rigid KAT® is used throughout the world to automate a wide variety of welding and cutting operations. It is a durable, reliable precision travel carriage designed for use on rigid track which enables it to operate along any plane. The rigid track can be used in straight sections or can be formed for use on curved surfaces. Gullco manufactures several systems and accessories designed for use with the Rigid KAT® making it one of the most versatile pieces of welding and cutting automation equipment available in the industry.

**MULTI-PASS WELDS****CLADDING OVERLAY****ALL POSITION**

*Reliable automation that improves quality and reduces costs in welding and cutting operations*

**ALL POSITION - PRECISE CONTROL - VARIABLE SPEED**







# AUTOMATED WELDING SYSTEM KAT® RIGID TRACK

The Gullco Rigid KAT® carriage is used throughout the world to automate and improve the quality and efficiency of single or multiple “head” welding and cutting operations. Welding guns or cutting torches mounted on the KAT® carriage move along Gullco standard or deep section track at precisely controlled speeds along the desired path in forward or reverse direction. Gullco’s Rigid KAT® carriage enables welding guns or cutting torches to operate with precise motion from start to finish regardless of the number of passes or the work pieces involved, improving the quality, efficiency and repeatability of the process. Poor or awkward accessibility, operator fatigue, or inconsistent workmanship are eliminated. This unit is designed for operation on flat or curved surfaces as the track can be used in straight sections or roll formed to follow the contour of the work piece. The self-aligning wheel system of the carriage grips the top and bottom of the track, enabling it to travel along any plane. The adjustable wheel assembly keeps the carriage snug to the track, while allowing it to be easily mounted and removed from the track at any point. The positive drive of the KAT® is obtained from a uniquely designed rack and pinion system, driven by a low voltage permanent magnet motor and gearhead power unit assembly.

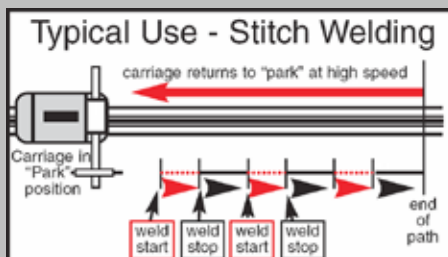


## AUTO-WELD CARRIAGE SYSTEM

The KAT® Auto-Weld Carriage option enables a wide variety of automated welding and cutting overlay cycles that can be repeatedly performed. The GSP control in this unit controls travel direction/speed and length of travel path and synchronizes them with precise weld start and weld stop settings. This travel carriage is pre-drilled for mounting



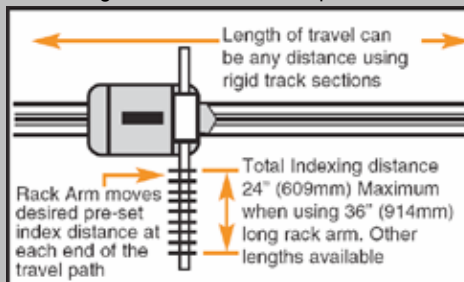
Auto-Weld accessories (sold separately). It is ideal for stitch welding and seam welding applications where repeatability is desired. The reliability and precision of this automated welding and cutting system reduces cost, adds efficiency and improves quality.



A

## CLADDING / OVERLAY SYSTEM

The Indexing option Rigid KAT® uses a GSP control that combines control of the carriage movement and start/stop parameters with precise indexing of the torch at the end of the path. This fully automates and increases the efficiency of overlay welding operations, flame spray work, hard facing etc. At the end of the path the travel carriage

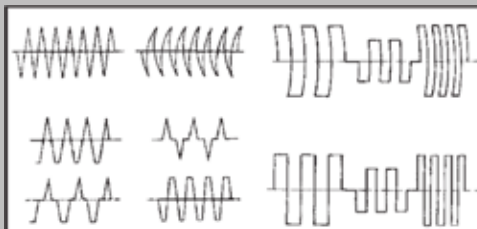


automatically stops and reverses direction while at the same time indexing the gun/torch. It can be programmed to weld or not weld during indexing. Carriage is pre-drilled or quick mounting of the indexing unit (sold separately).

I

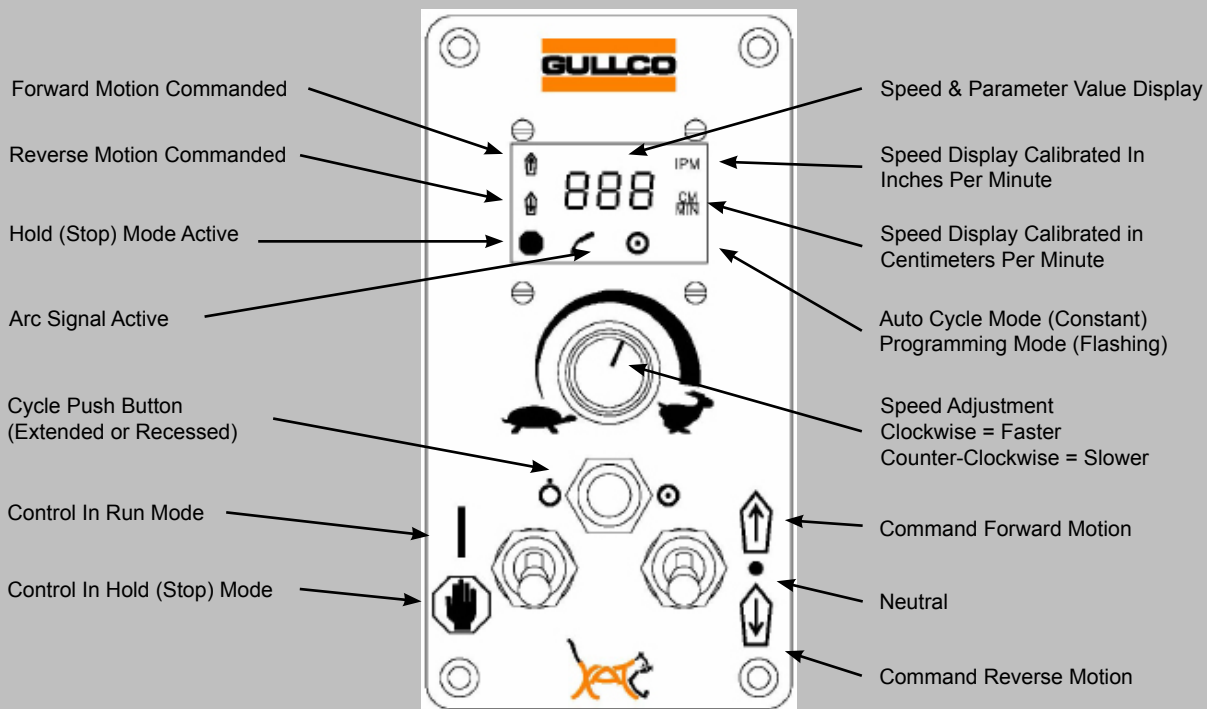
## OSCILLATION WELDING SYSTEM

The oscillator is available with a linear, pendulum, tangential or step (square pattern) motion to the welding gun with adjustable motorized stroke width, infinitely variable stroke speed adjustment, three independent position dwell times, motorized centre line positioning and automatic wire feed start and travel start/stop interface.



O

The Gullco Standard Platform range of controls have switching for forward / neutral / reverse, run / stop, Manual / Auto & program variable increment/decrement (where applicable) and a rotary encoder for speed control. This micro-processor based, 24 volt DC motor control can be supplied to provide a variety of "optional" functions such as indexing, weld oscillation and auto-weld. The selected "option" function and carriage travel speed/ direction are directed by a single GSP control. This ensures high levels of accuracy, quality and reliability.



Select a speed, voltage and option to configure a KAT® specifically suited to your needs

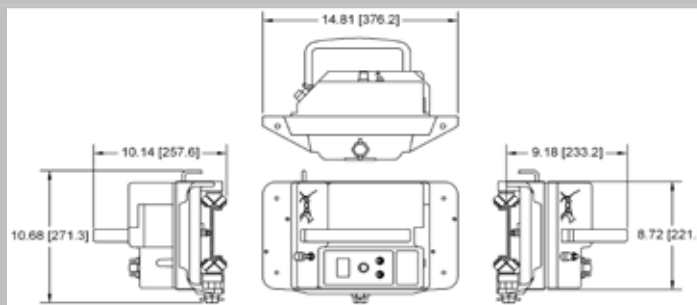
**GK-200-**    —

SPEED RANGES	
MODEL	SPEED RANGE
RL	0.5 to 16.4 IMP (1.2 to 41.6 cm/min)
RM	1 to 32.7 IPM (2.5 to 83.1 cm/min)
RH	2.7 to 88.4 IPM (6.7 to 224 cm/min)

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

## SPECIFICATIONS

Weight: 29 lbs (13 kg)  
 Vertical Load Capacity: 100 lbs (45 kgs)  
 Drive Motor: 24 VDC permanent magnet gear motor  
 Supply Voltage: 42, 115, 230 VAC, single phase  
 Complies With: CSA & CE Certification

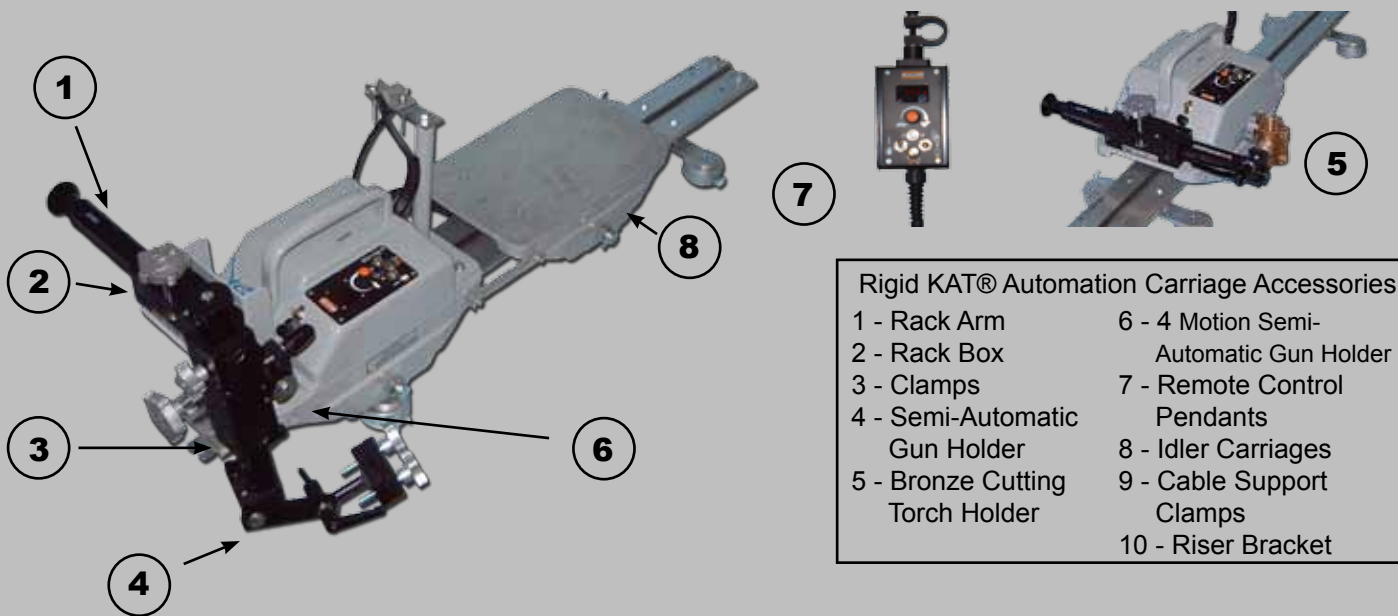


Unique Drive System and Wheel Assemblies Enable Travel in All Positions Including Overhead



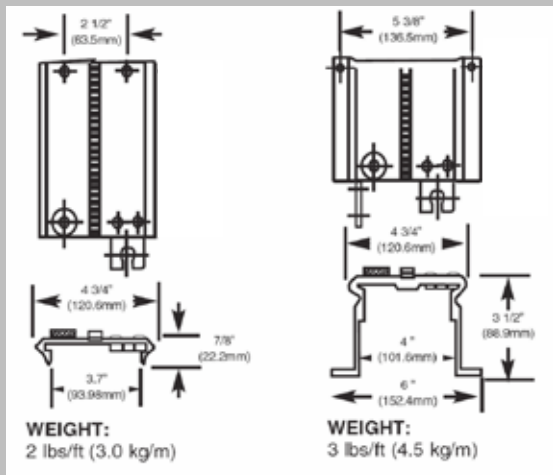
Positive drive rack and pinion system

Self-aligning wheel assemblies run on both top and bottom of track... enabling operation on any plane.

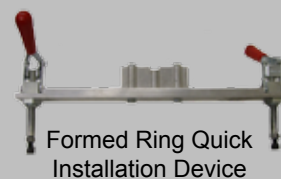
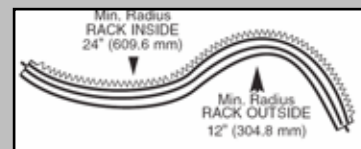
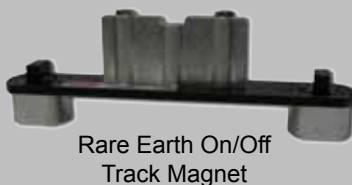


## RIGID KAT® TRACK SYSTEMS

Gulco Rigid Track is made from precision extruded aluminum and a securely affixed steel rack. The interchangeable end design enables fast accurate joining of the track sections. Standard Track, used in most portable applications, is available in 48, 96 and 120 inch (1219, 2438 and 3048 mm) lengths and can be formed to suit the work contour. Deep Section Track is used in permanent, straight run applications. It is available in 60" and 120" (1524 and 3048mm) lengths. The track is securely mounted on ferrous materials using round or square magnet assemblies. Vacuum mount assemblies can be used on non-ferrous or ferrous materials.



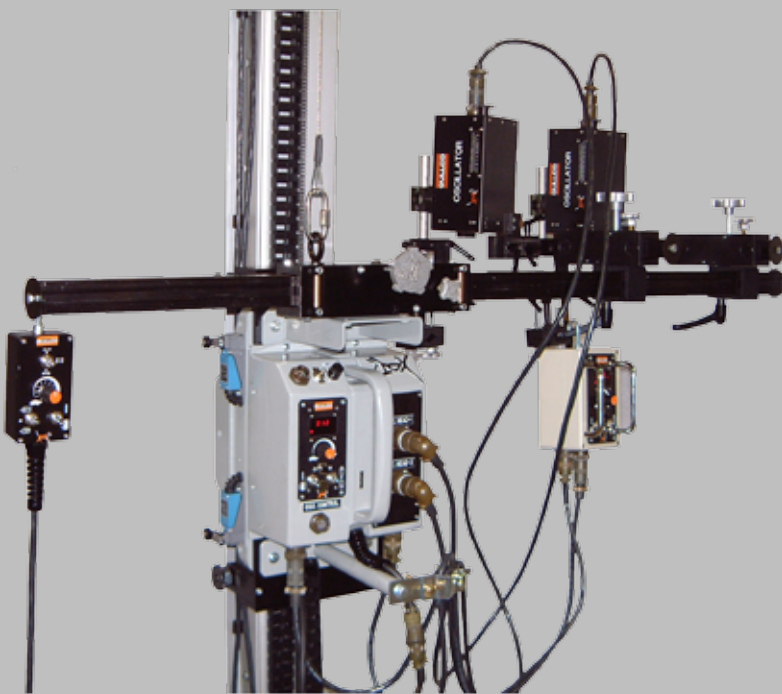
## TRACK MOUNTING DEVICES



KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gulco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL



**OVERLAY WELDING GANTRY SYSTEM FOR ALL POSITIONS**

The Welding Overlay System is designed to operate in all positions. Ideal for use on boiler tube walls, cladding boiler tube walls prior to installation in the boiler, pressure vessel tanks and other applications where overlay repair is required.

The overlay system allows for precise control of the travel speed which allows the operator to achieve clean consistent weld overlay patterns.

The entire system is made up of existing Gullco products and can be easily disassembled into various smaller components for transporting or maneuvering through tighter openings.

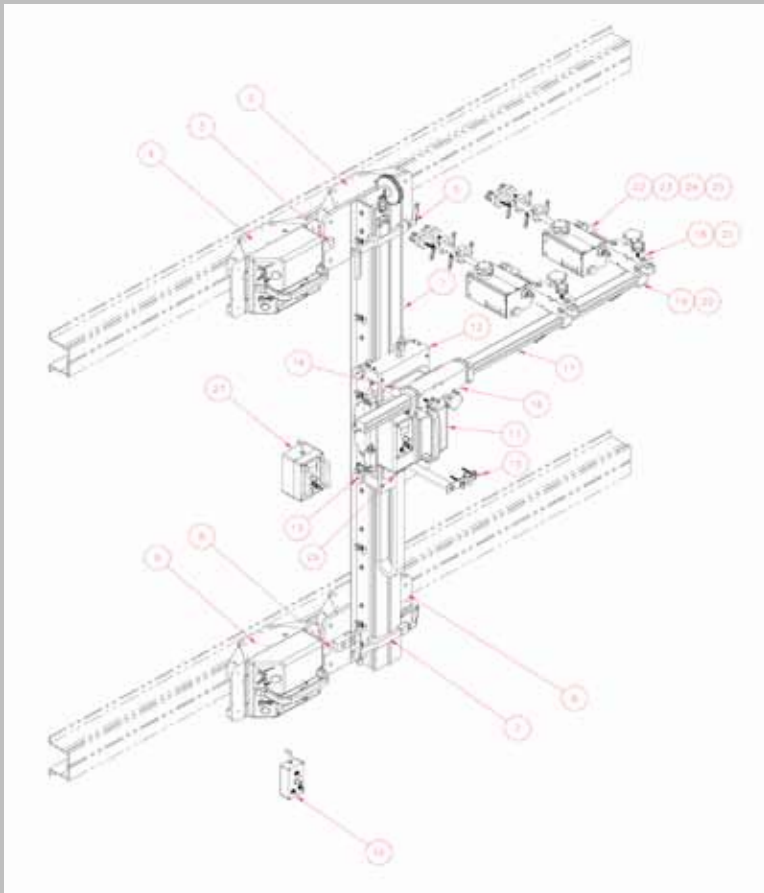
Gullco's team of in-house engineers can customize the system to meet specific application requirements and this is used commonly for unique circumferences or wall applications.

The design of the overlay system is made to optimize time with a quick track mounting system which allows for easy alignment with the work piece.

*Precise remote control of the overlay system ensures consistent weld quality*

MOUNTS EASILY TO AUTOMATE OVERLAY AND CLADDING APPLICATIONS





Item	Part Number	Description	Quantity
1	GS-474-024	VERTICAL TRACK ASSEMBLY	1
2	GS-474-013	UPPER IDLER CARRIAGE ASSEMBLY	1
3	GS-441-016	UPPER TOWING LINK	1
4	GS-474-035	UPPER KAT CARRIAGE ASSEMBLY	1
5	GS-474-047	MODIFIED TRACK STOP ASSEMBLY	1
6	GS-441-017	LOWER IDLER CARRIAGE ASSEMBLY	1
7	GK-191-P-061	RIGID TRACK STOP ASSEMBLY	1
8	GS-441-015	LOWER TOWING LINK	1
9	GS-474-030	LOWER KAT CARRIAGE ASSEMBLY	1
10	GS-441-021	REMOTE FOR UPPER & LOWER CARRIAGES	1
11	GS-474-055	VERTICAL KAT CARRIAGE ASSEMBLY (12-27)	1
12	GS-474-060	FRONT EXTENSION ASSEMBLY	1
13	GS-474-061	REAR EXTENSION ASSEMBLY	1
14	GK-190-066	RACK BOX RISER ASSEMBLY	1
15	GK-181-027	CABLE SUPPORT ASSEMBLY	1
16	GB-413-030	1 - 1/2" HEAVY DUTY RACK BOX	1
17	GS-474-070	1 - 1/2" RACK ARM X 48" LONG	1
18	GK-171-650	1 - 1/8" RACK BOX	2
19	GK-190-236	1 - 1/2" RACK ARM SQUARE CLAMP	2
20	GK-153-004	3/8 - 16 UNC FEMALE HAND LEVER	2
21	GK-171-047-1	1 - 1/8" RACK ARM x 12" LONG	2
22	GS-474-100	OSCILLATOR HEAD	2
23	GK-197-0-101	OSCILLATOR HEAD SWIVEL BRACKET	2
24	GK-197-0-102	BRONZE SWIVEL CLAMP ASSEMBLY	2
25	GK-171-112	ADAPTER BLOCK ASSEMBLY	2
26	GS-474-046	CABLE TRACK CLIP	1
27	GS-474-049	VERTICAL KAT REMOTE	1



OPTIONAL PRECISION COMPOUND SLIDES  
AVAILABLE

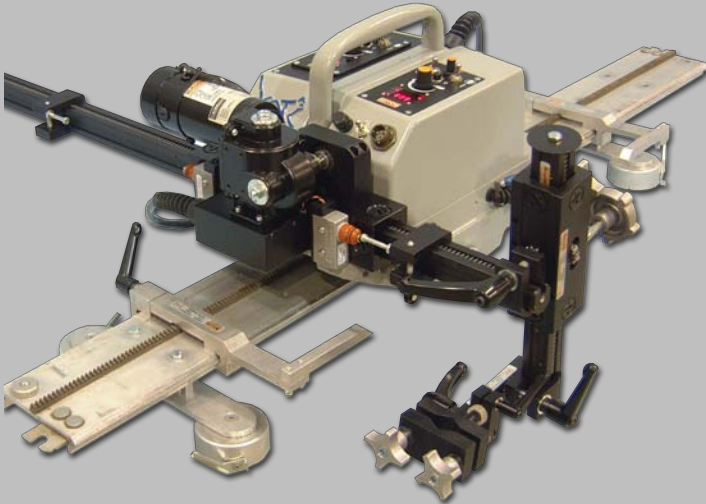


KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL



## CLADDING AND OVERLAY SYSTEM - KAT® INDEXER



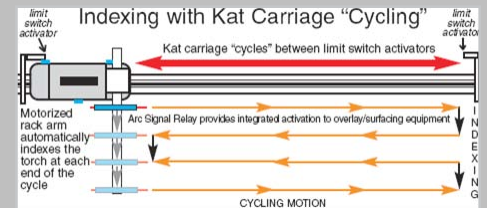
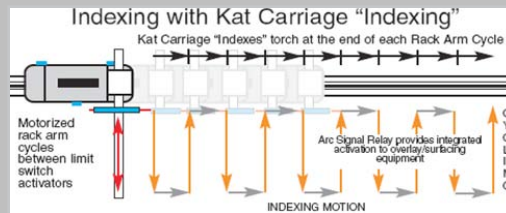
The Gullco KAT® Indexing System is typically used to automate single or multi-head overlay and cladding welding operations, hard surfacing, etc. The automatic routine drives a motorized device (either the KAT® carriage or the motorized rack arm), cycling back and forth between limit switches. When the device that is cycling reaches a limit switch, it pauses, and the other motorized device starts to index the gun/torch a preset distance in a preset direction allowing for consistent uniform weld patterns.

An Arc Signal Relay is supplied with the system to provide integrated arc activation signals to the overlay/surfacing equipment. Two Gullco Standard Platform (GSP) controls, each with dedicated microprocessor chips, are used to control the automatic, two axis indexing system. One GSP control is the Cycle Control and the other is the Index Control. Each control offers user programmable parameters and variables to allow fine tuning and functional control of the automatic cycle.

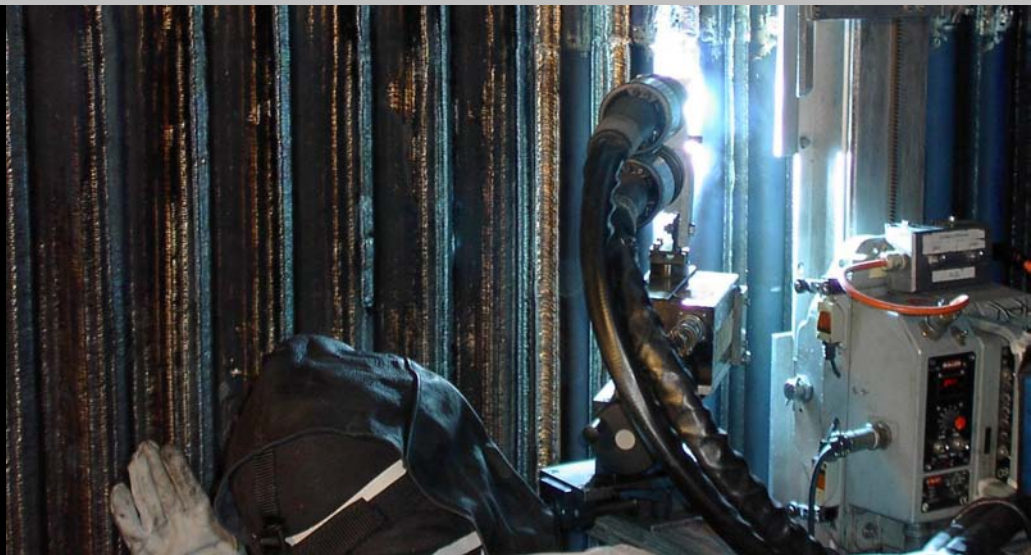
Gullco Indexing Systems, enable repetitive overlay- surfacing cycles to be preformed, with precise motion of the gun/torch from start to finish, regardless of the number of passes of the work pieces involved.



A Remote Control  
Pendants Is Available  
When Required



*Automates Overlay and Cladding Welding Operations*  
MODELS AVAILABLE FOR USE WITH RIGID AND FLEXIBLE TRACK SYSTEMS





## SPECIFICATIONS

**Main Components:** KAT® Travel Carriage (Flex KAT® for use on flexible track or Rigid KAT® for use on rigid track), KAT® Carriage/Indexer controls, Motorized Indexer Rack Box, Heavy Duty Rack Arm, Control Cable, Limit Switch activators for Carriage and Rack Arm, Torch Holder for standard MIG gun.

**Controls:** Two GSP controls mounted in the KAT®, each with dedicated microprocessor chips, are used to control the automatic, two axis indexing system. One drives the KAT® carriage; and one drives the motorized rack arm. They provide: Auxiliary wire feeder on/off, 16 Position Switch giving selectable index increments, Maximum travel of 24" (609 mm) using 36" (914 mm) long rack arm, Two Digit Display indicating the time that rack arm will index, KAT® Carriage Forward/ Reverse Switch and Carriage speed potentiometer, rack arm Jog Switch and Left/Off/Right switch, Auto On/Off switch, LED display.

**Indexing Motorized Rack Box:** Complete with limit switches and activators to prevent rack arm overrun, high torque gear motor to provide precise repeatability of the rack arm indexing distance. Standard assembly combines heavy duty 8" (203 mm) long rack box with 1-1/8" (29 mm) sq. x 36" (914 mm) long rack arm. Other lengths available.

Flex or Rigid KAT® Travel Carriage: with microprocessor pulse width modulation motor controls offering operator interface of forward, stop, reverse and infinitely variable control of the speed, within the range of the models. Travel speeds of the KAT® and rack box are electronically controlled using an optical tachometer on the back of each gear-motor. Through the use of this closed loop, feedback circuitry, each motor control can obtain accurate and constant speed control of the equipment when running in any plane, regardless of the load (within the rating of the equipment). The length of the KAT® travel path is pre-set by positioning the Track Stops at each end of the desired path. They engage and activate limit switches on the KAT® Travel Carriage to: automatically stop the travel carriage and reverse its movement, activate the control that indexes the rack arm and signals the welding gun to weld or not weld during indexing.

Safety is greatly enhanced by the use of Gullco's low voltage (24V), highly advanced controls and power supply system. Three line voltage inputs, 42, 115 and 230 VAC, single phase, 50/60 Hz, are available (see chart below).

### RIGID KAT® AUTO-WELD

MODEL	SPEED RANGE
L	0.5 to 16.4 IPM (1.2 to 41.6 cm/min)
M	1 to 32.7 IPM (2.5 to 83.1 cm/min)
H	2.7 to 88.4 IPM (6.7 to 224 cm/min)

Select a speed range and voltage to determine your Rigid KAT® Indexer Model Number.

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

GK-200-R ☐ - A

### REMOTE PENDANT CONTROL KIT

For use with the Rigid and Flexible Track KAT® Indexer System. Comprising of Remote Pendant (no control) attached to 8 ft. (843.84 cm) control cable on one end and KAT® control blanking plate on the other end with internal connectors at each end. This remote pendant uses the GSP controls removed from the KAT® Carriage. This kit can be easily field installed (or factory installed at no charge)

### FLEX KAT® AUTO-WELD

MODEL	SPEED RANGE
L	0.8 to 25.8 IPM (2 to 65.4 cm/min)
M	1.5 to 51.5 IPM (3.9 to 131 cm/min)
H	4.2 to 139.1 IPM (10.6 to 353 cm/min)

Select a speed range and voltage to determine your Flex KAT® Indexer Model Number.

VOLTAGES	
MODEL	INPUT SUPPLY
A	42 VAC
B	115 VAC
C	230 VAC

GK-200-F ☐ - A

### Remote Control Indexer for Miscellaneous Rotation Equipment

Comprising of one (1) control box with switches for rack arm jog, cycle start and speed potentiometer. Index distance setting in a range from 0.01 to 9.99 in increments of 0.01. A single limit switch on 15 ft. (4572 mm) cable to provide 1/8" (29 mm) rack arm 36" (914 mm) long providing 24" (609 mm) of variable speed arm travel 1 to 32.7" (25 to 83.1 cm) per minute with limit switches to prevent rack arm over-travel and to stop the wire feeder. Two (2) adjustable rack arm limit switch stops and one (1) four-motion welding gun holder.



**SUBMERGED ARC WELDING CARRIAGE - SAM®**

The versatility and reliability of the Gullco MOGGY® trackless travel carriage system and a variety of quality engineered components combine to provide a highly flexible self-contained welding unit. This SAM® unit is designed to produce precision, quality Submerged Arc or MIG welds.

The SAM® Carriage, friction drive heavy-duty welding carriage, with positive chain drive on four (4) rubber tired wheels using a closed loop tack feedback for accurate speed control. The carriage controlled by the Gullco low voltage 24 volt GSP microprocessor pulse width modulation motor control, all mounted in a remote pendant control box attached to 8 ft. (243.84 cm) control cable housing the GSP control providing the forward/stop/reverse switch and infinitely variable 4-turn speed potentiometer. LED display in IPM or cm/min. An interface cable assembly allows the Miller HDC 1500 DX to control the run/stop function of the SAM® Carriage. A manual clutch enables free wheeling. The carriage comes complete with a main mounting mast and handle assembly, mounting arm for one wire reel. All the mounting arms are equipped with quick jaw mast clamp assembly; vertical and horizontal manual 4" x 4" slides (with hardened ground rods with sleeve bearings for ease of adjustment). Control support arm and one (1) set (two[2]) adjustable guide roll arms. For operation on either 42/115/230 volts, single phase, 50/60 Hz AC power supply. Specify voltage when placing order - B = 115 V, C = 230 V.

SAM® Carriage comes in a model for mounting customer's supplied single sub-arc package. Carriage specifications same as Model **GM-02-295**. No welding equipment is supplied.

### *Automate Submerged Arc Welding Applications*

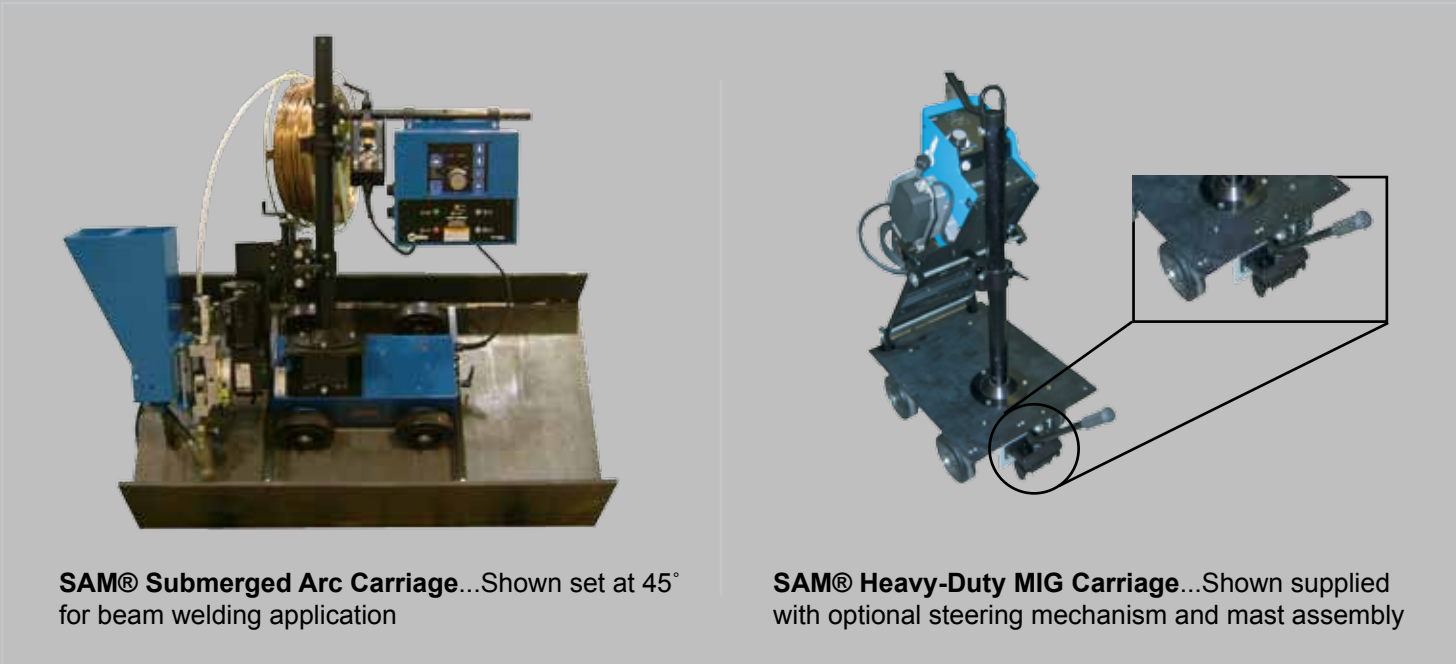
HEAVY DUTY SAM® TRACKLESS WELDING CARRIAGE FOR SUBMERGED ARC AND MIG WELDING



SPECIFICATIONS

GM-02-250 SAM® Heavy-Duty Friction Drive Carriage

The carriage specifications are the same as that of the GM-02-295, but provided with 17" x 22" (43.18 x 55.89 cm) aluminum plate providing full flat mounting surface for customer's supplied wire feeder.



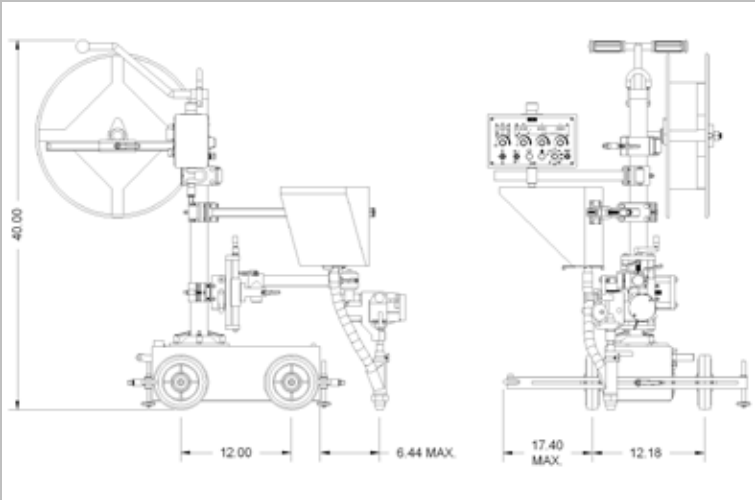
Special track and wheels

-available upon request.

Power Supply: For operation on either 42/115/230 volts, single phase, 50/60 Hz AC.  
(Specify voltage when placing order - B = 115 V, C = 230 V).

Speed Range: 4 to 66.1 IPM (10 to 168 cm/min)

Weight: 172 lbs (78 kg)



KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL





**TRACKLESS WELDING CARRIAGE - MOGGY®**



Ideal for automatic horizontal fillet, lap or butt welding applications

Control allows for continuous or stitch welding operations

Dual gun holder assemblies make automated simultaneous welding efficient

MOGGY® wheels can be inverted to allow carriage to operate on v-groove track

The MOGGY® can be equipped with a variety of accessories including: weld oscillator, cutting torch attachment and internal radius guide wheels

**GM-03-100 - STANDARD CARRIAGE**

**GM-03-200 - DUAL TORCH CARRIAGE**



*Automate Fillet, Lap, and Butt Welds with Precision*

**VERSITILE TRACKLESS AUTOMATION CARRIAGE FOR A VARIETY OF APPLICATONS**



## TRACKLESS AUTOMATION WELDING CARRIAGE



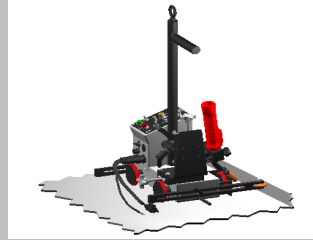
The MOGGY® is intended to automate and improve the quality of welding and cutting operations by carrying the welding gun(s) or cutting torch(es), at precisely controlled speeds, along the path of the joint. The MOGGY® carriage also provided interface between the welding and cutting motion and the arc start and stop signals. The automation carriage is normally guided by adjustable guide wheels which are set to always drive the carriage slightly into the vertical member (usually either the vertical member of a fillet joint or a template/fence placed parallel to the joint). Industry standard 6" v-groove track may also be used to guide the parth of the MOGGY®. The carriage is flexible enough to allow it to be easily configured for horizontal lap, butt and fillet weld joints as well as a variety of cutting processes.

Using the MOGGY® automation carriage system will add accuracy and uniformity to welding and cutting applications while increasing productivity. Typical applications include shipbuilding, offshore construction, steel fabrication, etc.

### Standard MODEL GM-03-100

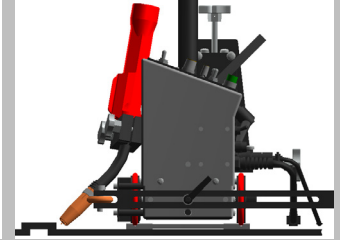
MOGGY® Carriage with control for continuous or stitch welding, and with a control that uses a Gullco microprocessor to provide accurate repeatability regardless of travel speeds for weld distance on and weld distance off. It has a forward/stop/reverse switch, wire feed start on/off switch, travel speed potentiometer, auto wire feed start with delay carriage start, wire feed connector with 15 ft. (4572mm) control cable. All functions displayed in an LED window.

### FILLET JOINT WELDING



The MOGGY® performing a fillet weld using a template, guide or fence positioned parallel to the workpiece. The actual workpiece is often used as the guide.

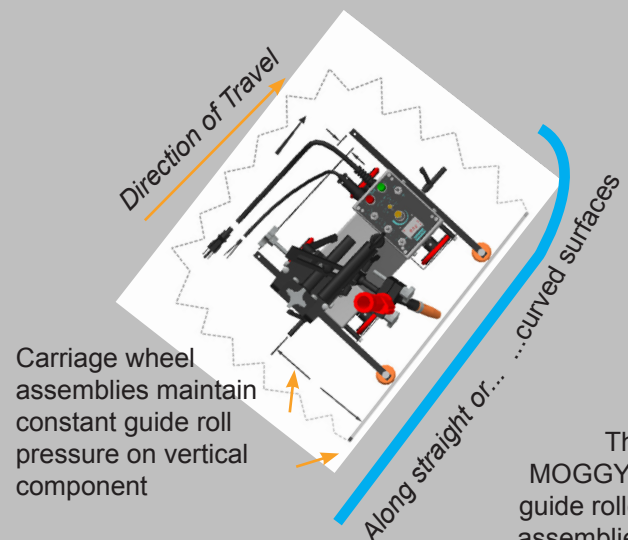
### LAP JOINT WELDING



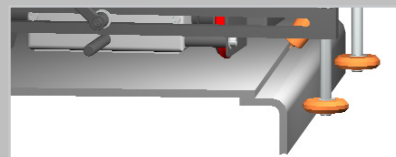
The MOGGY® is performing a lap joint weld. It is guided by Industry Standard 6" (152.4mm) v-groove track running parallel to the joint.

### Precise Torch Alignment To The Seam

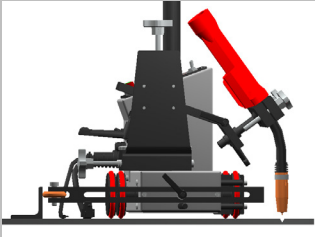
Adjustable guide rolls mounted on the front or back of the carriage monitor the slightest seam variations following straight or curved surfaces...maintaining optimum torch positioning as the carriage travels.



The MOGGY® guide roller assemblies can be configured in a variety of ways enabling extreme versatility.

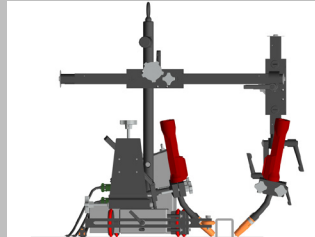


#### BUTT JOINT WELDING



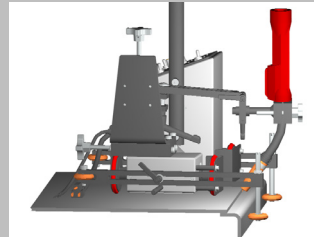
The MOGGY® is ideal for butt joint welding. Here the MOGGY® is using a fence to guide it accurately along the desired path. Standard v-groove track can also be used.

#### DUAL GUN WELDING



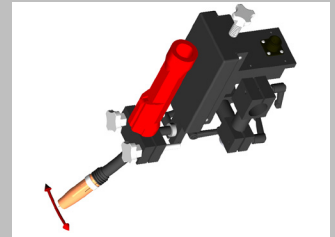
Dual gun holder assembly mounted on the MOGGY® enables positioning of two guns and simultaneous activation of two wire feed signals. MOGGY® is guided by the workpiece.

#### JOINT TRACKING



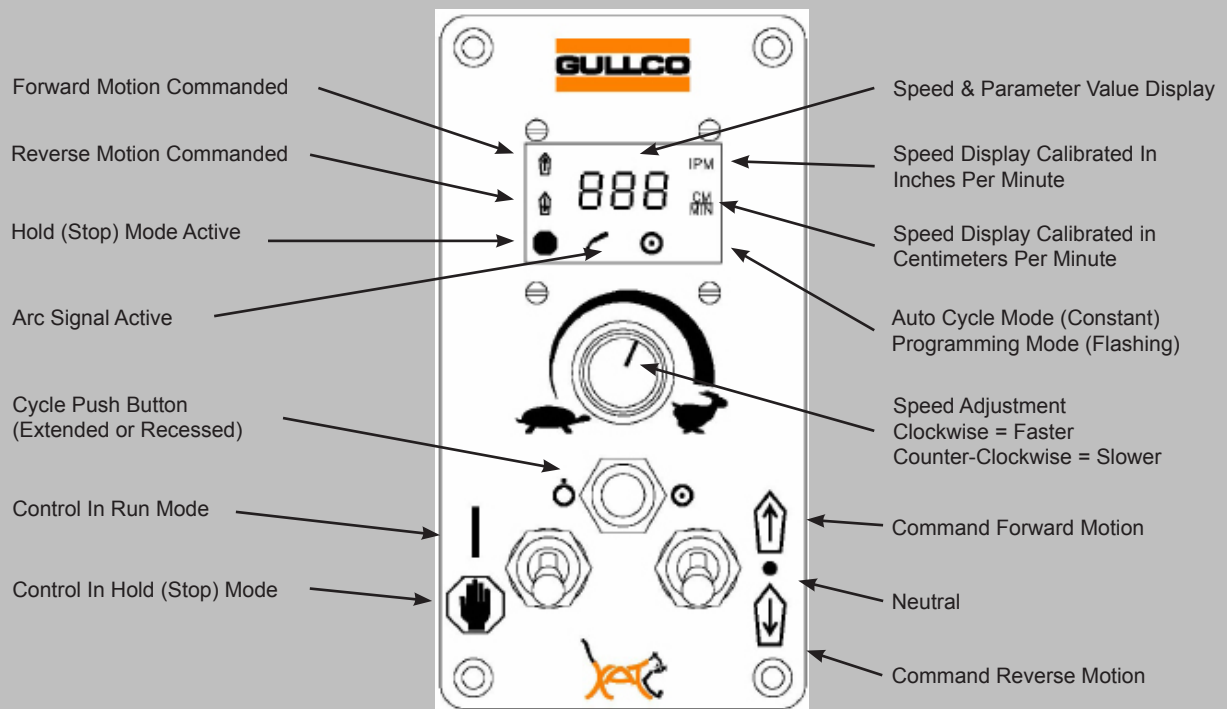
Adjustable height guide roller assemblies are available to track joints with a vertical member higher or lower than the set height of guide roller wheels.

#### RADIAL OSCILLATOR



Replaces the standard gun holder assembly in order to weave the gun across the joint while the MOGGY® provides the weld travel motion.

### CARRIAGE CONTROL LAYOUT



#### Accessories available:

**GK-194-O-330** - Radial Oscillator complete with bracketry for mounting on Gullco MOGGY® Carriage.

**GM-03-059** - Adjustable Guide Roller Assembly enables joint tracking where the vertical member is lower/higher than set height of guide roller wheels.

**GM-01-065** - Cutting Torch Holder Assembly enables automated torch cutting operations.

**GM-01-070** - Dual Gun Holder Assembly enables the use of two independently positioned welding guns with two wire feed signals simultaneously activated.

Also available as a SUBMERGED ARC MOGGY®

For more information on the submerged arc welding carriage and other products visit.

[www.gullco.com](http://www.gullco.com)





## SPECIFICATIONS

**Speed Range:** 3.25 – 100.50 in/min [8.26 – 255.27 cm/min]

**Maximum Incline:** 30°

**Gun Positioning Slides:** 1-3/4" (44.5 mm)  
Vertical and Horizontal Stroke

**Weight of MOGGY®:** 31 lbs. (14.1 kg)  
complete with all attachments (single gun model)

**Supply Voltage:** Either 42, 115, or 230 VAC,  
single phase, 50/60 Hz., 30 watts

**Drive Motor:**  
24 VDC permanent magnet gear motor

**Drive Wheel Temp Range:**  
-65°F to 450°F (-54°C to 232°C)

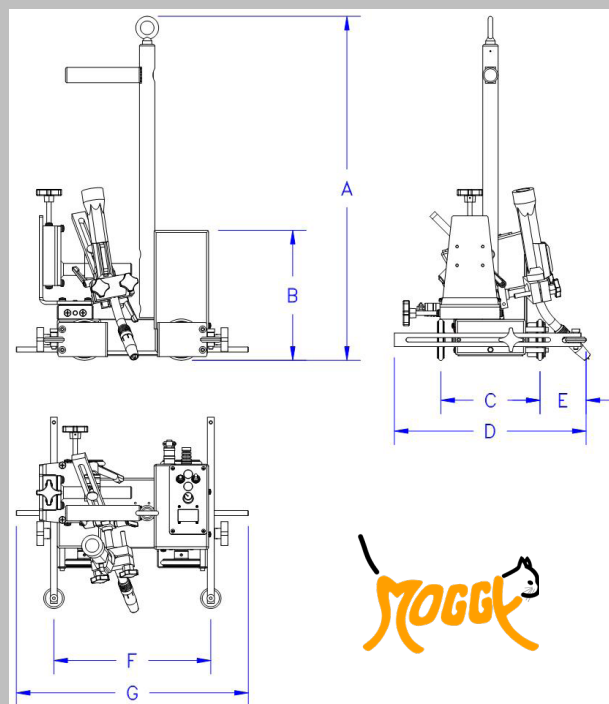
**Complies with:** C.S.A. & N.R.T.L.  
(file #LR35006-8) & C.E. Certification.



**GULLCO**

## CARRIAGE DIMENSIONS

	IMPERIAL	METRIC
<b>A</b>	25.00"	635.0 mm
<b>B</b>	9.57"	243.1 mm
<b>C</b>	7.25"	184.2 mm
<b>D</b>	14.01"	355.7 mm
<b>E</b>	Min 1.44" Max 7.06"	Min 3.6 mm Max 179.3 mm
<b>F</b>	11.50"	292.1 mm
<b>G</b>	17.00"	431.8 mm



KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL



## PORTA-WELDER SELF CONTAINED WELDING STATION



Designed to bring the weld to the joint, the Porta-Welder is a self contained welding station and a convenient option for pipe and small tank manufacturers looking to improve the efficiency of their welding operations. Ideally suited for small facilities or as a supporting option for larger dedicated welding systems.

The telescoping boom provides a small footprint when the machine is not in use. Wheels and forklift pockets allow for ease of movement. The Porta-Welder can be equipped with a variety of welding heads and outfitted with a number of different accessories and options.

- Boom Capacity: 150 lb.
- Boom Length: 87" (2209.8 mm)
- Boom Travel Length: 31" (787.4 mm)
- Mast Height: 62" (1574.8 mm)
- Mast Travel: 40" (1016 mm)
- 4 x 4 ft Base for Power Source Mounting
- ForkLift Pockets for Moving
- Operates on 115V

*Bring the Weld to the Joint With This Self Contained Welding Station*

PORTA-WELDER CAN BE EQUIPPED WITH A VARIETY OF WELDING HEADS AND ACCESSORIES



## OPTIONAL ACCESSORIES

### REMOTE CONTROL COMPACT OSCILLATORS

#### GK-201-100-RCC-R - Radial Oscillator

#### GK-201-100-RCC-L - Linear Oscillator

- Oscillation Width Adjustment
- Oscillation Center Line Adjustment
- 10 Program Memory
- Automatic Wire Feed Start
- Adjustable Carriage Delay Start (0-3 seconds)
- Dwell On/Off Switch
- Auto Start Switch
- Angular Oscillation to Step Square Oscillation Switch

LINEAR HEAD



RADIAL HEAD



### KAT® TRACKER HEAVY-DUTY SEAM TRACKER

#### WSG-1200

- Electronic Tack Override
- End of Plate Detection
- 55 lb. (25 kg) Vertical Load Capacity
- 4"x4" (101 x 101 mm) Slide Stroke



### KAT® TRACKER HEAVY-DUTY SEAM TRACKER

#### WSG-2200

- Electronic Tack Override
- End of Plate Detection
- 100 lb. (45 kg) Vertical Load Capacity
- 6"x6" (152 x 152 mm) Slide Stroke



### ELECTRONIC ARC HEIGHT SENSOR (E.A.H.S)

#### GK-203-400: 400 AMP

#### GK-203-800: 800 AMP

The E.A.H.S uses a current sensing control box to maintaining consistent torch height to work piece distance.

- 4" Linear Slide Assembly
- Constant Voltage Detection
- Precision Arc Height Control



### REMOTE CONTROL TORCH INDEXER

#### GK-202-100

Used for overlay cladding and provides precision indexing of the torch. Different indexing lengths are available.



### ARCAIR N7500 GOUGING SYSTEM

#### N7500

Covers a broad range of applications and can be used on almost all metals including stainless steel, carbon, manganese, and chrome-moly steels. Ideal for pressure vessels and other tanks.





## ALL POSITION CUTTING CARRIAGE - KAT®II



GK-189-045



The Gullco KAT® II variable speed travel carriage is the major component of an automated torch cutting system designed to improve cutting quality and to reduce the cost of cutting operations.

Safety is greatly enhanced by the use of Gullco's low voltage (24 VDC), highly advanced control/power supply system that is available in three line voltage inputs...42, 115, and 230 VAC, single phase, 50/60 Hz. The motor and control are protected by slow-blow fuses.

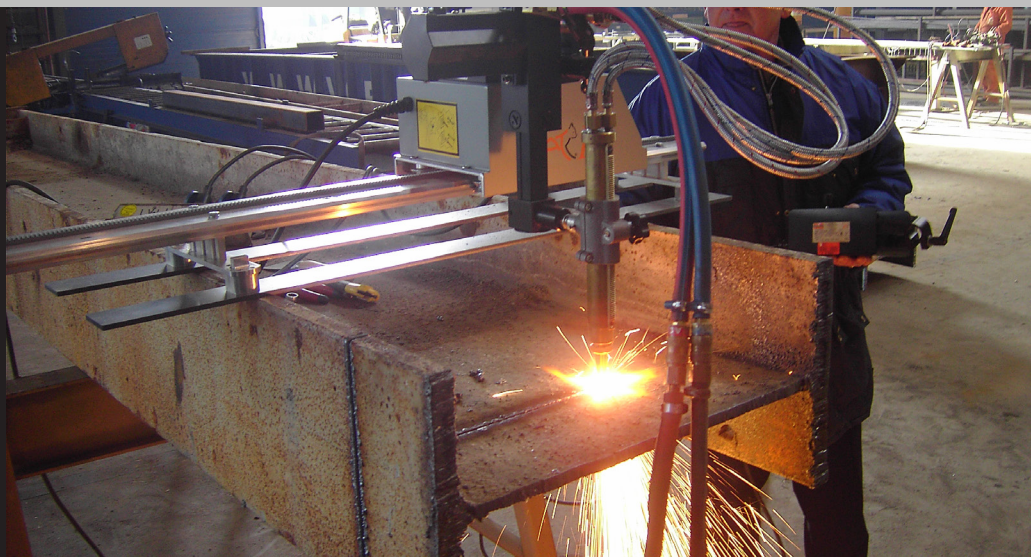
The carriage consists of a low voltage 24 VDC permanent magnet gear motor which engages the track through a set of spur gears. An easy to engage clutch lever with its "Push to Turn" which permits free-wheeling of the carriage for rapid positioning. The carriage is designed to run on rigid KAT® track to provide stable consistent cuts in a variety of applications.

**EASILY CONVERT YOUR KAT® II INTO AN EXCELLENT CIRCLE CUTTING MACHINE**

This Gullco accessory, comprised of an undercarriage, radius arm and centering pin, eliminates the need for track. The travel carriage is readily fitted on the top of the undercarriage. Its drive system engages the undercarriage gears moving the assembly in a forward or reverse direction at desired cutting speeds along a perfectly circular path. A slide lock on the radius arm allows fast, easy adjustment of the circular diameter.

*Increase Productivity and Precision of Cutting Applications*

ALL POSITION CUTTING CARRIAGE



## SPECIFICATIONS

Speed Range: 1 – 85.5 in/min [2.5 – 217.2 cm/min] No Load Horizontal  
2 - 72 in/min [5.1 – 182.9 cm/min] Full Load Vertical

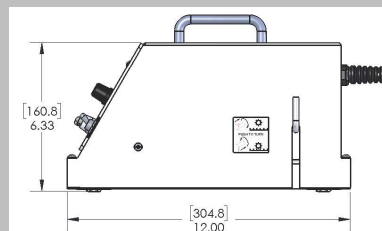
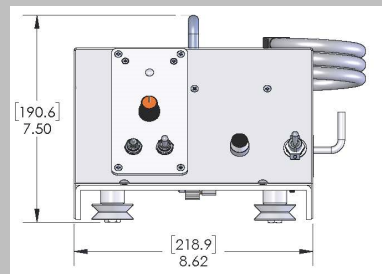
Weight of 'KAT II' Carriage: 13.2 lbs. [6 kg]

Vertical Load Capacity: 50 lbs. [23 kg]

Motor: 24 VDC permanent magnet gear motor

Supply Voltage: Either 42, 115 or 230 VAC, single phase, 50/60 Hz.

Complies with: CE Certification



## ACCESSORIES

### GK-165-068 - CUTTING TORCH HOLDER

Accepts standard 1 3/8" (35 mm) cutting torches with 32 pitch rack. Supplied with calibrated angle of tilt scale and 1 1/8" (29 mm) or 1 1/2" (38 mm) square clamp.

**GK-165-068** Accepts 1.280" (32.50mm) cutting torches. Supplied with calibrated angle of title scale as above.

**GK-171-047-2 - RACK ARM** - 18" (457.2 mm) long 1-1/8" (29 mm) Square Rack Arm with rack and one ends turned to 1-1/8" (29 mm) diameter.

**GK-171-650 - HEAVY DUTY RACK BOX** 10" (254 mm) long with adjustable nylastic bearing plugs for 1 1/8" (29 mm) square rack arm.

**GK-184-200 CIRCLE CUTTING ACCESSORY** Undercarriage: equipped with gear assembly that is engaged and driven by carriage gear system. This also includes a clutch that allows free-wheeling during set-up. Radius arm— 36" long with slide/lock for diameter size adjustment. Magnet/Holder for centering pin. (not shown in cover photo).



## ARCAIR-MATIC N7500 GOUGING SYSTEM



The Arcair-Matic® N7500 gouging system is highly productive for any metal fabrication operation where gouging and welding represents a large portion of the work schedule. This applies to almost all metals, including stainless steel, carbon, manganese, and chrome-moly steels.

All functions can be controlled, from determining gouge parameters, start/stop function, travel delay, and the capability to manually feed or retract the electrode in the Torch Head. The operator can view the amperage and voltage during gouging sequence easily while maintaining the electrode on the weld seam that's being back gouged.

A single electrode contact shoe assembly accepts a full range of jointed electrodes from 5/16" (7.9 mm) through 3/4" (19.1 mm).



*Five Times Faster, Ten Times Less Grinding*

INSURE QUALITY AND CONSISTENCY WITH PRE-SELECTED GROOVE DEPTH

*Arcair*®

**GULLCO**

WELDING AND CUTTING







## KAT® Carriage System

- ★ Designed to operate on rigid or flexible track
- ★ Provides precise control of the application parameters
- ★ L.E.D Display for easy visibility of the application parameters during operation
- ★ Can be adapted for both Welding and Cutting applications

## Digital LCD Remote Pendant



- ★ Ease of use – start/stop function, travel delay, electrode diameter
- ★ Rough machining feature to stall the feed of the electrode to compensate for pitted area or out-of-round steel rolls, thereby maintaining the concentricity of the shaft/roll
- ★ “Travel delay” function assures excellent groove geometry at the very beginning of the groove, thereby eliminating the need for a starting pad
- ★ Shock-absorbent bumper
- ★ Patent Pending

## Torch Head



- ★ Redesigned Torch Head with an extended front end – gives the operator better view of the weld seam that's being back-gouged
- ★ Can be oriented 360 degrees in any direction giving flexibility to fit the application

## Digital Circuitry Control Box



- ★ Redesigned digital circuitry control box
- ★ A synergic mode ensures conformity to pre-determined, pre-selected groove depth and width specifications

Arcair®, an industry leader in air carbon-arc products, introduces the Arcair-Matic® N7500, a new and improved automatic gouging system that provides versatility, flexibility and safety features built with an enhanced gouging function. Combined with the KAT® Automated Carriage further improvements to productivity, consistency and quality are achieved.

Covering a broad range of applications, this automated gouging system can be utilized on almost all metals, including stainless steel, carbon, manganese, and chrome-moly steels. It is perfect for work with pressure vessels, wind towers, shipbuilding, railroads, bridge and girder manufacturing, and with heavy equipment used in mining industries.

As a bonus feature, use the remote pendant to track actual arc time to help schedule routine maintenance; additionally, it enables you to monitor and manage cost of the gouging project / job.

The remote pendant is enclosed in a splash-proof panel design to operate in high humidity/outside conditions and withstand impact from a distance of three feet.

The Arcair-Matic N7500 can be used with CC/CV power supplies available in the industry. It utilizes the contactor in the welding power supply unit thereby eliminating the need for the external contactor used in prior models.

One unit can service both US (120VAC) and International (220VAC) markets.

As a safety feature, “NO CURRENT” detect and low voltage functions that shut down the system when these conditions are sensed. These functions ensure optimum groove quality and prevent damage to the equipment and work.

# ORDERING INFORMATION



## Complete N7500 Gouging System

Includes Remote Pendant, Control Box and Torch Head  
(Part No. 65-991-015)

### System Cable Assembly Options\*

#### 120V AC Power Supply Cable

Part No.	Description
96-130-304	10 ft (3 m)

#### 220V AC Power Supply Cable

Part No.	Description
96-130-305	10 ft (3 m)

#### Pendant Cable Assembly

Part No.	Description
96-170-069	14" (0.36 m)
96-170-070	15 ft (5 m)
96-170-071	25 ft (8 m)
96-170-072	50 ft (15 m)

#### Motor Cable Assembly

Part No.	Description
96-130-335	3 ft (0.9 m)
96-130-336	15 ft (5 m)
96-130-337	25 ft (8 m)
96-130-338	50 ft (15 m)

#### Power Supply Communication Cable Assembly

Part No.	Description
96-130-339	15 ft (5 m)
96-130-340	25 ft (8 m)
96-130-341	50 ft (15 m)

#### DC Power Cable

Part No.	Description
96-130-254	4 ft (1.2 m)
96-130-256	15 ft (5 m)
96-130-300	25 ft (8 m)

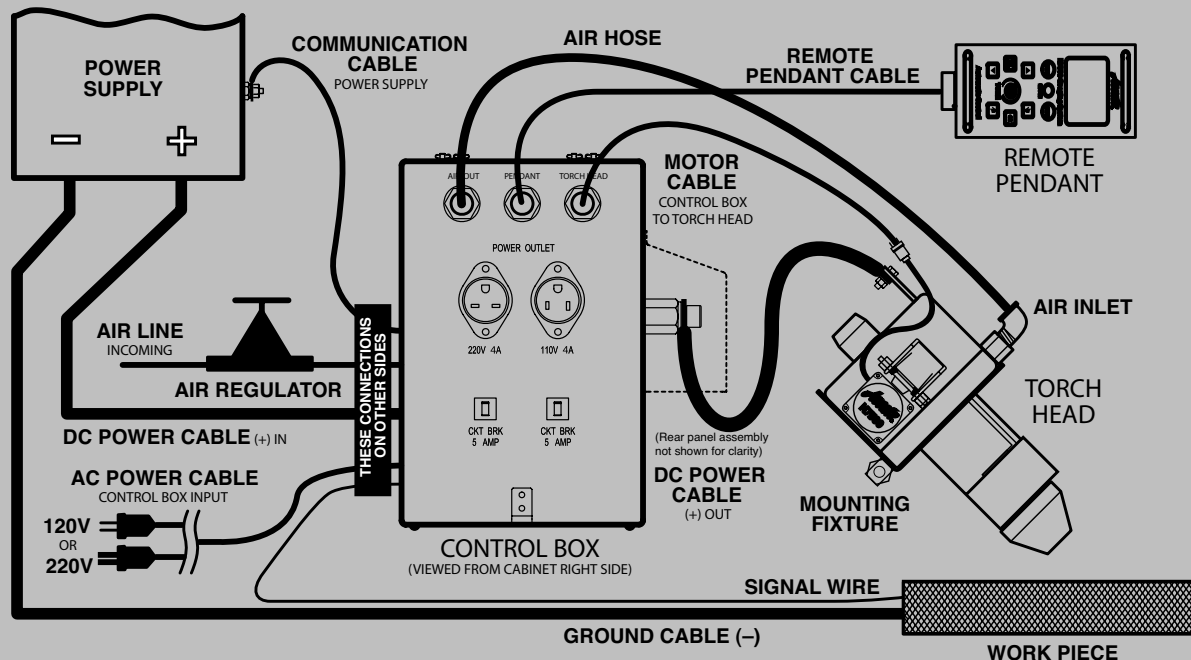
NOTE: Minimum 2 Power Cables Required

#### Air Hose Assembly

Part No.	Description
94-396-051	4 ft (1.2 m)
94-396-049	15 ft (5 m)
94-396-048	25 ft (8 m)

\*Must be ordered separately

## N7500 Assembly Set-Up



# Gouging System



## **KAT® Rigid Track Carriage - GK-200-RH-N**

### **KAT® Flexible Track Carriage - GK-200-FH-N**

Heavy-duty self-aligning wheel assemblies, closed loop tack feed-back for accurate speed control when running in any plane, regardless of load. (Maximum 100 lbs.) (45 kgs). The carriage is controlled by the Gullco low voltage 24 volt GSP microprocessor pulse width modulation motor control, interfacing with the forward/stop/reverse switch and infinitely variable 4-turn speed potentiometer. The LED display is in IPM or cm/min. The motor control can be upgraded to provide auto forward/reverse, limit switches and auto wire feed start.



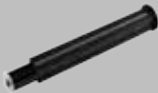
## **Heavy-Duty Rack Box - GK-171-650**

6" (152.4 mm) long with adjustable nylastic bearing plugs, for 1-1/8" (29 mm) square rack arm.



## **Rack Box Riser Bracket - GK-190-066**

Provides an adjustable mounting surface – 2" (50.8 mm), 4" (101.6 mm) or 6" (152.4 mm) above the normal KAT® Carriage Rack Box mounting surface. System complete with mounting screws and can accommodate both rack boxes. Models GK-171-650 heavy duty 1-1/8" (29 mm) and GK-190-650 extra heavy duty 1-1/2" (38 mm).



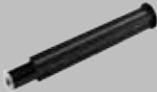
18" (457.2 mm) long heavy duty 1-1/8" (29 mm) Square Rack Arm - GK-171-047-2  
With rack and both ends turned to 1-1/8" (29 mm) diameter.



## **GK-200-023 Adaptor Stud Assembly - Consists of the below**

### **Heavy-Duty Rack Box - GK-171-686**

4" (101.6 mm) long with adjustable nylastic bearing plugs, for 1-1/8" (29 mm) square rack arm, with 3/8" threaded stud with 1-1/8" (29 mm) swivel clamp.



10-1/4" (260.3 mm) long 1-1/8" (29 mm) Square Rack Arm - GK-171-047-10.25  
With rack and one ends turned to 1-1/8" (29 mm) diameter.



### **Gouging Torch Adaptor Stud Attachment - GK-200-017**

The adaptor stud is used to facility the mounting of the gouging head to the rack arm.



### **Adaptor Block - GK-171-112**

The block holds the adaptor stud and attaches to the rack arm for adjustment of the gouging head

## Gouging System Optional Accessories



### **Rigid Track Idler Carriage - GK-200-022**

### **Flexible Track Idler Carriage - GK-200-F-022**

Complete with heavy duty self-aligning wheel assemblies providing 8-3/4" x 14-7/8" (222 mm x 378 mm) flat surface for mounting equipment and can be towed behind a KAT® Travel Carriage. (complete with a towing kit).





## AUTOMATED ROTARY WELD SYSTEM



Automate your circumferential welding operations, add efficiency and increased precision with the highly versatile Automatic Rotary Weld System

The rotary weld table with tack feedback interfaced with a PLC to provide precision stop/start, weld stop/start, adjustable rotation speed, weld overlap, multi-pass welding and tack welding

Accurately adjustable tailstock with 6" (152 mm) pneumatic clamping slide.

Motorized torch positioning slide to enable quick and easy loading/unloading of the work piece.

Maximum weight capacity 300 lbs (136 kg)

Table lengths up to 20 ft (6096 mm)



*Increase Weld Quality and Improve Production with Automation*

IDEAL FOR AUTOMATING PRODUCTION OF CYLINDRICAL PARTS INCLUDING: FLANGES AND END CAPS



SPECIFICATIONS

The Gullco Automatic Rotary Weld System is a low cost automated welding machine that produces consistent, precision welds on cylindrical work pieces. It is designed to provide repeatable quality welds, either in high or low production. It is easy to operate while providing sophisticated operational flexibility.

The Gullco Automatic Rotary Weld System comes complete with...

- Gullco programmable Motor Control interfaced with a PLC providing adjustable rotation speed, rotation stop/start, weld stop/start, wire feed stop/start and emergency stop controls, LED display for all functions
- Headstock...full 360° rotation with adjustable overlap, weld parameters controlled electronically
- Multi-pass Welding...available with automatic torch height adjustment
- Torch Support with rack arm and micro-slide rack box providing vertical torch adjustment, 4 axis torch holder assembly
- Tailstock...accurately adjustable with 6" (152 mm) pneumatic clamping slide
- The bed is heavy duty steel construction available in lengths up to 20 ft (6096 mm)



Load Capacity	300 lbs (136 kg)
Pneumatic Tailstock stroke	6" (152 mm)
Max. Part Length	to 20 ft (6096 mm)
Weld Diameters	to 18" (475 mm)
Adjustable Rotation Speed	0.25 - 15 rpm
Drive Motor	24 volt DC
Voltage	- for operation on either 115/230 volt, single phase, 50/60 Hz Ac power supply.

SPECIFY VOLTAGE WHEN PLACING ORDER

*The Gullco Automatic Rotary Weld System is also available as a multi-torch system*



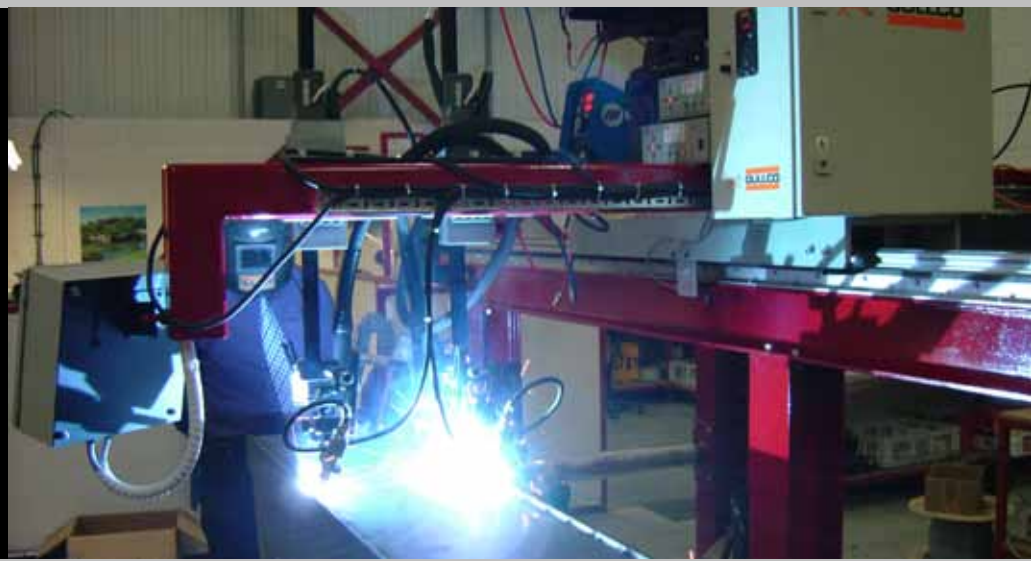
## CUSTOM GANTRY AND BRIDGE SYSTEMS



Gullco Gantry Units are custom designed assemblies that are used in a variety of applications such as automated seam welding, fabricated assemblies, stiffener seams and automated cutting operations such as stripping and edge preparation. **Gullco will custom design a gantry or bridge unit to meet your specific requirements.** A wide variety of custom design features and efficient, high end Gullco systems and components provide cost effective, reliable solutions for your welding and cutting automation needs.

*Generate Accurate and Repeatable High Quality Weld Results*

CUSTOM ENGINEERED TO AUTOMATE WELDING AND CUTTING OPERATIONS WITH PRECISION



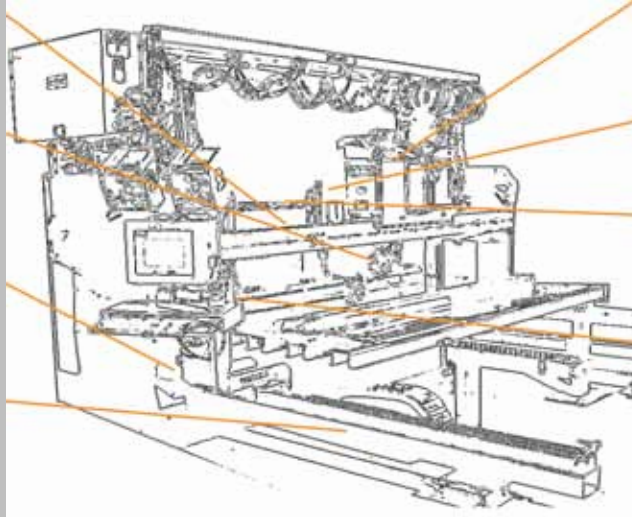


**GANTRY BEAM** - made from heavy duty track sections. spans range up to 18 ft.

**WELDING GUN/CUTTING TORCH OR TOOL MOUNTING SYSTEMS** - tailored to suit application requirements including mounting Seam Trackers, etc.

**GANTRY SUPPORT CARRIAGES**- Equipped with heavy duty cam type roller bearing assemblies.

**LONGITUDINAL TRACK SECTIONS**- interlocking design allows unlimited longitudinal travel.



**X-AXIS TRAVERSE CARRIAGE** powered by Gullco KAT® 24volt gear motors.

**Y-AXIS LONGITUDINAL DRIVE** powered by Gullco low voltage, heavy duty drive systems.

**CROSS DRIVE SHAFT**- direct gear drive to each longitudinal track ensures accurate tracking of gantry.

**CONTROL STATION**- incorporates a touch screen 9460 industrial flat panel PC utilizing Citect HMI software to control functions such as automatic forward/reverse travel, variable speeds, automatic seam location/tracking and automatic operation of weld guns.

## **GANTRY AND BRIDGE SYSTEM FEATURES**

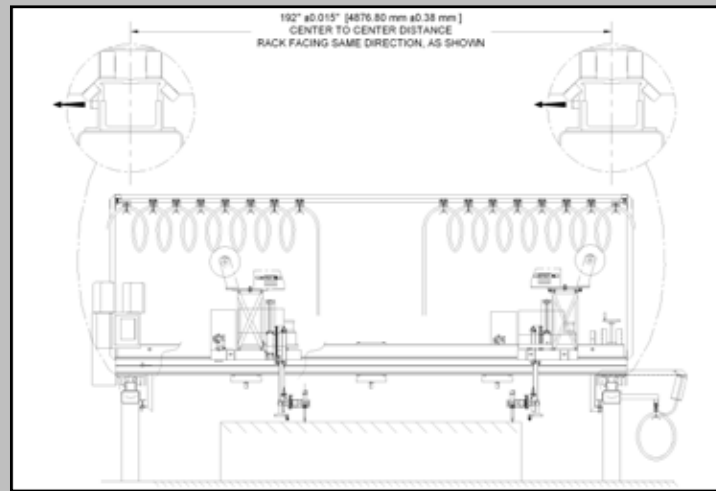


Touch screen industrial PC utilizing Citect HMI software.



Longitudinal track and cables are located underneath the table in protection.

## TYPICAL GANTRY AND BRIDGE SYSTEM DESIGN



### WELDING

This diagram shows a typical welding Gantry/Bridge unit design. The long tracks are located underneath the table providing protection. This also allows the work piece to be easily loaded at any point on the table as it is clear and easily accessible.

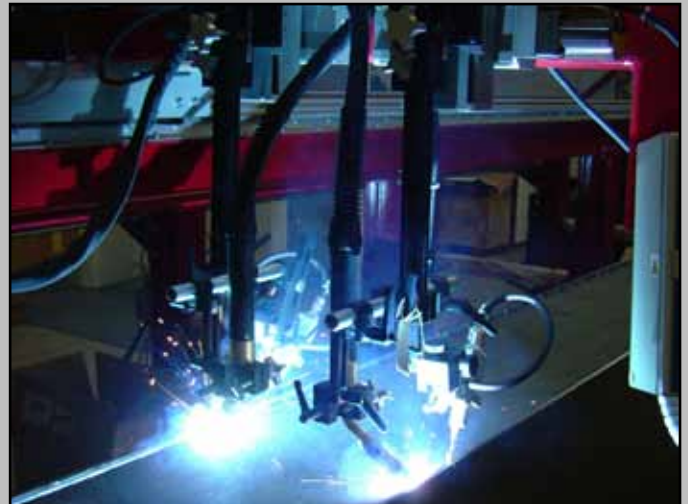
The bridge unit can be equipped to automatically position and clamp the parts to be welded. It can also be supplied with mechanical, electronic or laser seam tracking equipment. Gullco can custom design a Gantry/Bridge system to meet your specific requirements.

### LET GULLCO ENGINEER AND BUILD A GANTRY/BRIDGE SYSTEM FOR YOU

Seam Tracking is provided by Gullco designed vertical and horizontal tracking device.



Gullco Gantry system is equipped with dual torches enabling simultaneous welds on both sides of aluminium trailer sidewall stiffeners in one pass.



Seam tracking is provided by a Gullco designed vertical and horizontal tracking device.

# GULLCO

**WORLD LEADERS IN THE DESIGN,  
MANUFACTURE & DISTRIBUTION OF AUTOMATED  
WELDING SYSTEMS AND ACCESSORIES**

**CUT COSTS, IMPROVE QUALITY, AND INCREASE EFFICIENCY ...WITH THESE PROVEN  
GULLCO PRODUCTS**



KAT® SYSTEMS	MOGGY®	WELD PREP	OVENS	CERAMIC BACKINGS
<ul style="list-style-type: none"> <li>• Oscillators</li> <li>• Torch indexers</li> <li>• Flex &amp; Rigid KAT® Programmable Travel Carriages</li> <li>• Seam Trackers</li> <li>• Bridge Units</li> <li>• Circle Cutting System</li> </ul>	<ul style="list-style-type: none"> <li>• Trackless Fillet &amp; Butt Welding, Stitch</li> <li>• Welding control</li> <li>• Radial Oscillation Control</li> <li>• 6" V-groove Track Available</li> </ul>	<ul style="list-style-type: none"> <li>• Bevellers</li> <li>• Positioners</li> <li>• Grippers</li> <li>• Kamel Pipe</li> <li>• Turning Rolls</li> </ul>	<ul style="list-style-type: none"> <li>• Flux Rebake</li> <li>• Flux Holding</li> <li>• Flux Hoppers</li> <li>• Electrode Stabilizing</li> </ul>	<ul style="list-style-type: none"> <li>• KATBAK® Ceramic Weld Backing</li> <li>• Impart Uniform X-Ray Quality Back Beads</li> <li>• Eliminate Costly Grinding &amp; Re-welds</li> <li>• Knuckle Joints for Use On Flat or Curved Surfaces</li> </ul>

**CONTACT GULLCO OR YOUR GULLCO DISTRIBUTOR TODAY FOR INFORMATION ON ANY OF THESE PRODUCTS**

KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL



**ELECTRONIC ARC HEIGHT SENSOR - E.A.H.S**

Lightweight and durable components to reduce operator fatigue.

The 4" (10.16 cm) standard slide features engraved top, bottom and center marks for quick slide position reference to aid setup.

Standard 25 ft. (762 cm) of remote pendant control cable means the current sensor main control box can be kept away from the work area reducing trip hazards; an additional 25 ft. (762 cm) extension is available.

Easy setup and torch calibration.

Sensor control box design allows the operator to use their standard existing welding cables.

Extremely accurate arc detection  
Slide travel speed factory set at 10 IPM  
(25.4 cm/ min), programmable range of 3 IPM  
(7.6 cm/min) to 17 IPM (43.2 cm/min)

Easy to use remote pendant interface with coarse and fine slide adjustment.

*High Precision Torch Height Adjustment Through Current Detection*

ACCURATE ARC DETECTION AND PRECISION CONTROL OVER THE TORCH HEIGHT



E.A.H.S SYSTEM COMPONENTS

The Electronic Arc Height Sensor (E.A.H.S.) from Gullco is an automated welding system used throughout the world to automate and improve the quality and efficiency of the weld produced in automatic mechanized welding operation. This is achieved through minimizing weld defects such as poor penetration, incomplete fusion, overlap and undercut. Also, 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.

400 AMP GK-203-400-12



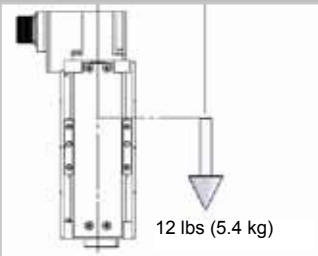
ITEM	PART NO.	DESCRIPTION	QTY.
1	GK-203-001	Slide Assembly	1
2	GK-203-002	E.A.H.S Remote Pendant	1
3	GK-203-003-A	Control Box Assembly 42V Input	1
	GK-203-003-B	Control Box Assembly 115V Input	1
	GK-203-003-C	Control Box Assembly 230V Input	1
4	GK-201-125	Head Cable Assembly	1
5	GC-058	Mounting Hardware	1
6	GK-201-112	Gun Holder Assembly	1

800 AMP GK-203-800-100

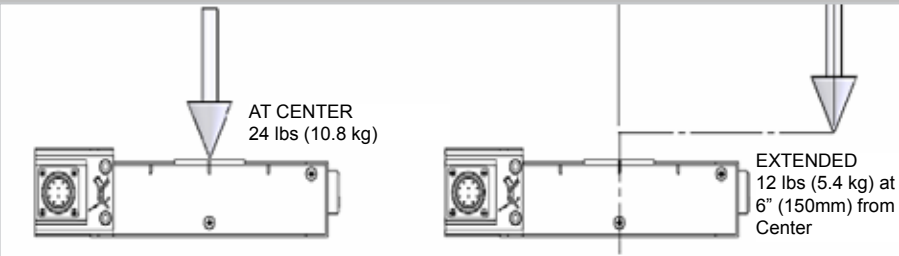


ITEM	PART NO.	DESCRIPTION	QTY.
1	GK-203-007	Heavy Slide Assembly	1
2	GK-203-002	E.A.H.S Remote Pendant	1
3	GK-203-014-A	800 AMP Control Box Assembly 42V Input	1
	GK-203-014-B	800 AMP Control Box Assembly 115V Input	1
	GK-203-014-C	800 AMP Control Box Assembly 230V Input	1
4	GK-201-125	Head Cable Assembly	1
5	GK-203-093	HD Slide Mounting Hardware	1

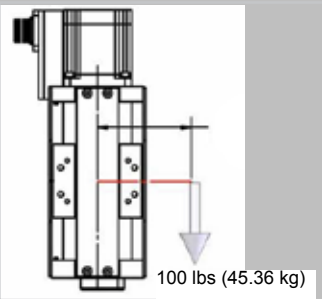
12LB VERTICAL SLIDE CAPACITY\*



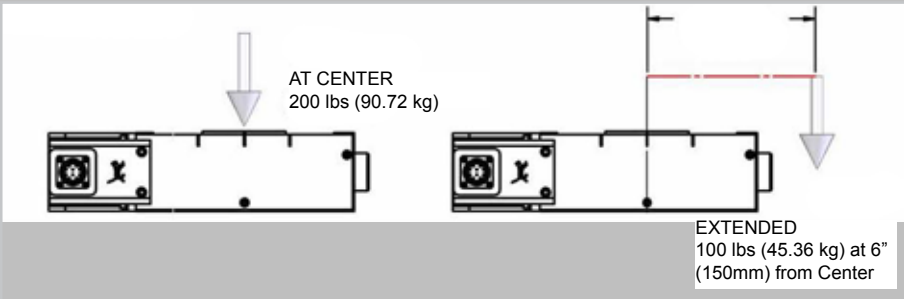
12LB HORIZONTAL SLIDE CAPACITY\*



100LB VERTICAL SLIDE CAPACITY\*



100LB HORIZONTAL SLIDE CAPACITY\*



\* For other configuration capacities, please consult your Gullco sales representative or request info at [www.gullco.com](http://www.gullco.com)

## E.A.H.S REMOTE PENDANT CONTROL

A highly sophisticated, yet easy to use, microprocessor based control drives a high torque, high resolution, low vibration stepper motor located in the linear slide, allowing the height of the welding gun to be precisely controlled. The control interfaces with the linear slide through a removable head cable assembly and with the main control box through a fixed pendant control cable. Controlling the height of the welding torch will allow the quality and appearance of the weld to be perfected.



Power L.E.D

Fine Adjustment Slide Knob

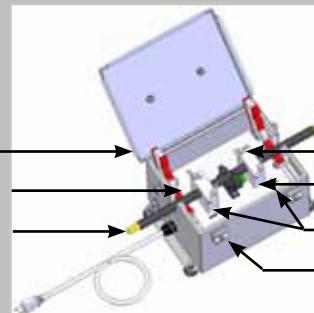
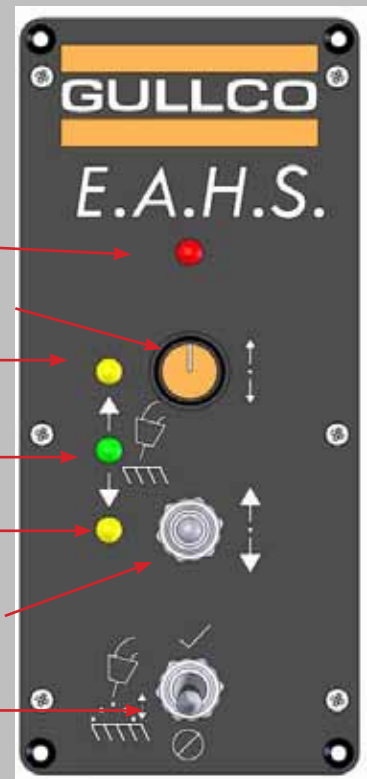
Up Slide Indicator

Control Status Indicator

Down Slide Indicator

Coarse Adjustment Slide Toggle Switch

Manual (Teach) / Auto (Tracking) Switch

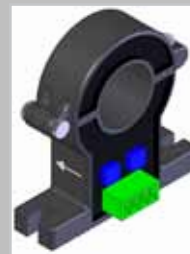


## E.A.H.S UNIT ACCESSORIES



**GK-201-112:  
WELDING TORCH  
HOLDER**

Adaptive welding torch holder for precision position of the arc.



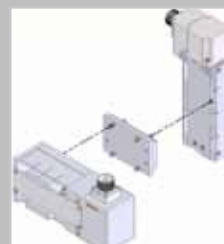
**GK-203-070: 500 AMP  
CURRENT SENSOR**

This sensor increases the current sensing range up to 97% of 500 AMPS (485 AMPS). It is a direct replacement for the existing 400 AMP sensor



**GK-203-092: REMOTE PENDANT  
EXTENSION 25 FT (762 cm)**

This 25 ft. (762 cm) extension will increase the total length of control cable between the control box and the remote pendant to 50 ft. (1.52 m)



**GK-203-086 : LINEAR  
OSCILLATOR TO E.A.H.S  
SLIDE ADAPTER**

This adapter kit allows the Gullco Linear Oscillator (GK-201-120) to be mounted to the E.A.H.S slide (GK-203-001). Slides not included.



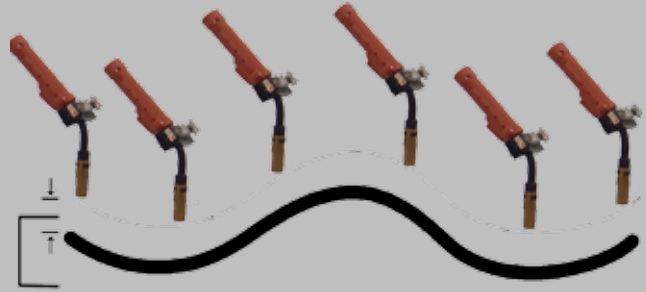
## SPECIFICATIONS

1. GK-203-003: Control Box with 25 ft. (9 m) control cable and 9 ft. (3 m) power cord
2. GK-203-001: Motorized Vertical Correction Slide
3. GK-203-002: Remote Control Pendant with 25 ft. (7.62 m) control cable
4. GK-203-003: Control Box Assembly (A- 42V, B-115V, C-230V)
5. GK-201-125: Motorized Vertical Correction Slide Control Cable - 6 ft. (1.8 m)
6. GC-058: Mounting Hardware
7. GK-201-112: Gun Holder Assembly



The E.A.H.S. works by measuring welding current, comparing it to a target value that has been taught by the operator and automatically adjusting the height of the welding gun to maintain the target welding current.

The Model GK-203-400 is a standalone unit meaning it does not interface with the wire feeder. The arc activation trigger signal of the welding equipment that is used to start/stop the welding process must come from a separate piece of equipment, i.e. customer supplied control or other Gullco equipment. This advanced Electric Arc Height Sensor package uses Gullco's sophisticated, yet easy to use, E.A.H.S. remote pendant control, in conjunction with a 4" linear slide assembly and current sensing control box, to provide precision arc height control during the welding process.



Welding guns are readily mounted on the linear slide. This equipment is intended to automatically control the torch height throughout the welding process. The longitudinal movement can be obtained from either the work piece traveling while the linear remains stationary, or, by a travel carriage such as the Gullco KAT® carriage carrying the E.A.H.S. equipment down the length of the work piece, which is the norm. Combining the welding gun height control with the precision controlled travel speed of the KAT® carriage will ensure high quality workmanship can be produced.



KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL

**AUTOMATED WELDING POSITIONER**

These welding positioners are positive drive rotary turn tables complete with mounting flange, drive and tilt mechanisms which incorporates a microprocessor based pulse width modulation motor control. Standard and Programmable models are available. The welding positioners are driven by a low voltage permanent magnet motor and gear head power unit assembly. The microprocessor motor control enables operator interface of start, stop, clockwise rotation and infinitely variable control of the speed, within the range of the model.

Rotation speed is electronically controlled using an optical tachometer located on the back of the gear-motor. Speeds within the range of the model are infinitely variable in both clockwise and counter-clockwise directions through a rotary speed adjustment potentiometer located on the remote control. Table tilt is manually set at any desired angle, from 0° through 90°, quickly and easily. Safety is greatly enhanced with Gullco low voltage (24 V) control and power supply system.



*Increase Productivity, Quality and Profitability with Automation*

AVAILABLE WITH A 2" THROUGH HOLE FOR LONGER WORK PIECES



## GP/GPP 200 SERIES POSITIONERS ARE AVAILABLE IN STANDARD OR PROGRAMMABLE MODELS WHICH ARE EQUIPPED WITH CORRESPONDING REMOTE CONTROLS

### STANDARD

*The Standard Remote Control provides*

- infinitely variable rotation speed within the model's speed range,
- forward/neutral/reverse switch,
- run/stop switch
- speed potentiometer



### PROGRAMMABLE

*The Programmable Remote Control with LED readout provides*

- infinitely variable rotation speed within the model's speed range,
- forward/neutral/reverse switch,
- run/stop switch
- programmable microprocessor providing adjustable positioning timing cycles, amount of weld rotation, weld on/weld off through 360° and a signal to activate a pneumatically operated weld gun holder and wire feed arc activation.

### FOOTSWITCHES (optional)

Three footswitch models are available;

**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.

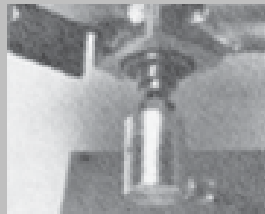
**GP-200-025** - Variable Speed footswitch assembly for manual operation. This kit provides a run/stop/variable speed footswitch; a footswitch guard cover; a connecting control cable; and strain relief glands. When activated, the footswitch will provide a run signal to the control and allow regulation 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 a directional footswitch; a footswitch guard cover; a connecting control cable; and strain relief glands. When activated, the footswitch will provide a run signal and rotary direction signal to the control.



### PURGE-EQUIPPED MODELS,

have a 1/4" (6.4 mm) hole through the centre of the table drive shaft and a gas rotary coupling mounted on the underside of the table ... the shaft having a 1/4" NTP tapped gas inlet hole.



### GULLCO SELF-CENTERING WELDING GRIPPER

(optional) The **WPG-250** Gripper is quickly and easily mounted on any make of positioner, turntable or tailstock. They are slim but durable, weighing only about half that of a standard chuck, minimizing reduction in positioner capacity. Single lever operation provides smooth, positive self-centering action.



### MOUNTING TABLE (optional) GP-200-016

12" (305mm) diameter mounting table. This round mounting table is used to facilitate direct mounting of components or fixtures and provides (6) radial mounting slots and various (3) hole pitch circle bolt patterns. The mounting table is quickly and easily mounted on the positioner spindle flange.



Gulco offers a wide range of accessories that provide low cost welding/cutting automation solutions including..



KR-1000 & 2000 WSB

**KR-1000 WSB** free standing support and welding gun holder assembly. 1- 1/8" (28.6mm) square rack arms and rack boxes provide 22" (558.8 mm) 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 18" (457.2 mm) of vertical and 6-1/2" (165.1 mm) of horizontal adjustment.

**KR-1000 CSB & KR-2000 CSB** are the same as above except they are supplied with swivel mounted, standard rack-type cutting torch holder instead of welding gun holder

### CUSTOMIZED AUTOMATION

The above cutting torch and welding gun support assemblies can be, and often are, equipped with one or two Gullco motorized rack arms controlled by a remote joystick pendant.



KR-1000 & 2000 CSB

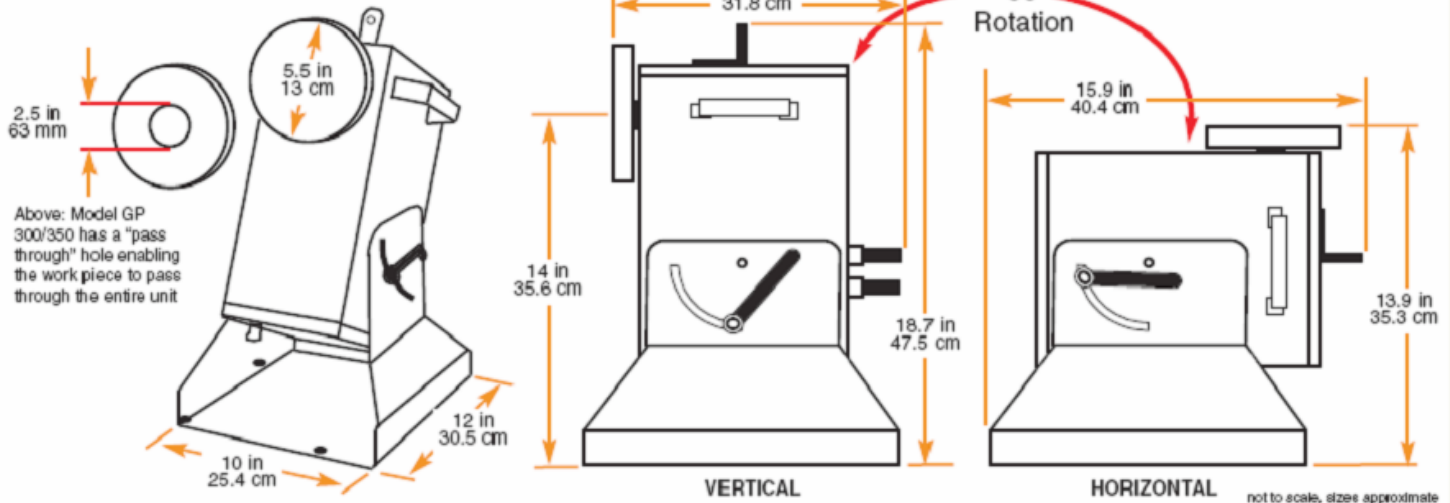


### Model GP-300/350

These “Through Hole” Positioners models are designed with a 2.5 inch (63 mm) “through hole” so the workpiece can be passed through the unit (max material of 2 3/8 OD) making production on long pieces easier and faster.



### SPECIFICATIONS



### LOAD CAPACITY/SPEEDS

Models:

#### GP/GPP-(200 & 250)-M and GP (300 & 350)-M

(Speeds 0.27 to 4.63 RPM) 150 lbs. (68 kg) at 3" (76 mm) center of gravity and 3" (76 mm) eccentricity with the table in the vertical position...300 lbs. (136 kg) with the table horizontal.

Models:

#### GP/GPP-(200 & 250)-H and GP (300 & 350)-H

(Speeds 0.75 to 12.5 RPM) 75 lbs. (34 kg) at 3" (76 mm) center of gravity and 2" (51 mm) eccentricity with the table in the vertical position...150 lbs. (68 kg) with the table horizontal.

### TABLE ROTATION

Electronically controlled, infinitely variable in either direction. Positive drive.

### TABLE TILT

0° through 90°

### ROTATIONAL TORQUE

**GP/GPP-(200 & 250)-M and GP (300 & 350)-M** 450 inch lbs. (518 kg.cm)

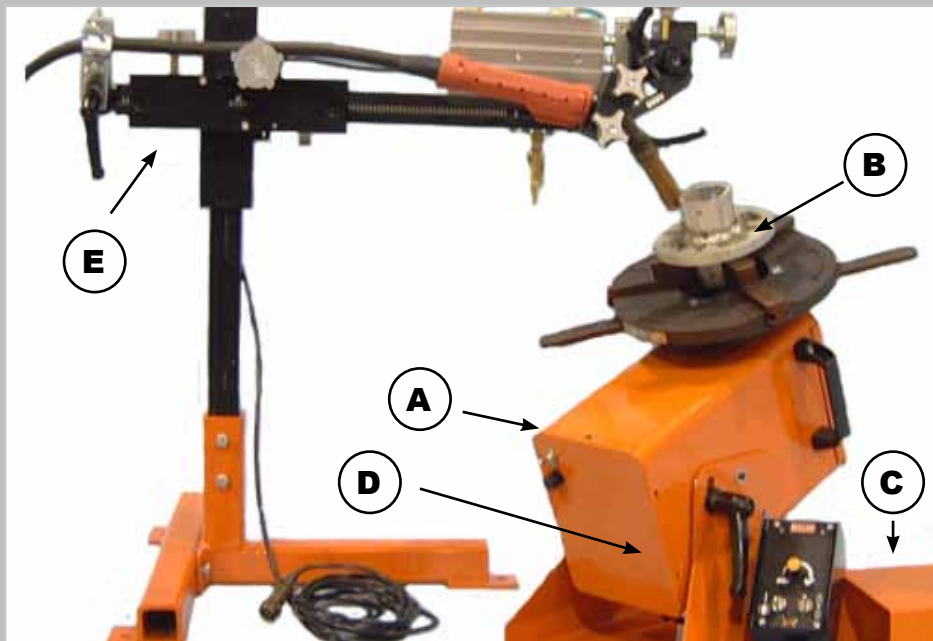
**GP/GPP-(200 & 250)-H and GP (300 & 350)-H** 150 inch lbs. (172 kg.cm) through the speed range. The maximum allowable eccentricity of “centre of gravity” on the work piece for a given load in inches is calculated as follows.

150 weight of work in lbs. The weight must not exceed the values for overhung load ratings shown below.

Model	Gas Purge	Programmable	Rotational Speed	Vertical Table Loading @ 3" C of G	Horizontal Table Loading
GP-200 & 300-M			0.27 - 4.63 RPM	150 LBS. (68 KG.)	300 LBS. (132 KG.)
GPP-200-M					
GP-250 & 350-M					
GPP-250-M					
GP-200 & 300-H			0.75 - 12.5 RPM	75 LBS. (35 KG.)	150 LBS. (68 KG.)
GPP-200-H					
GP-250 & 350-H					
GPP-250-H					

(D) Distance		(L) Load	
IN.	MM.	LBS.	KGS.
3	76	150	68
6	152	97	44
9	229	72	33
12	305	57	26





#### ITEM DESCRIPTION

- A- Welding Positioner
- B- 3 Jaw Gripper
- C- Footswitch Assembly for Manual Operation
- D- Wire-feed / Arc Start Signal Kit
- E- Pneumatic Gun Positioning Assembly

AN ACCURATE AND RELIABLE

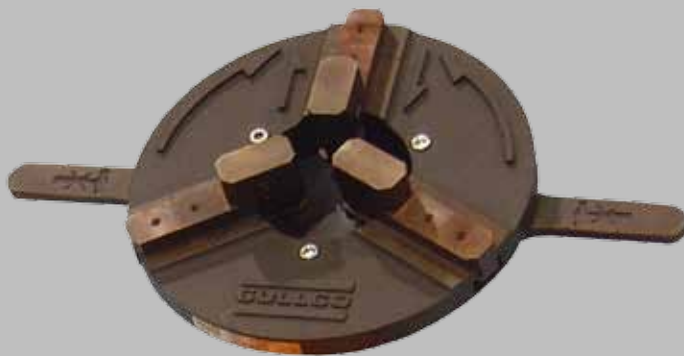
## AUTOMATIC ROTARY WELD PRODUCTION SYSTEM

FOR A FRACTION OF THE PRICE OF A P.L.C./SERVO SYSTEM.

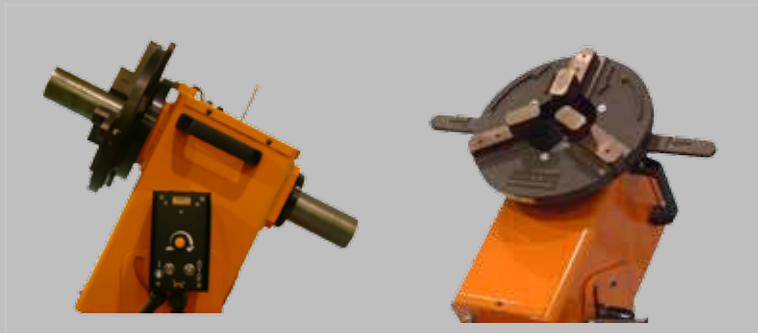
Gullco's microprocessor control not only provides improved speed regulation to Gullco's proven "GP" range of positioners. It also allows the positioner to be expanded into a fully automated welding cell. The control uses a tach feedback system to ensure smooth and accurate rotation of the workpiece regardless of piece weight and has the ability to activate a pneumatic welding gun holder and wire-feed/arc activation signal, based on an operator defined welding cycle. The programmable microprocessor also provides adjustable positioning timing cycles, amount of weld rotation and weld on/off through 360°.

KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco International Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

**SELF-CENTERING WELDING GRIPPER**

This 3 jaw self-centering gripper is designed for use with all welding positioners including Gullco's GP/GPP-200 Series of positioners. It provides high levels of efficiency and versatility in operations involving welding of fittings, flanges, and small diameter pipe. Specifications are provided on the reverse of this sheet. Contact Gullco or your Gullco distributor for more detailed information.



Quickly and easily mounted on any make of positioner, turntable or tailstock using three bolts provided with the gripper.

Self-Centering, fast, smooth close/open action lever to firmly lock or release workpiece.

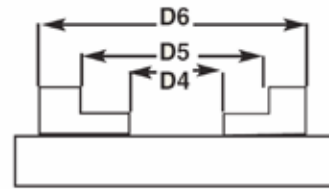
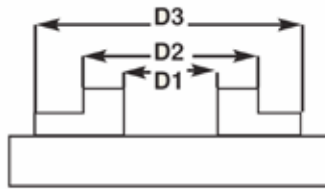
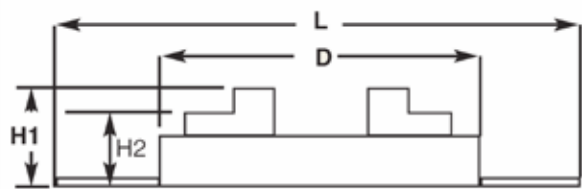
Durable construction with a slim design, weighing only about half as much as a standard chuck. This feature provides minimal reduction in positioner capacity.

*Ideal for the welding of fittings, flanges and small diameter pipe*

INCREASE WELD QUALITY AND PRECISION WITH THE SELF-CENTERING GRIPPER FOR WELD POSITIONERS







MODEL	DIMENSIONS - Inches - Per Diagram										
	GRIPPER (Inc. Handle)				GRIPPER BODY Clamping Range (min./max.)						WEIGHT
	D	L	H1	H2	D1	D2	D3	D4	D5	D6	LBS
WPG-250	10.0	17.5	2.75	1.88	0.38 - 6.25	4.25 - 10	9.15 - 15	.38 - 6.25	5.5 - 11.25	9.15 - 15	20
DIMENSIONS - mm											KG
WPG-250	254	444	70	48	10 - 159	108 - 254	23 - 381	10 - 159	140 - 286	232 - 381	9



**Also Available From Gullco**  
**GULLCO MODEL GP/GPP-200**  
**WELDING POSITIONERS**

Capacities up to 150 lbs. (68 kg.) in the vertical position, 300 lbs. (132 kg.)

Horizontal 0.27 to 4.63 rpm rotation  
 and 0.75 to 12.5 rpm in the "H" model  
 Table tilts any angle 0 - 90°



Table on the Gullco Model GP/GPP-200 Series of Welding Positioners (above left) is designed for mounting the WPG-250 Welding Gripper as indicated.



**TRACK AND MAGNETS FOR THE KAT® AUTOMATION CARRIAGE**

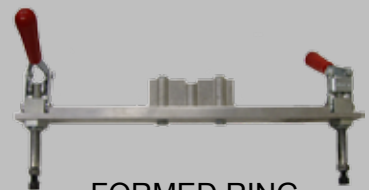
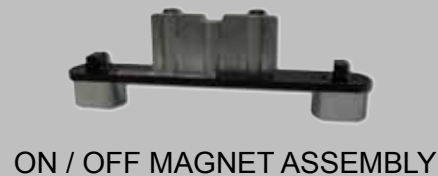
FLEXIBLE KAT®  
TRACK



RIGID KAT®  
TRACK



DEEP SECTION  
TRACK



*A track mounting device for any material*

DURABLE TRACK AND MOUNTING DEVICES FOR WELDING AND CUTTING AUTOMATION



# GULLCO RIGID KAT® TRACKS

KAT® Track is manufactured in "Standard" and "Deep" sections... each designed to suit a specific range of applications. Both are made to the highest quality levels and incorporate the following top performance features:

**PRECISION EXTRUDED ALUMINUM TRACK**—made from aluminum that is solution heat treated and artificially aged to produce an alloy having excellent mechanical and corrosion resistant properties. The track is light but strong and the standard section can be readily formed to suit the work contour.

**SUPPORTING STEEL RACK**—is securely fixed to the KAT® track to provide a smooth, positive drive. The long-life rack easily supports the Kat carriage under maximum load when used in a vertical position.

**END DESIGN**—enables any two lengths of track to mate accurately and, because of symmetry of design, track lengths can be turned end to end. It is even possible to mate standard and deep track sections.

**FAST, EASY JOINING**—a dovetail and taper screw that provides accurate location between mating track lengths. The track can be joined in the time it takes to tighten two knurled thumb screws.

**VERSATILE MOUNTING**—Both standard and deep section tracks have fixing holes on 6" (152.4 mm) pitch along their entire length to provide ample means for mounting or securing brackets.

## STANDARD SECTION TRACK

For use with the Gullco KAT® Travel Carriage Model GK-200 in most portable applications. Standard track sections are supplied in 48, 96 and 120 inch (1219, 2438 and 3048 mm) lengths complete with rack and interlocking ends. Standard track can be hard anodized and also formed to desired contours by Gullco or the customer. (see below)

MODEL	LENGTH	LENGTH
GK-165-052.....	48" (1219 mm)	GK-165-052-1.....96" (2438 mm)
GK-165-054.....	120" (3048 mm)	

also available up to 20 ft (6096 mm) long-special order

**DEEP SECTION TRACK** For use with the Gullco KAT® Travel Carriage in applications involving straight permanent runs where greater stiffness is required. Supplied in 60" and 120" (1524 and 3048 mm) lengths complete with interlocking ends. Deep Section Track can also be supplied internally stiffened and hard anodized.

MODEL	LENGTH	LENGTH
GK-166-258.....	60" (1524 mm)	GK-166-260.....120" (3048 mm)

also available up to 20 ft (6096 mm) long-special order

## FORMING STANDARD KAT® TRACK

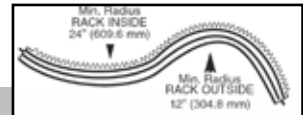
The following information is provided as a guide to customers ordering Standard Section track preformed to the desired contour by Gullco, or to be formed in their own shop.

1. "Track Datum" always refers to the track surface to which the rack is fixed.
2. When the rack is on the outside of the curve, the "Track Datum Radius" must be greater than 12" (304.8 mm).
3. When the rack is on the inside of the curve, the "Track Datum Radius" must be greater than 24" (610 mm).
4. Always specify whether rack is on the inside or outside of the curve.
5. Standard formed track lengths are 36" (914 mm) and 84" (2133 mm). This is because the first 6" (152 mm) at either end of a track cannot be formed and is therefore removed after bending.

6. When calculating the "Track Datum Radius", allowance must be made for the method of fixing the track to the work. The minimum allowable work to "Track Datum" distance (to permit free movement of the KAT® carriage) is 1-1/2" (38 mm) and when using the standard magnet assemblies this distance is 2-7/8" (73 mm).

KAT® formed track may be held in position by track mounting devices (i.e. magnets, steel brackets tack welded in position, or vacuum cups), or it may be permanently attached to framework alongside the work piece.

If your formed track is of a very permanent nature, it is often advisable to have a section formed and stiffened with welded aluminum side plates. This gives the stiffness of a deep section track in a formed shape. This method is often used in complete ring sections for cutting or welding large diameter pipes.



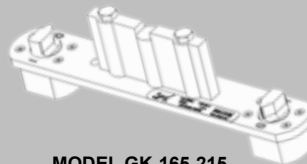
## Track Mounting Devices

Shown at right are the Round and Square Magnet devices and steel bracket assemblies used to mount either Gullco Rigid KAT® tracks or Flex-KAT® tracks on ferrous surfaces. Gullco's Vacuum Track Mounting system, described in a separate bulletin, holds KAT® Tracks in position on non-ferrous and ferrous materials.

**ON/OFF MAGNET ASSEMBLIES - GK-165-215** feature two powerful magnets each with 150 lbs (45 kg.) of holding power and on/off knob for easy installation.

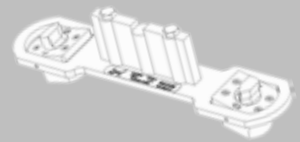
**SELF ALIGNING ON/OFF MAGNET ASSEMBLIES - GK-165-263** feature two powerful magnets each with 150 lbs (45 kg.) of holding power and positive on/off switch. The magnets are mounted in a special self aligning bracket to allow for use on curved surfaces.

**STEEL BRACKET ASSEMBLIES - GK-165-217** are used with magnet assemblies to provide track stability. They also must be used for added safety, tack welded to the work surface in vertical and overhead welding applications. The models can be used with each of the magnet assemblies. Standard brackets are mild steel but are available in stainless steel on request.



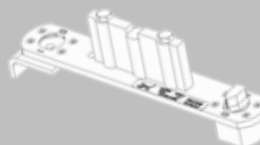
**MODEL GK-165-215**

Consists of two (2) GK-165-211 magnets with on/off switch. Track datum height 3-1/8" (79.4 mm)



**MODEL GK-165-263**

Consists of two (2) GK-165-211 magnets with on/off switch in a self aligning support bar assembly. Track datum height 3-1/8" (79.4 mm)



**MODEL GK-165-219**

Consists of one (1) GK-165-211 magnet with on/off switch, one (1) steel angle bracket. Track datum height 3-1/8" (79.4 mm)



**MODEL GK-165-217**

Consists of 2 steel angle brackets. Track datum height 3-1/8" (79.4 mm)



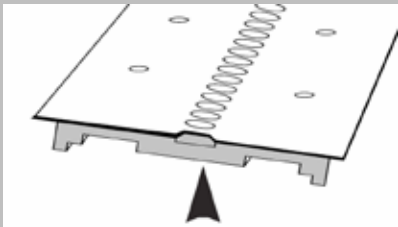
# GULLCO KAT® FLEXIBLE TRACK

## KAT® FLEXIBLE TRACK HEAVY DUTY FLEXIBLE TRACK

Model **GK-192-F-054-2**

Supplied in 8ft. (2438 mm) lengths. Also available in custom lengths up to 8 ft. (2438 mm) with interlocking ends to facilitate complete circles for diameter 60" (1524 mm), O.D. & I.D. and over.

Other lengths available on request.



### Flexible-Track **STIFFENER**

ADAPTS FLEX-TRACK SECTION FOR USE IN RIGID TRACK APPLICATIONS

Provides extra stiffness and reduces the number of magnet or vacuum track mounting devices required.

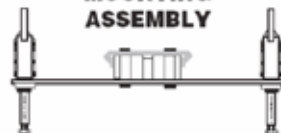
MODEL **GK-192-F-057**

Extruded aluminum stiffener for attachment to Gullco Flexible-Track sections supplied in 8 ft. (2438 mm) lengths.



Gullco Heavy Duty "Flexible Track" is specifically designed for use with the Gullco "Flexible KAT® All Position Travel Carriages as shown in application at left. Flexible Track is made from tempered spring steel and can be easily mounted to conform with curved surfaces. This Flexible Track can be used in applications involving curved surfaces 60" (1524 mm) diameter and greater.

### QUICK RELEASE FORMED RING MOUNTING ASSEMBLY



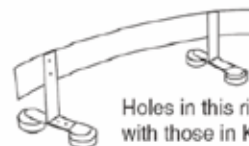
Holds formed "rings" of track in position for pipe welding on non-ferrous and ferrous materials. Heights can be adjusted from 2.8 in. (71.1mm) to 4.95" (125.7mm). Different heights can be achieved using different length 5/16"-18UNC bolts.

### KAT VACUUM TRACK MOUNTING SYSTEMS



Holds track in position on non-ferrous and ferrous materials.

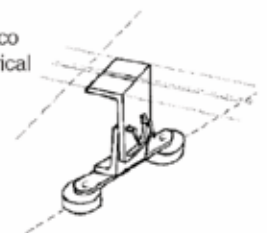
### PERPENDICULAR TRACK MOUNTING BRACKET Model GK-190-046

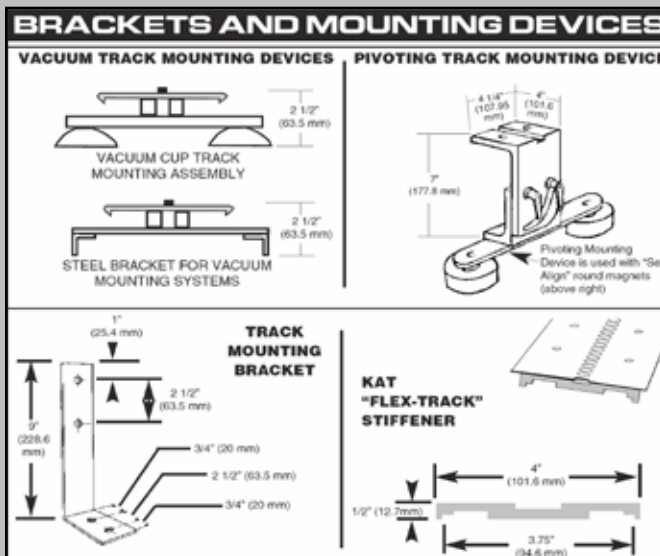
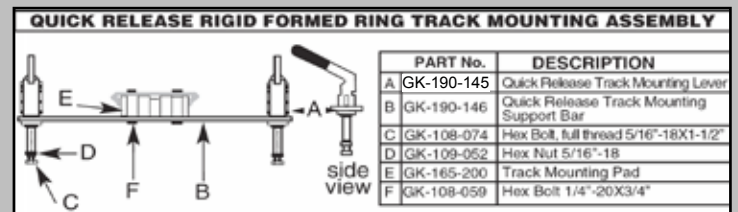
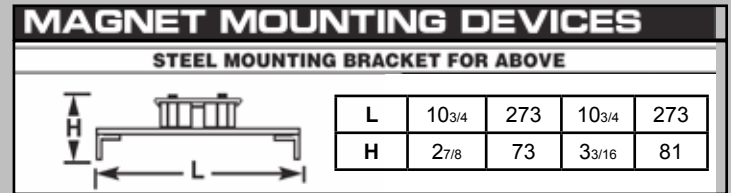
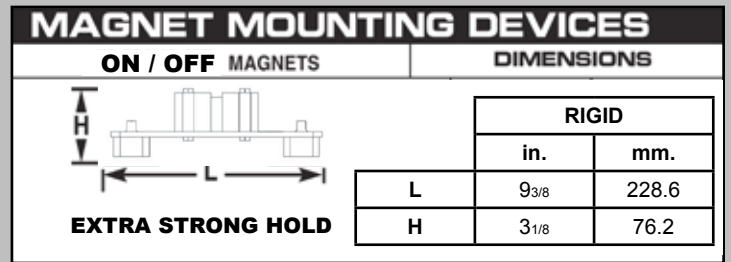
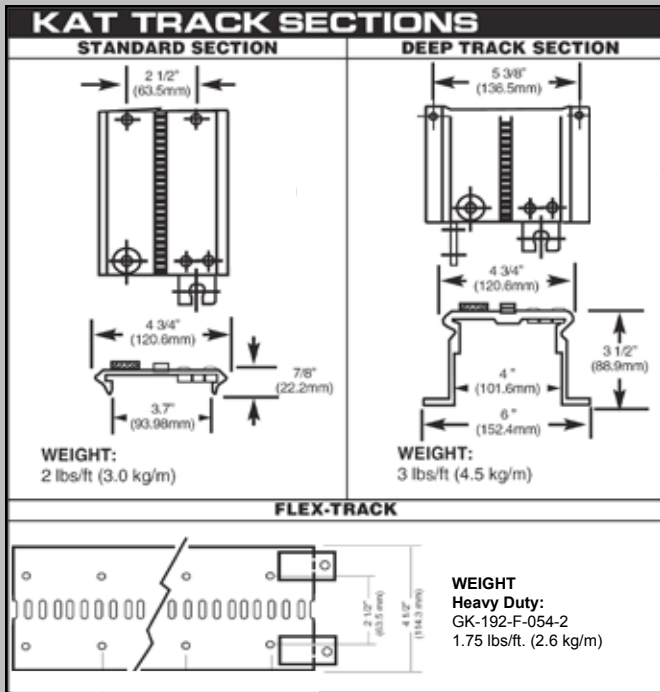


Holes in this rigid steel bracket align with those in Kat Track and support bars on all Gullco track mounting devices...for firm perpendicular mounting of straight or curved rigid Kat Track or Flex-Track sections

### PIVOTING TRACK MOUNTING DEVICE Model GK-190-110

Used to mount Gullco Flex-Track in Spherical Tank welding applications to maintain proper welding angle.





KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gulco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL





WORLD LEADERS IN THE DESIGN,  
MANUFACTURE & DISTRIBUTION OF AUTOMATED  
WELDING SYSTEMS AND ACCESSORIES  
CUT COSTS, IMPROVE QUALITY, AND INCREASE EFFICIENCY WITH THESE PROVEN  
GULLCO PRODUCTS



KAT® SYSTEMS	MOGGY®	WELD PREP	OVENS	CERAMIC BACKING
<ul style="list-style-type: none"><li>• Oscillators</li><li>• Torch indexers</li><li>• Flex &amp; Rigid KAT® Programmable Travel Carriages</li><li>• Seam Trackers</li><li>• Bridge Units</li><li>• Circle Cutting System</li></ul>	<ul style="list-style-type: none"><li>• Trackless Fillet &amp; Butt Welding, Stitch Welding control</li><li>• Radial Oscillation Control</li><li>• 6" V-groove Track Available</li></ul>	<ul style="list-style-type: none"><li>• Bevellers</li><li>• Positioners</li><li>• Grippers</li><li>• Kamel Pipe</li><li>• Turning Rolls</li></ul>	<ul style="list-style-type: none"><li>• Flux Rebake</li><li>• Flux Holding</li><li>• Flux Hoppers</li><li>• Electrode Stabilizing</li></ul>	<ul style="list-style-type: none"><li>• KATBAK® Ceramic Weld Backing</li><li>• Impart Uniform X-Ray Quality Back Beads</li><li>• Eliminate Costly Grinding &amp; Re-welds</li><li>• Knuckle Joints for Use On Flat or Curved Surfaces</li></ul>

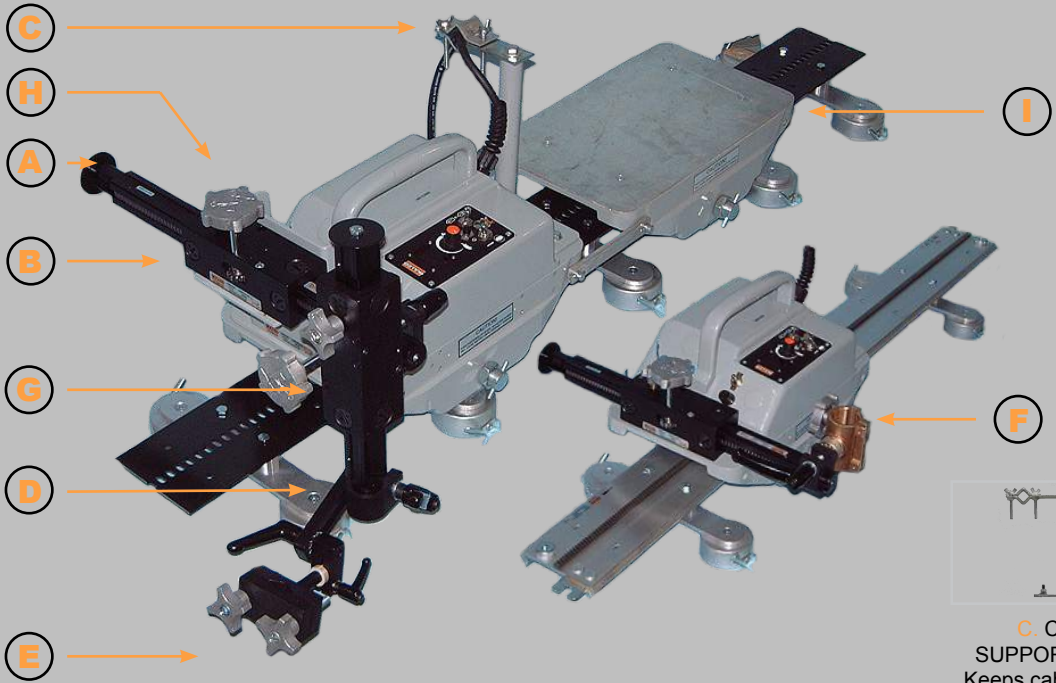
CONTACT GULLCO OR YOUR GULLCO DISTRIBUTOR TODAY FOR INFORMATION ON ANY OF THESE PRODUCTS

KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited      SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE, . ALL DIMENSIONS ARE NOMINAL

WELDING AND CUTTING AUTOMATION



WELDING AND CUTTING CARRIAGE ACCESSORIES - KAT®



A. RACK ARM  
Square with one end turned. Heavy duty & Extra heavy duty



B. RACK BOX  
Available with standard or micro adjustment. Cross head & Arm Mount rack boxes also available



C. CABLE SUPPORT CLAMP  
Keeps cables clear of work area



D. CLAMPS  
Available as swivel or square.



E. SEMI-AUTOMATIC GUN HOLDERS  
Suitable for most semi-automatic welding guns



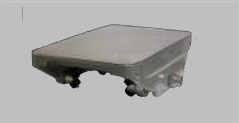
F. BRONZE CUTTING TORCH HOLDERS  
Accepts standard 1 3/8" (35 mm) cutting torch



G. 4 MOTION SEMI-AUTO GUN HOLDER  
Mounts on the KAT® horizontal rack arm to provide 5" (127 mm) of vertical adjustment 360° torch rotation & two directional angle tilt



H. RISER BRACKET  
To mount rack box higher than carriage when required

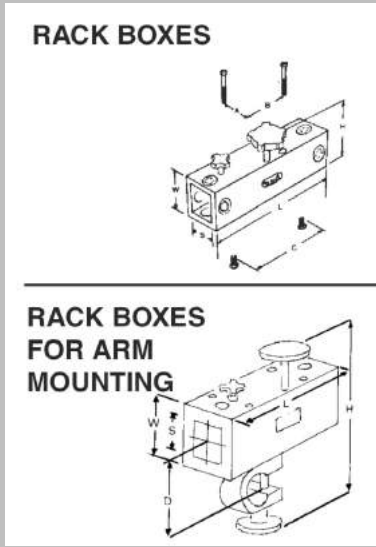


I. IDLER CARRIAGE  
For conveying auxilliary welding and cutting equipment



WELDING AND CUTTING





		H	W	L	S	A	B	C
HEAVY DUTY GK-171-650 GK-171-655*	In.	4.25	2.0625	6	1.125	1.625	2.625	-
	mm.	10.8	52.39	152.4	28.57	41.27	66.67	-
EXTRA HEAVY DUTY GK-190-650 GK-190-655*	In.	4.5	2.5	10	1.5	2	3.3	6
	mm.	114.3	63.5	254	38.1	50.8	83.82	152.4

**\*WITH MICRO FINE ADJUSTMENT GEAR BOX**

		H	W	L	S	D
HEAVY DUTY GK-171-685 GK-171-690*	In.	7	2.0625	6	1.125	1.75
	mm.	177.8	52.39	152.4	28.57	44.45
EXTRA HEAVY DUTY GK-190-685 GK-190-690*	In.	7.5	2.5	10	1.5	2.25
	mm.	190.5	63.5	254	38.1	57.15

**\*WITH MICRO FINE ADJUSTMENT GEAR BOX**



#### RACK ARMS

#### HEAVY DUTY RACK ARMS

1 1/8" (29mm) square rack arm and rack with one end turned to 1 1/8" (29mm) diameter

**GK-171-047-1** 12" (305mm) long

**GK-171-047-2** 18" (457mm) long

**GK-171-047-3** 24" (610mm) long

**GK-171-047-4** 36" (914mm) long

other lengths available on request

#### EXTRA HEAVY DUTY RACK ARMS

1 1/2" (38mm) square rack arm and rack with one end turned to 1 1/8" (29mm) diameter

**GK-190-047-2** 18" (457mm) long

**GK-190-047-3** 24" (610mm) long

**GK-190-047-4** 36" (914mm) long

other lengths available on request

#### CLAMPS

##### Swivel Clamps

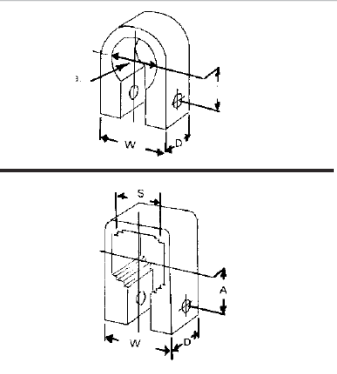
for mounting torch holders, rack boxes and other KAT® accessories

		Dia.	W	D	A
HEAVY DUTY GK-166-183	In.	1.125	1.625	1.25	.775
	mm.	28.57	41.27	31.75	19.68

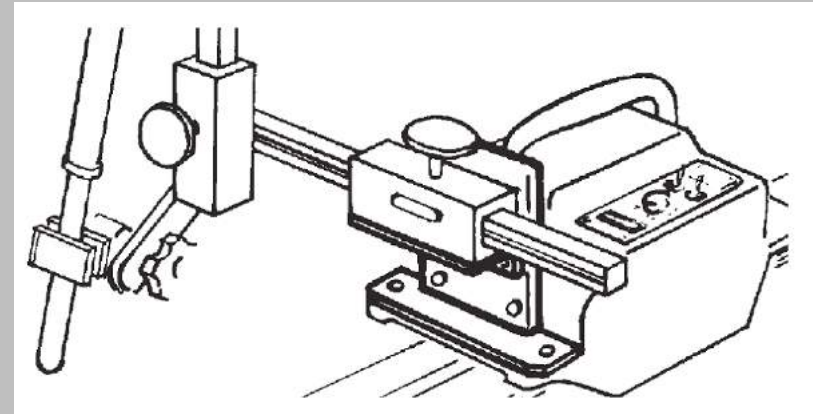
##### Square Clamps

for mounting welding guns, cutting torches and other KAT® accessories

		Dia.	W	D	A
HEAVY DUTY GK-166-236	In.	1.125	1.625	1.125	1.0625
	mm.	28.57	41.27	28.57	27
EXTRA HEAVY DUTY GK-190-236	In.	1.5	2.125	1.25	1.437
	mm.	38	54	31.75	36.5



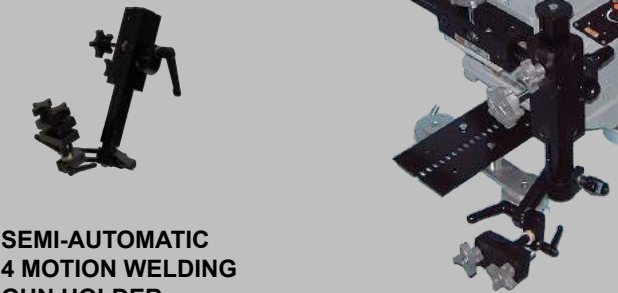
#### RACK BOX RISER BRACKET



#### MODEL GK-190-066

For applications that require a mounting surface higher than the level provided with the rack box mounted directly on the front of the KAT® Carriage. Height can be increased by 2, 4 or 6" (51, 102 or 152 mm).

#### TORCH HOLDERS AND ASSEMBLIES



#### SEMI-AUTOMATIC 4 MOTION WELDING GUN HOLDER

##### MODEL GK-165-074-2

(complete unit)... For mounting on the KAT® horizontal rack arm to provide 5" (127 mm) of vertical adjustment, 360° torch rotation and two directional tilt. Supplied complete with standard 1 1/8" (29 mm) I.D. swivel clamp\* and insulated linkage for the gun holder which is suitable for most semi-automatic welding guns. Gun holder jaws are adjustable from 5/8" (16 mm) to 1 1/2" (38 mm) \*Note: can be supplied with 1 1/8" (29 mm) or 1 1/2" (38 mm) square clamp.

#### SEMI-AUTOMATIC GUN HOLDER



MODEL GK-165-145 (complete unit)... Complete with standard 1 1/8" (29 mm) I.D. swivel clamp\* and insulated linkage for the gun holder which is suitable for most semi-automatic welding guns. Gun holder jaws are adjustable from 5/8" (16 mm) to 1 1/2" (38 mm) \*Note: can be supplied with 1 1/8" (29 mm) or 1 1/2" (38 mm) square clamp

#### IDLER CARRIAGES

##### GK-171-154

Provides an 8 3/4" x 14 7/8" platform on which a variety of welding/ cutting equipment can be mounted and towed individually or in tandem along straight or formed sections of KAT® Track by the Gullco KAT® Travel Carriage. Self aligning retractable wheels enable easy mounting at any point along the track. Load capacity is 100lbs.



#### REMOTE CONTROL PENDANT

Supplied with 8 ft. (244 cm) cable providing control of numerous KAT® functions.



#### STANDARD CUTTING TORCH HOLDERS

##### GK-165-068

Accepts standard 1 3/8" (35 mm) cutting torches with 32 pitch rack. Supplied with calibrated angle of tilt scale and 1 1/8" (29 mm) or 1 1/2" (38 mm) square clamp.

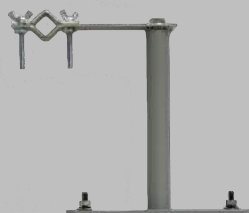
**GK-165-068-M** Accepts 1.280" (32.50mm) cutting torches. Supplied with calibrated angle of title scale as above.



#### CABLE SUPPORT CLAMP

##### GK-181-027

Swivel clamp assembly is readily mounted on the front or back of the KAT® Travel Carriage to keep cables clear of the work area. Clamp can be adusted to provide approximately 1 3/4" diameter holding opening



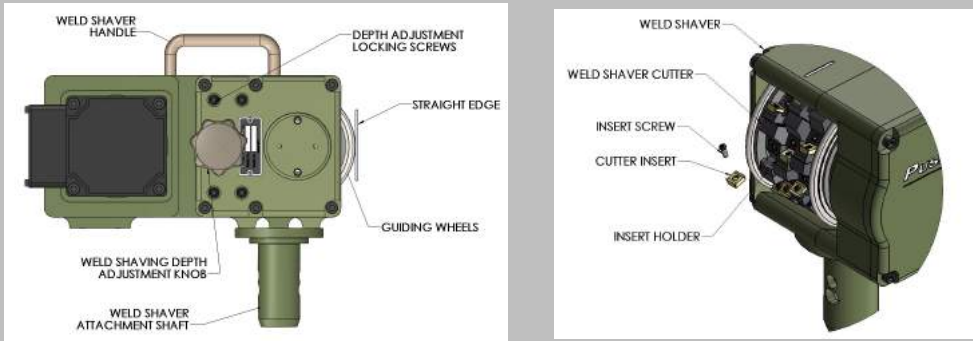
#### SEAM TRACKER SYSTEM



...high precision tracking system that maintain the torch in optimum operating position regardless of variations in the weld seam...providing improved quality and efficiency in a wide variety of welding operations.



SHAVER HEAD



Utilizing a high torque servo motor coupled to a series of slotting cutters through a belt reduction, the Weld Shaver machines the weld seam off. The 5 in. (125 mm) diameter slotting cutters utilize standard carbide inserts which have two cutting edges. The insert can be rotated after the first edge becomes dull. These inserts are easily removed and installed in preset holders using a Torx driver. The servo motor allows the cutting speed to be accurately set and the cutting effort monitored during the process. The Weld Shaver can be configured to cut weld seams up to 2.25 in. (57 mm) in width.

SWS 100-3.7 SERIES WELD SHAVER HEAD

- SWS100-3.7 20 mm
- Power: 4.8 Hp [3.61 kW]
  - Maximum SFM: 3000 SFM
  - Cutting Width: .78 in. [20 mm]

- SWS100-3.7 39 mm
- Power: 4.8 Hp [3.61 kW]
  - Maximum SFM: 3000 SFM
  - Cutting Width: 1.53 in. [39 mm]

- SWS100-3.7 59 mm
- Power: 4.8 Hp [3.61 kW]
  - Maximum SFM: 3000 SFM
  - Cutting Width: 2.32 in. [59 mm]

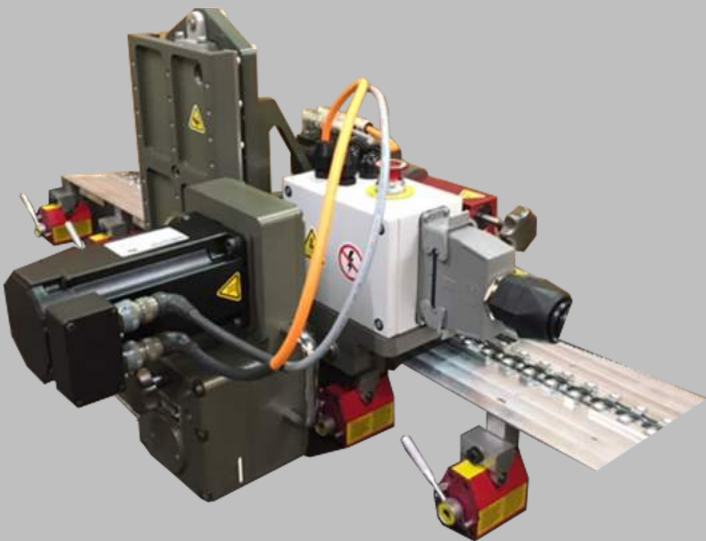
SWS 100-7.2 SERIES WELD SHAVER HEAD

- SWS100-7.2 20 mm
- Power: 8.4 Hp [6.24 kW]
  - Maximum SFM: 3900 SFM
  - Cutting Width: .78 in. [20 mm]

- SWS100-7.2 39 mm
- Power: 8.4 Hp [6.24 kW]
  - Maximum SFM: 3900 SFM
  - Cutting Width: 1.53 in. [39 mm]

- SWS100-7.2 59 mm
- Power: 8.4 Hp [6.24 kW]
  - Maximum SFM: 3900 SFM
  - Cutting Width: 2.32 in. [59 mm]

WELD SHAVER CARRIAGE



The weld shaver carriage uses force compliance to allow the weld shaver head to maintain contact over contoured surfaces and ensures a consistent and precision weld removal.

Force compliance technology combined with DC Servo Spindles increases:

- Quality
- Consistency
- Media Life
- Operator Safety

The weld shaver removes up to 90% of the weld height at a rate of up to 3 ft/min (61 cm/min) and can remove welds of 0.375 - 3 Inches (0.9525 - 7.62 cm) wide in all positions.



SHIP BUILDING



TANK BUILDING



WIND TOWERS



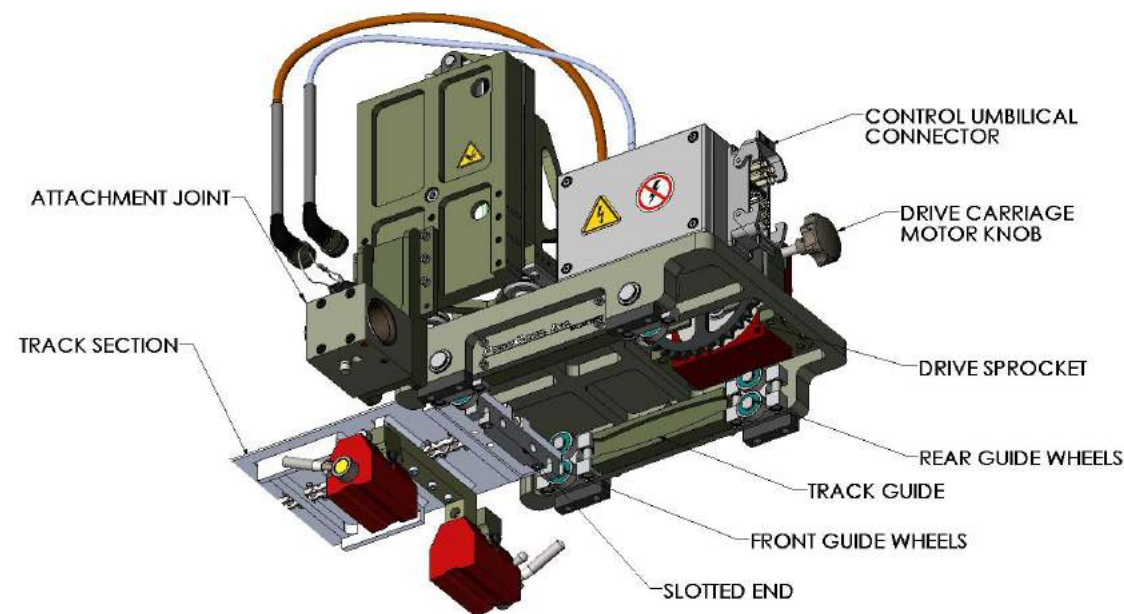
PIPELINES

REMOVE WELDS AT A RATE OF 3 FT/MIN (61 CM/MIN) up to 3 IN (7.62 CM) WIDE



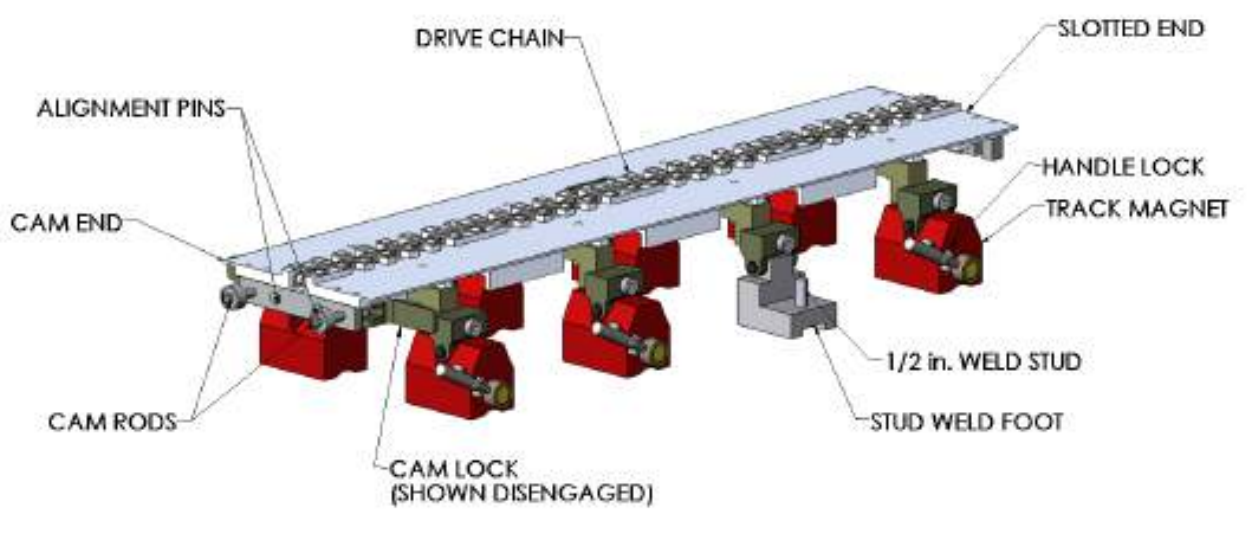


### CARRIAGE OVERVIEW



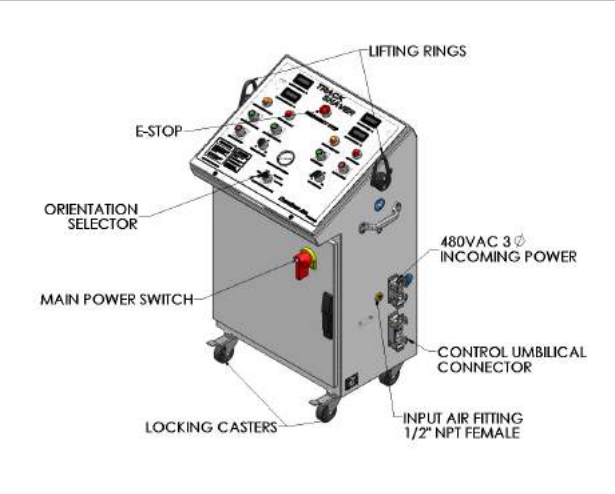
System is an automated solution for the rapid removal of weld beads above a panel surface. The Weld Shaver is moved along a track by the Drive Carriage with the user managing everything remotely from the Control Console. The TWS91 System is comprised of five major components; the Track (either Flex or High-Flex), the Drive Carriage, the Weld Shaver, the Control Umbilical, and the Control Console.

### TRACK SECTIONS



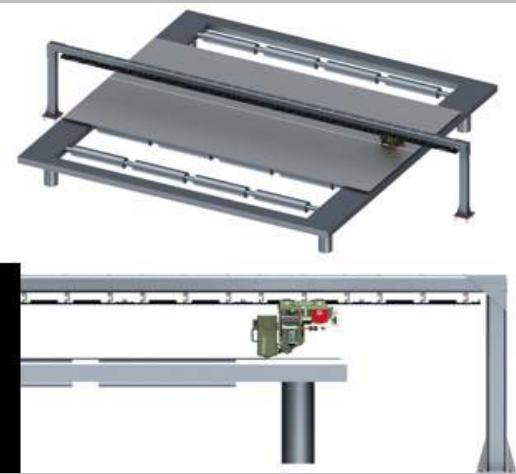
The portable track is available in three configurations, a 35 in. (0.9m) High-Flex, 35 in. (0.9m) Flex, and a 70 in. (1.8m) Flex. All track configurations are held to the steel surface via eight (8) high strength magnets that generate over 200 lbs. (890 N) of holding force. These magnets must be supplemented with attachment feet that are secured to the panel via 1/2" weld studs during Horizontal, Vertical, or Overhead orientations, providing a "fail safe" connection. The High-Flex Track configuration must be utilized for any panel with a bend radius less than 10m (400 in.). The High-Flex Track has a minimum bend radius of 60 in. (1.5 m). The Flex Track may be used on any panel with a bend radius greater than 400 in. (10 m), allowing fewer track sections to be utilized.

### CONTROL OVERVIEW



The Control Console allows the operator to completely manage the weld shaving process from a safe distance. The operator adjusts the Drive Carriage servo motor (Feed Rate) and the Weld Shaver servo motor (Cutting Speed) with rotary knobs. Speed and effort displays for each motor are also located on the console. The cutting force and retract is set from the Control Console, through the Orientation Selector. The Control Console is fitted with lifting eyes and locking casters for maneuvering the unit to and around the work area.

### GANTRY TABLE SETUP

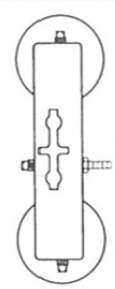


### MANIPULATOR SETUP

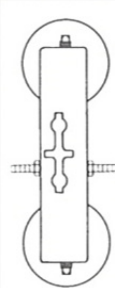




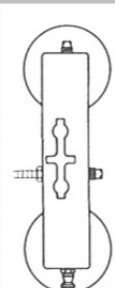
## VACUUM MANIFOLD MOUNTING UNITS



**GV-168-083-2** (Blocked End)  
Designed for use on the track section at the end of the vacuum mounting system run. Equipped with 1 mounting pad, 2 vacuum cups, 3 plugs and 1 hose connector

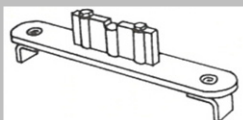


**GV-168-055** (In Between)  
Designed for use as the "in between" mounting units in both Rigid and Flex Track systems. Equipped with 1 mounting pad, 2 vacuum cups, 2 plugs and 2 hose connectors.



**GV-168-083-1** (Connecting End)  
Comprised of manifold block equipped with 1 disconnect coupling suited for connection to end of vacuum pump hose or to connect one track assembly to a second track assembly. Equipped with 1 mounting pad, 2 vacuum cups, 2 plugs and 1 male hose connector.

## MOUNTING BRACKET

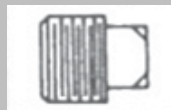


**Model GV-192-F-410**  
Comprised of mounting pad, support bar and 2 stainless steel mounting angle brackets.

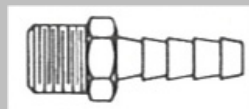
## FITTINGS



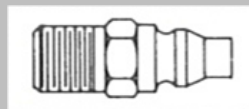
**FLEXIBLE HOSE CONNECTOR GV-168-071**  
For interconnecting vacuum mounted track sections 36" (914mm) long.



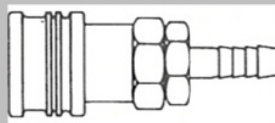
**PLUG GF-168-007** for unused manifold openings



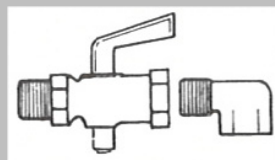
**HOSE CONNECTOR GF-168-005**



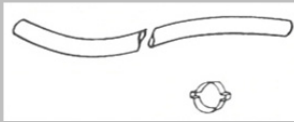
**QUICK CONNECT COUPLING GV-168-009**



**QUICK CONNECT COUPLING GF-168-010**

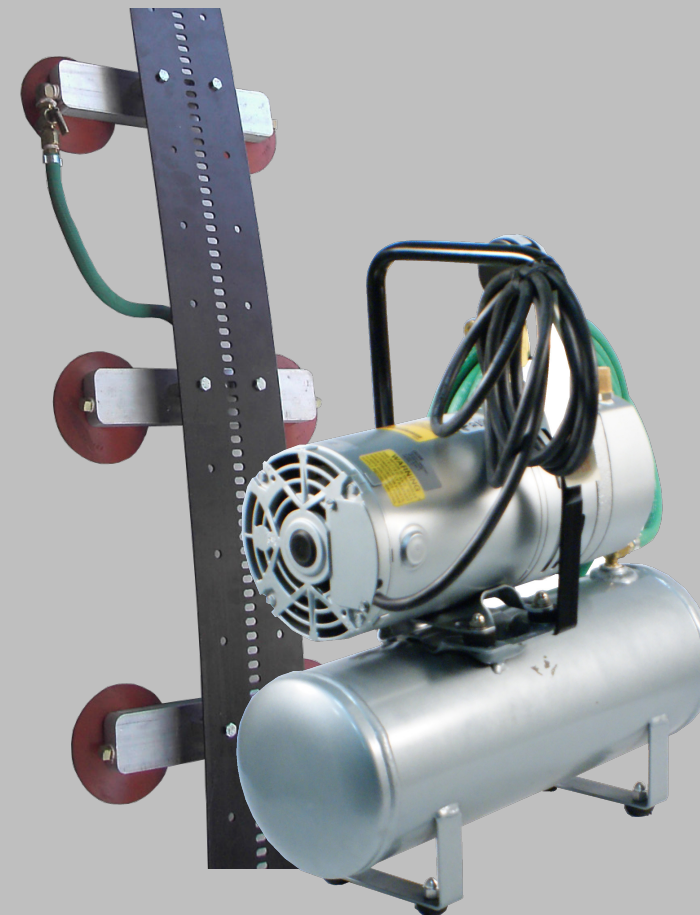


**ON/OFF VALVE Model GV-192-F-074**  
Used on-line or as required in Flex-Track Systems



**FLEXIBLE HOSE SECTIONS GV-168-072**  
used in various lengths to connect manifold assemblies. Secured by hose clamps **GV-192-F-076**

## VACUUM TRACK MOUNTING SYSTEM FOR KAT®



The Gullco vacuum mounting systems are designed to firmly hold the KAT Rigid and Flex Tracks in position on ferrous and non-ferrous materials. The systems are durable and dependable while incorporating a light weight design for portability. There are Vacuum/KAT® carriage packages specifically designed for automatic welding and cutting applications.

*Quick Setup Time - Lightweight Design - Portable*

VACUUM SYSTEM FOR MOUNTING CARRIAGE TRACK ON NON-MAGNETIC MATERIALS

KAT, KBM, MOGGY, KATBAK & SAM are registered trademarks of Gullco Enterprises Limited

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL DIMENSIONS ARE NOMINAL

Distributed by:

GULLCO.COM

VS-11-01

**GULLCO**

**CANADA - GULLCO INTERNATIONAL LIMITED**  
Phone: 905-953-4140 Fax: 905-953-4138 e-mail: sales@gullco.com

**U.S.A - GULLCO INTERNATIONAL INC.**  
Phone: 440-439-8333 Fax: 440-439-3634 e-mail: ussales@gullco.com

**EUROPE - GULLCO INTERNATIONAL (U.K.) LIMITED**  
Phone: +44 1257-253579 Fax: +44 1257-254629 e-mail: uksales@gullco.com

**AUSTRALIA - GULLCO INTERNATIONAL PTY LIMITED**  
Phone: 61 (0)7 3348 5515 Fax: 61 (0)7 3348 5510 e-mail: ausales@gullco.com

**INDIA - GULLCO INTERNATIONAL INDIA PVT LIMITED**  
Phone: +91-20-2551-1433 Fax: +91-20-2551-1433 e-mail: indsales@gullco.com

**CHINA - GULLCO INTERNATIONAL SHANGHAI LIMITED**  
Phone: +8621-50460341 Fax: +8621-50463554 e-mail: c.zhang@gullco.com

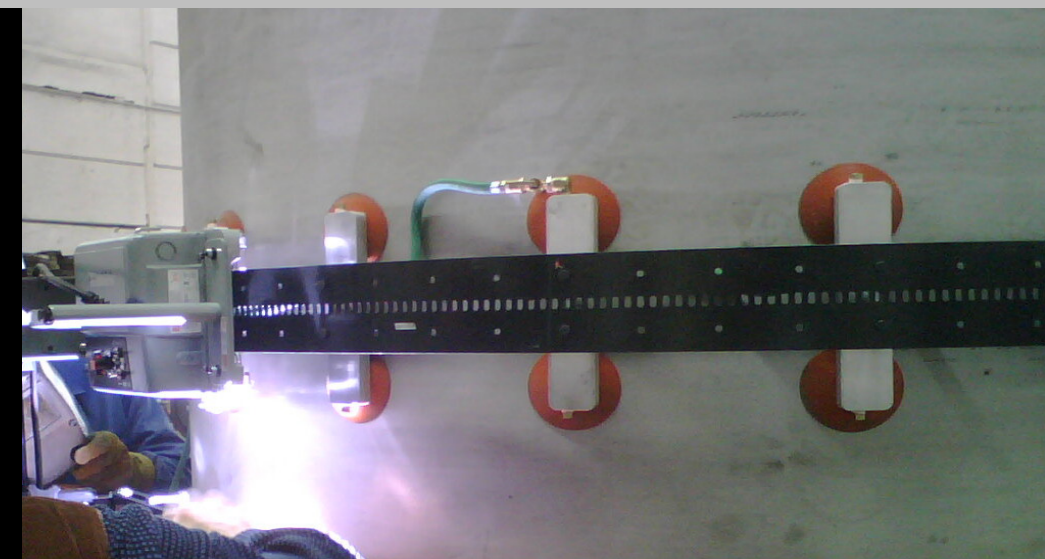
**SINGAPORE - GULLCO INTERNATIONAL LIMITED**  
Phone: +65-9385-4468 e-mail: benny.lim@gullco.com

**LATIN AMERICA - GULLCO INTERNATIONAL LIMITED**  
Phone: 55-11-99485-1336 e-mail: rogerio.macedo@gullco.com

**Stuch GmbH & Co. KG Schweistechnik - GERMANY**  
Phone: (02 03) 72 94 95 Fax: (02 03) 72 94 96 e-mail: info@stuch-schweisstechnik.de

**GULLCO**

WELDING AND CUTTING

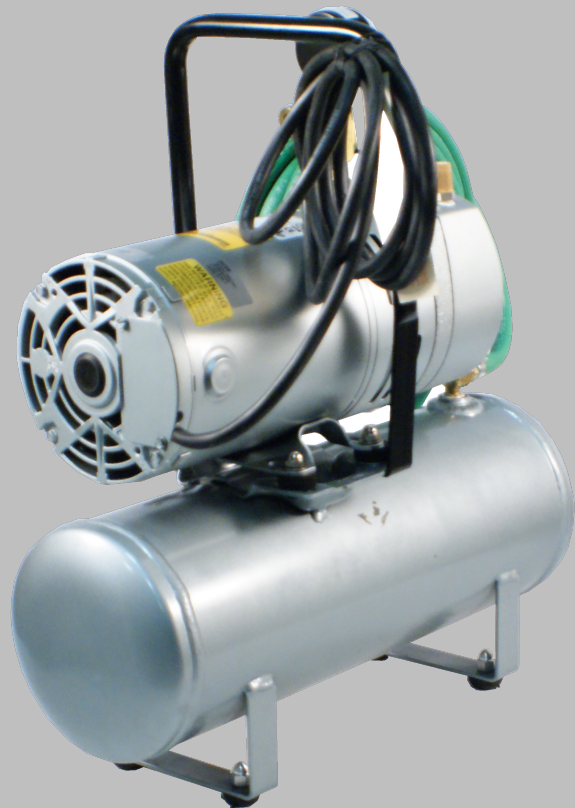




## BASIC VACUUM MOUNTING COMPONENTS

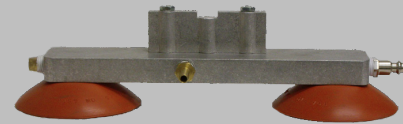
Described on these pages are the vacuum systems that Gullco makes available for mounting KAT® Rigid Track and KAT® Flex Track on ferrous and non-ferrous materials.

The portable vacuum pump for these systems is described below. At right are the basic vacuum components used in both the rigid and flex track mounting assemblies. They are supplied by Gullco as complete, ready-to-use assemblies or as individual parts, either for standard lengths of track or for continuous runs of any specified length.



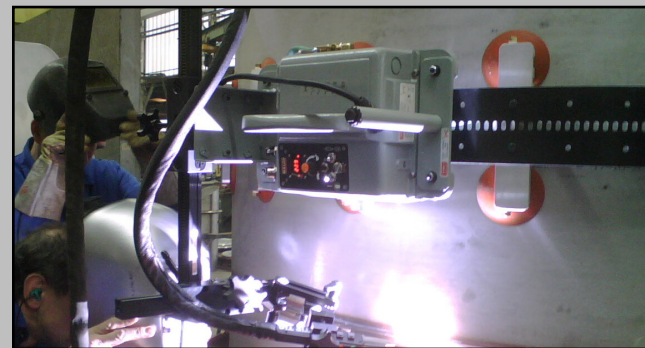
### PORTABLE VACUUM UNIT Model GV-168-050

Comprised of electric motor driven, 2.4 cfm capacity vacuum pump mounted on cylindrical safety reservoir. Complete with vacuum gauge, filter, non-return valve, necessary fittings and 10 ft. (3048 mm) of flexible hose with quick disconnect coupling. \*Recommended 3 pieces of **GK-165-054** Rigid or **GK-192-F-054-2** Flexible Track per vacuum pump.



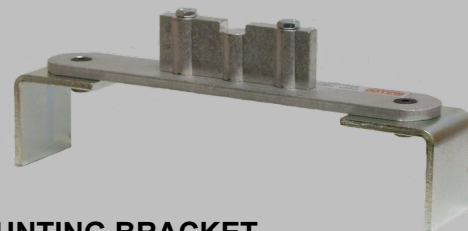
### VACUUM MANIFOLD BLOCK MOUNTING UNIT

Comprised of two vacuum cups, manifold block and mounting pad. The manifold has openings at each end and at the centre of each side for fittings required in assemblies such as hose connectors, couplings, valves and plugs. Heat resistance of the vacuum cup is 450°F for short durations and 350°F continuous. Minimum temperature is -40°F.



### VACUUM MANIFOLD ASSEMBLIES

Link any number of Vacuum Block Mounting Units to provide a complete, in-line track mounting system. The end units are supplied with appropriate fittings for attachment to the pump or the next series of mounting units, while all "in-between" units have hose connectors on each side.



### MOUNTING BRACKET

Comprised of mounting pad, support bar and two stainless steel mounting angle brackets. This component is primarily used to provide extra track stiffness to Flex-Track vacuum mounting assemblies and as tack welded support to provide an extra measure of safety in applications involving vertically mounted KAT® Rigid Track or Flex Track

## FOR MOUNTING GULLCO RIGID KAT® TRACK

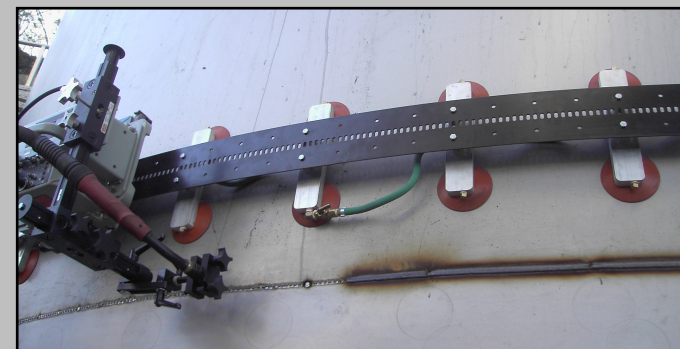
Gullco can supply a ready-to-use kit to vacuum mount KAT® Track, providing manifold block mounting units for mounting on 30" (761 mm) centers along with all appropriate hoses, fittings, etc.

For convenience, three kits are available for mounting standard 48", 96" and 120" (1219, 2438 and 3048mm) lengths of KAT® Track. They are described at right. It should be noted that these kits are supplied for use only with the designated track length. If lengths are to be joined, interconnecting fittings must be ordered.

3 lengths of 120" (3048mm) track can be handled by on vacuum pump (**Model GV-168-050**) depending on work surface finish.



Gullco Flex-Track is 8 ft. (2438 mm) and has holes for the attachment of manifold block mounting units and stainless steel mounting brackets. In some applications, the number of manifold block units may be safely reduced by using brackets so the number of each supplied will vary according to application requirements. For convenience, two kits are available for vacuum mounting KAT® Flex-Track, one meeting minimum stiffness requirements, the other providing standard stiffness.



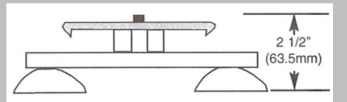
### ASSEMBLIES FOR MOUNTING STANDARD LENGTHS OF KAT TRACK

**Model GV-168-051-A** for mounting 48" (1219mm) KAT Track comprised of 2 vacuum manifold block mounting units at 30" (761mm) centers complete with flexible hose between manifolds and male quick connect couplings for connecting the pump.

**Model GV-168-053-A** for mounting 96" (2438mm) KAT Track- as above, but 3 vacuum manifold block mounting units.

**Model GV-168-070-A** for mounting 120" (3048mm) KAT Track as above, but 4 Vacuum manifold block mounting units.

### VACUUM MOUNTED HEIGHT KAT® RIGID TRACK



### ASSEMBLIES FOR MOUNTING 96" (2438 mm) LENGTHS OF KAT® FLEX- TRACK

Model **GV-192-F-409** recommended for mounting on the heavy duty flex track, model **GK-192-F-054-2** comprised of 8 vacuum manifold block mounting units at 12" (304.8 mm) centers when complete with flexible hose between manifolds, intermediate shut-off valve and male quick connect coupling for connection to vacuum pump hose.

### ASSEMBLIES FOR MOUNTING 96" (2438 mm) LENGTHS OF KAT® FLEX TRACK

