**Seam Tracker™ Systems**

**Processes**
Submerged Arc, MIG, FCAW

**Product Number**
See back for complete specs

<table>
<thead>
<tr>
<th>Input Power</th>
<th>120/230/1/50/60</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel Speed</strong></td>
<td></td>
</tr>
<tr>
<td>ST40 – 24 ipm (0.61 m/min) max.</td>
<td></td>
</tr>
<tr>
<td>ST250 – 32 ipm (0.81 m/min) max.</td>
<td></td>
</tr>
<tr>
<td>ST450 – 17 ipm (0.43 m/min) max.</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td></td>
</tr>
<tr>
<td>ST40 – 79 lbs. (35.8 kg) min.</td>
<td></td>
</tr>
<tr>
<td>ST250 – 105 lbs. (47.6 kg) min.</td>
<td></td>
</tr>
<tr>
<td>ST450 – 162 lbs. (73.5 kg) min.</td>
<td></td>
</tr>
<tr>
<td><strong>Weight Capacity</strong></td>
<td></td>
</tr>
<tr>
<td>CS40 Cross Slide – 40 lbs. (18.1 kg) @ 6 in. (152.4 mm) from plate</td>
<td></td>
</tr>
<tr>
<td>CS250 Cross Slide – 250 lbs. (113.4 kg) @ 12 in. (304.8 mm) from plate</td>
<td></td>
</tr>
<tr>
<td>CS450 Cross Slide – 450 lbs. (204.1 kg) @ 24 in. (609.6 mm) from plate</td>
<td></td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>Customized lengths available</td>
</tr>
<tr>
<td>ST40 – 3 x 3 in. (76.2 x 76.2 mm), 6 x 6 in. (152.4 x 152.4 mm)</td>
<td></td>
</tr>
<tr>
<td>ST250 – 5 x 5 in. (127 x 127 mm), 10 x 10 in. (254 x 254 mm)</td>
<td></td>
</tr>
<tr>
<td>ST450 – 5 x 5 in. (127 x 127 mm), 10 x 10 in. (254 x 254 mm)</td>
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</tr>
</tbody>
</table>

**Precise Automated Seam Tracking**

Arc Products™ tactile seam tracking systems deliver precise automated seam tracking for submerged arc, GMAW, FCAW and GTAW welding processes. Ideal for repetitive welding applications, these systems are recommended over manual and semiautomatic welding to improve quality and consistency while reducing operational costs. A range of standard systems or customized solutions are available to meet the requirements of many tough production environments.

**FEATURES**
- **Easy to Set Up** – Often installed and operating in one day.
- **Easy to Operate** – With a welding background, most operators can quickly learn to program and operate.
- **Simple System Selection** – (Pre-configured systems are available)
  - Select the desired level of automation - one of two controllers and matching pendants
  - Choose a cross slide assembly based on load capacity required to handle the weight of the welding drive components
  - Determine the travel stroke length of each axis necessary to complete the weld
  - Select the application-specific seam sensor tip
- **Advanced Controls Available** – Gain these additional capabilities with the Advanced Programming Control (APC)
  - Program the entire sequence of the weld cycle with position-based or time-based commands
  - Store up to 19 weld programs
- **Widespread Integration Capability** – Build a system around almost any welding power source, feeder and controller group.

**APPLICATIONS**
- Tanks
- Pipe
- Pressure Vessels
- Beam and Stiffeners
- Rims / Wheels
- Wind Tower Sections

**WHAT’S INCLUDED (One-Pak®)**
- Seam Tracker™ Control
  - Advanced Programming Control (K52021-1)
  - Standard Control (K52020-1)
- Pendant
  - Advanced Process Pendant w/10 ft. (3 m) Cable (K52023-1)
  - Standard Pendant w/10 ft. (3 m) Cable (K52022-1)
- Cables
  - 4 ft. (1.2 m) for CS40 (K52033-1)
  - 10 ft. (3 m) for CS250 & CS450 (K52030-1)

**INPUT**
- Cross Slide Assembly (select 1)
  - CS40
  - CS250
  - CS450
- Seam Sensor Components
  - Seam Sensor Assembly (K52019-1)
  - Five Axis Probe Bracket (KP52026-1)
  - Weld Torch Mounting Kit (KP52027-1)
  - Sensor Insulator (KP52029-1)
  - Seam Sensor Tip (KP52028-1)
# KEY CONTROLS

## Seam Tracker™ Advanced Programming Control (APC)

### FACE PLATE
1. Function Indicator LEDs for Sequence Control
2. Program LED (19 Programs)
3. Timer Change Select Button
4. Lighted Power On/Off Switch
5. Threshold Knob – for Tack or Auto Cutoff
6. Adjustment Buttons
7. Features Enabled LEDs (Selected by internal DIP Switches)
8. Digital Display

### BOTTOM PLATE
1. Pendant J1 Connection
2. Fuse (2 amp, 250 volt)
3. 115/230 Input Voltage Switch
4. Ground Connection
5. Input Cable Receptacle (115/230 VAC)
6. Cross Slide J2 Connection
7. Programmable Control Option Connection (Optional on Standard Control)
8. Remote Output J4 Connection

### PENDANT
1. Mode – Auto or Manual
2. Joystick
3. APC Indicator Light
4. Tack Armed Light
5. Emergency Stop Button
6. Cable Connection
7. Arm Button
8. Tack Light
9. Start Cycle Button
10. Sidetrack Control (Left/Off/Right)
SYSTEM SELECTION

Step 1 - Select the desired level of automation – one of two controllers and matching pendants

Seam Tracker™ Advanced Programming Control Unit and Pendant

Seam Tracker™ Standard Control Unit and Pendant

Step 2 - Choose a cross slide assembly based on:
A. Load capacity required to handle the weight of the welding drive components
B. Determine the travel stroke length of each axis necessary to complete the weld

Step 3 - Select the application-specific seam sensor tip

Seam Sensor Assembly
The seam sensor assembly is an electro-mechanical device that tracks the joint like a needle on a record. The 5-axis probe bracket positions the seam sensor assembly for optimal tactile tracking angles.

Seam Tracker™ Required Components
Required for each Package:
- Probe Bracket Assembly
- Seam Sensor
- Drive Cable
- Sensor Cable
- Torch Clamp
- Sensor Tip

CS40 Cross Slide
- 40 lb. capacity 6 in. off of faceplate
- Great for inside of pipe with small payloads
- 24 ipm max correction rate
- Standard strokes are:
  - 3 in. x 3 in.
  - 6 in. x 6 in.

CS250 Cross Slide
- 250 lb. capacity 12 in. off of faceplate
- Our most common slide
- Accommodates 80% of the single arc applications
- 32 ipm max. correction rate
- Standard strokes are:
  - 5 in. x 5 in.
  - 10 in. x 10 in.
  - Up to 60 in.

CS450 Cross Slide
- 450 lb. capacity 24 in. off of faceplate
- Great for twin arc applications where loads extend outward
- 24 ipm max correction rate
- Standard strokes are:
  - 5 in. x 5 in.
  - 10 in. x 10 in.
  - Up to 60 in.

PT06 Tip
1/16 in
(1.6 mm)
Round
KP52047-1

PT012 Tip
1/8 in
(3.2 mm)
Round
KP52028-1

PT025 Tip
1/4 in
(6.4 mm)
Ball
KP52053-1

PT038 Tip
3/8 in
(9.5 mm)
Ball
KP52052-1

PT050 Tip
1/2 in
(12.7 mm)
Ball
KP52051-1

PT063 Tip
5/8 in
(16 mm)
Ball
KP52050-1

PT075 Tip
3/4 in
(19 mm)
Ball
KP52049-1

PT100 Tip
1 in
(25 mm)
Ball
KP52048-1

ST01 Tip,
Blade and Roller
KP52037-1

ST03 Tip,
Side Extension
KP52038-1

ST07 Tip,
Tack Weld Groove
KP52039-1

ST09 Tip,
Two-Wheel Override
KP52040-1

ST04 Tip,
Curved Side Extension
KP52041-1

ST12 Tip,
Single Wheel
KP52042-1

ST08 Tip,
Tack Weld Fillet
KP52043-1

ST11 Tip,
Curved
KP52044-1

ST13 Tip,
Twin Tip
KP52045-1

K52019-1
(Tip not included)

KS52026-1

Seam Tracker™ Systems | 3 | THE WELDING EXPERTS®
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>ST40 - Std. &amp; APC</th>
<th>ST250 - Std. &amp; APC</th>
<th>ST450 - Std. &amp; APC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Capacity</td>
<td>40 lbs (18 kg) @ 6 in (152 mm) from faceplate</td>
<td>250 lbs (113 kg) @ 12 in (305 mm) from faceplate</td>
<td>450 lbs (204 kg) @ 24 in (610 mm) from faceplate</td>
</tr>
<tr>
<td>Std. Stroke Lengths</td>
<td>3 x 3 in (76 mm) 6 x 6 in (152 mm)</td>
<td>5 x 5 in (127 mm) 10 x 10 in (254 mm)</td>
<td>5 x 5 in (127 mm) 10 x 10 in (254 mm)</td>
</tr>
<tr>
<td>Minimum Envelope</td>
<td>3 x 3 in (76 x 76 mm) stroke = 12 in (305 mm) diameter</td>
<td>5 x 5 in (127 x 127 mm) stroke = 17 in (432 mm) diameter</td>
<td>5 x 5 in (127 x 127 mm) stroke = 22.5 in (572 mm) diameter</td>
</tr>
<tr>
<td>Tracking Accuracy</td>
<td>Within 0.005 in (0.127 mm)</td>
<td>Within 0.005 in (0.127 mm)</td>
<td>Within 0.005 in (0.127 mm)</td>
</tr>
<tr>
<td>Standard System Weight</td>
<td>3 x 3 in (76 x 76 mm) = 79 lb (36 kg) 6 x 6 in (152 x 152 mm) = 90 lb (41 kg)</td>
<td>5 x 5 in (127 x 127 mm) = 105 lb (48 kg) 10 x 10 in (254 x 254 mm) = 118 lb (54 kg)</td>
<td>5 x 5 in (127 x 127 mm) = 162 lb (74 kg) 10 x 10 in (254 x 254 mm) = 178 lb (81 kg)</td>
</tr>
<tr>
<td>Travel Speed</td>
<td>24 ipm (0.61 m/min) max</td>
<td>32 ipm (0.81 m/min) max</td>
<td>17 ipm (0.43 m/min) max</td>
</tr>
<tr>
<td>Tracking Controls</td>
<td>Automatic Control with Seam Sensor or Manual Up/Down and Left/Right with Pendant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Power (V/Ph/Hz)</td>
<td>120/230/1/50/60</td>
<td>120/230/1/50/60</td>
<td>120/230/1/50/60</td>
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</tbody>
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### SEAM TRACKER™ SYSTEMS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Input Power Voltage/Phase/Hertz</th>
</tr>
</thead>
<tbody>
<tr>
<td>K52017-1</td>
<td>Seam Tracker™ Advanced Programming Control Package for CS250 and CS450 (Control, Pendant and Cables)</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52058-1</td>
<td>Seam Tracker™ Advanced Programming Control Package for CS40 (Control, Pendant and Cables)</td>
<td>120/230/1/50/60</td>
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<tr>
<td>K52021-1</td>
<td>Seam Tracker™ Advanced Programming Control Unit</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52023-1</td>
<td>Seam Tracker™ Pendant w/ APC - 10 ft (3 m) Cable</td>
<td>120/230/1/50/60</td>
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</tbody>
</table>

### COMPLETE APC (ADVANCED PROGRAMMING CONTROL) SYSTEMS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>K52005-0303</td>
<td>ST40 3 x 3 in (76 x 76 mm) System w/ APC One-Pak®</td>
</tr>
<tr>
<td>K52005-0606</td>
<td>ST40 6 x 6 in (152 x 152 mm) System w/ APC One-Pak®</td>
</tr>
<tr>
<td>K52008-0505</td>
<td>ST250 5 x 5 in (127 x 127 mm) System w/ APC One-Pak®</td>
</tr>
<tr>
<td>K52008-1010</td>
<td>ST250 10 x 10 in (254 x 254 mm) System w/ APC One-Pak®</td>
</tr>
<tr>
<td>K52011-0505</td>
<td>ST450 5 x 5 in (127 x 127 mm) System w/ APC One-Pak®</td>
</tr>
<tr>
<td>K52011-1010</td>
<td>ST450 10 x 10 in (254 x 254 mm) System w/ APC One-Pak®</td>
</tr>
</tbody>
</table>

### SEAM SENSOR COMPONENTS & TIPS

<table>
<thead>
<tr>
<th>Part Number</th>
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<tbody>
<tr>
<td>K52019-1</td>
<td>Seam Sensor Assembly</td>
</tr>
<tr>
<td>K52026-1</td>
<td>Five-Axis Probe Bracket</td>
</tr>
<tr>
<td>K52027-1</td>
<td>Weld Torch Mounting Kit</td>
</tr>
<tr>
<td>K52031-1</td>
<td>Sensor Cable Assembly - 4 ft (1.2 m)</td>
</tr>
<tr>
<td>K52030-1</td>
<td>Drive Cable - 10 ft (3 m)</td>
</tr>
<tr>
<td>K52029-1</td>
<td>Sensor Insulator</td>
</tr>
<tr>
<td>K52054-1</td>
<td>High Temperature Sensor Insulator Assembly</td>
</tr>
<tr>
<td>K52055-1</td>
<td>TX03 Extension Tip, 3 in. (76 mm)</td>
</tr>
<tr>
<td>K52056-1</td>
<td>High Temperature Sensor Insulator</td>
</tr>
</tbody>
</table>

### CROSS SLIDE ASSEMBLIES

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Input Power Voltage/Phase/Hertz</th>
</tr>
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<tbody>
<tr>
<td>K52013-0303</td>
<td>CS40 3 x 3 in (76 x 76 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52013-0606</td>
<td>CS40 6 x 6 in (152 x 152 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52014-0505</td>
<td>CS250 5 x 5 in (127 x 127 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52014-1010</td>
<td>CS250 10 x 10 in (254 x 254 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52015-0505</td>
<td>CS450 5 x 5 in (127 x 127 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
<tr>
<td>K52015-1010</td>
<td>CS450 10 x 10 in (254 x 254 mm) Cross Slide Assembly</td>
<td>120/230/1/50/60</td>
</tr>
</tbody>
</table>