

Seam Tracking Systems



The Cyclomatic Series Seam Tracker control uses our proven microprocessor touch pad design to maintain the torch to weld joint position. The system continuously senses the position of the joint, translating the information into horizontal and vertical movement of the torch. As a result, the welding arc stays precisely on track — to within $\pm 0.005"$ (0.13 mm) or better!

The state of the art performance of the control's Atmel® processor coupled with the rugged slide design options gives accurate, repeatable weld joint location.

All types of welding systems, both new and existing, can benefit. The system easily and quickly installs, without expensive brackets or interfacing, on manipulators, side beams, tractors, positioners, turning rolls, and welding lathes, as well as on most custom welding fixtures.

The Cyclomatic Seam Tracker is especially beneficial in high-volume, accuracy-sensitive industries such as tank and pressure vessel fabrication, beam and structural assemblies, and pipe and tubing fabrication.

Features

- Two models available - standard and programmable; in 40 lb & 250 lb weight capacities
- Improves quality via constant torch to weld joint orientation
- GMAW, FCAW, SAW applications
- Precise, tracking accuracy up to ± 0.005 inch (0.1 mm)
- Tracks single pass fillet and groove welds
- Controls and slides are backward compatible with older Cyclomatic models
- Value - The programmable PTST model can operate as a weld system controller
- Performance - The PTST model stores up to 19 weld programs, each consisting of up to 8 sequential steps

Specifications

Model	PTST40 3x3 & TST40 3x3	PTST250 & TST250 (5x5 and 10x10)
Load Capacity	40 lb (18 kg)	250 lb (113 kg)
CG Distance from faceplate	6" (152 mm)	12" (305 mm)
Standard Stroke	3" x 3" (76 mm)	5" x 5" (127 mm) and 10" x 10" (254 mm)
Min. Envelope Full Std. Stroke	12" (305 mm) diameter	17" (431 mm) diameter
Tracking Accuracy	Within 0.005" (0.13 mm)	Within 0.005" (0.13 mm)
Max. Cross Slide Slew Std. Rate	24 IPM (0.6 mm)	25 IPM (0.63 mm)
Tracking Controls Manual	Up/Down and Left/Right	Up/Down and Left/Right
Tracking Controls Automatic	Left/Right Sidetrack and Off	Left/Right Sidetrack and Off
Input Power	115/220VAC, 1 Phase, 50/60 Hz	115/220VAC, 1 Phase, 50/60 Hz
Cross Slide Cable	10 ft (3 m) standard	10 ft (3 m)
Omni-Guide Cable	4 ft (1.2 m)	4 ft (1.2 m)
Power Cable	6 ft (1.8 m)	6 ft (1.8 m)
Pendant Cable	10 ft (3 m)	10 ft (3 m)
Standard System Weight	79 lb (36 kg)	105 lb (48 kg) and 118 lb (54 kg)

CYCLOMATIC SERIES SEAM TRACKING SYSTEMS

System Components

9660P or 9660S

Programmable or Standard Microprocessor Control housed in a NEMA enclosure for easy mounting near the work center. The unit has a lighted power switch and fuse holder mounted on the exterior of the unit.

The control unit houses the solid-state components which provide long life and trouble-free operation. All interconnecting cables enter the control unit through connectors on the bottom of the enclosure. A sealed heatsink mounted on the side of the control allows for convection cooling.



9660P Programmable Control Unit

Omni-Guide® Sensor Assembly

The electromagnetic mechanical sensor rides in the weld joint ahead of the torch. The Omni-Guide is a unique, durable sensor that tracks the weld joint and provides correction signals to the seam tracker system. The correction signals enable the motorized cross slides to maintain a $\pm 0.005"$ (0.13 mm) accuracy while aligning the welding torch with the weld joint. The sealed design of the Omni-Guide prevents dust, heat, and moisture from damaging internal components.



The internal sensor is also a sealed, electro-magnetic component that responds to probe tip movements and generates the correction signals. This patented design enhances accuracy and durability when compared to switches or sliding contacts used in other systems.

The Omni-Guide mounting bracket is a 5-axis bracket that includes an adjustable angle bracket mounted on a set of small manual cross slides. The Omni-Guide bracket is typically mounted on the welding torch with the torch clamp bracket.

Seam Tracker Pendant

Ergonomic, light weight, easy to operate pendant. It is enclosed in a heavy-duty aluminum housing and is designed for either handheld or mounted applications. Two sealed rocker switches, joystick, and two pushbuttons provide the following features:



- Manual mode for operator positioning of the torch or Automatic mode for automatic seam tracking
- Jog Up/Down or Left/Right
- Sidetrack Left/Off/Right to bias the sensor left or right for lap joints, horizontal fillets, cladding, etc.
- Start Cycle Switch with lamp to indicate automatic mode for use with programmable option to start the welding operation
- Tack Cutoff Switch with lamps to indicate the feature is Armed and when a tack is sensed (used with programmable control to allow operator to turn Tack Cutoff feature on/off)

Omni-Guide® Tips

Easily changed in just seconds, Omni-Guide tips are available in a complete selection of styles and shapes to match the requirements of each type of weld. They ensure maximum accuracy of tracking, regardless of weld configuration.

Each tip is made of plated steel with ends of a special wear-resistant alloy. The tip extension is adaptable to any standard tip shown. If worn or damaged in use, only the relatively inexpensive tip needs to be replaced.

PT012 tip is included with every seam tracker system.



PT006 #179747



PT063 #179752



PT012 #179748



PT075 #179753



PT025 #179749



PT100 #179754



PT038 #179750



TX03 #179746
Tip Extension



PT050 #179751

CYCLOMATIC SERIES SEAM TRACKING SYSTEMS

Set of Motorized Slides

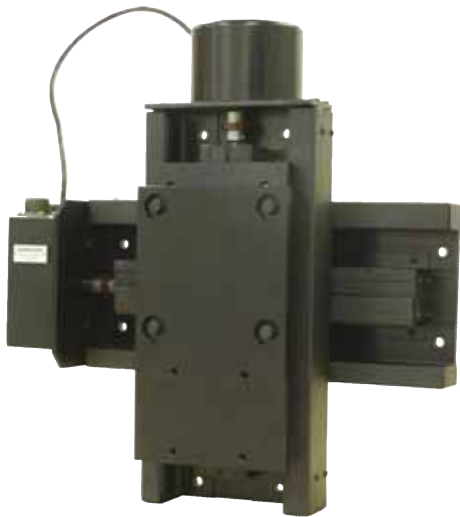
The cross slides are rugged, compact, and light weight units which provide vertical and horizontal torch positioning. The slides incorporate ball bearing wheels that ride on hardened steel ways mounted on an aluminum base structure. Totally enclosed DC gear motors drive the ball screws.

You select weight capacity and stroke lengths for these motorized slides.

Standard slide capacities available are:

Weight Capacity	Standard Stroke (H x V)	Slew Rate
40lb (18Kg)	3"x3" (76mm)	24 IPM (.6m/min)
250lb (113Kg)	5"x5" (127mm)	25 IPM (.63m/min)
250lb (113Kg)	10"x10" (254mm)	25 IPM (.63m/min)

Single axis slides are offered. Other stroke lengths, up to a maximum of 60 in (1,524 mm), are available via special order. Consult factory for price and availability.



Cyclomatic Series X-Y Slides

Torch Bracket

Mounts user supplied welding torch to motorized slides and probe assembly.

Cables

Input for control, probe, and slide interface. User supplies cable for power source and other positioning equipment.

PTST Programmable Seam Tracker

The programmable seam tracker automatically controls the weld cycle, including power supply start and stop, wire feed, positioner, and other related equipment. Two basic cycle modes are available: Timed or End-of-Weld Cutoff.

A two-axis search feature enables the Omni-Guide sensor to find the weld joint automatically prior to welding.

Special timing functions allow for stable arc initiation, crater fill, and retraction to a home position. The option also provides inputs for remote signals from other equipment to start, emergency stop, control tack cutoff, auto disable, external limit switch, end-of-weld signal, and enable multiple tracker synchronization for multi-torch welds.

Timed Mode - The system welds for a preset time and then goes into overlap to complete desired length of weld.

End-of-Weld Cut-Off Mode - (Down or Up Cutoff) Omni-Guide sensor drops off end of part or tracks up onto the bead and goes into overlap to compensate for the sensor to torch distance to complete the weld.

Tack Cutoff - This option disables automatic tracking when the Omni-Guide encounters a tack weld bead. Once the Omni-Guide tip drops off the end of the tack weld bead, the automatic tracking is re-enabled.

The 9660P seam tracker control offers 12 different weld functions which can be incorporated into 19 weld programs consisting of up to 8 operational steps each.

The weld functions are:

Timers:

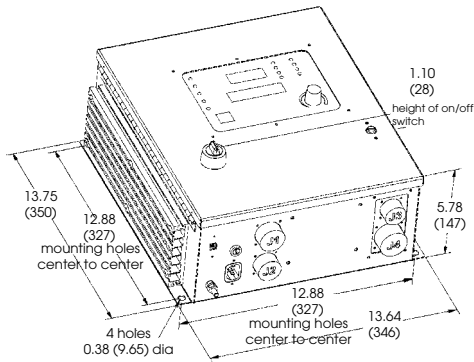
- Weld Time/Auto Cutoff Enable Time
- Overlap Time
- Final Time
- Retract Time

Functions:

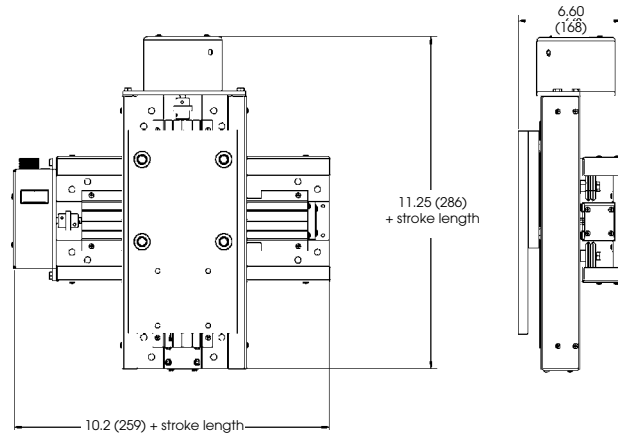
- Timed or Auto Cutoff Mode
- Tack Cutoff (with Threshold Adjustment for tack height)
- Z-Search
- Lockout
- Sidetrack Disable at Null
- Vertical Search Delay
- Horizontal Retract Delay
- Crater Fill Delay

Remote inputs are also available offering remote start and stop functions as well as more advanced inputs such as: Null Input for synchronizing multiple control units, Vertical Auto Disable, Horizontal Auto Disable, and Cutoff.

CYCLOMATIC SERIES SEAM TRACKING SYSTEMS

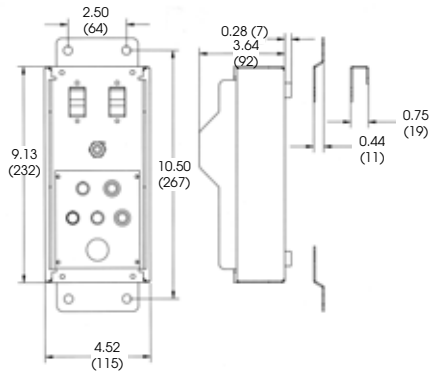


Seam Tracker Control Dimensions

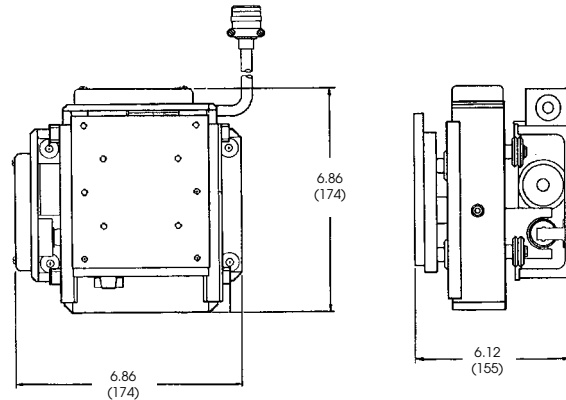


MSP250 Cross Slide Dimensions

All dimensions are in inches (mm)



Seam Tracker Pendant Dimensions



MSP40 Cross Slide Dimensions

Ordering Information

Part Number	Description
System Packages	
PTST40-3X3	Programmable Seam Tracker - 3"x3" (76x76 mm) stroke
PTST250-5X5	Programmable Seam Tracker - 5"x5" (127x127 mm) stroke
PTST250-10X10	Programmable Seam Tracker - 10"x10" (254x254 mm) stroke
TST40-3X3	Standard Seam Tracker - 3"x3" (76x76 mm) stroke
TST250-5X5	Standard Seam Tracker - 5"x5" (127x127 mm) stroke
TST250-10X10	Standard Seam Tracker - 10"x10" (254x254 mm) stroke

Backward Compatibility - Older Cyclomatic slides can operate from new series controls and pendants. Older Cyclomatic controls and pendants can operate the new slides. Contact Jetline with your preferences.

See Jetline price list for complete ordering information

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