The P-600Z external welder is a dual torch external welding system which offers consistent welding parameter quality control, and provides the user with 32 programmable welding passes per torch. In addition, this welding machine offers both horizontal and vertical tracking to maintain the center of the bevel and tip to work distance.

The P-600Z platform incorporates torch and tracking controls on board, an external wirefeeder and an external power supply controller with easy to use hand held user interface controller. This machine is suitable for GMAW or Pulsed-GMAW welding process. This machine’s versatile design easily interfaces with most constant voltage or pulsed current welding power sources including new inverters. The P-600 has the ability to perform external root pass in addition to standard hot, fill, and cap pass welding.

The onboard computer ensures precise control of welding parameters: volts, amps, travel speed, oscillation, dwell times, etc. A secure smart card prevents unauthorized weld parameter variables from being changed. The removable smart card also allows the user to store a real-time log of all essential weld data for further processing in a user-friendly Excel spreadsheet format.
### Welding System

#### Features
- Narrow-gap joint design
- Increased deposition rate
- Microprocessor control
- Easy operation
- Consistent weld properties

#### Benefits
- Less weld metal required
- Higher production rates
- Programmable for all passes
- Lower cost per weld
- Less physical strain on welders
- Consistent weld quality

### Mechanical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length Wireless Spool Weight</td>
<td>24.5” 362mm</td>
</tr>
<tr>
<td>Weight Wire Spool Weight</td>
<td>30 lbs 13.6kg</td>
</tr>
<tr>
<td>Wire Spool Weight</td>
<td>Vertical Axis Stroke</td>
</tr>
<tr>
<td>Weight</td>
<td>2” 50.8mm</td>
</tr>
<tr>
<td>Head Angle Adjustment</td>
<td>±0-10°</td>
</tr>
<tr>
<td>Oscillation Rate</td>
<td>0-220 osc/min</td>
</tr>
<tr>
<td>Oscillation Width</td>
<td>0-2” 0-50.4mm</td>
</tr>
<tr>
<td>Dwell Time</td>
<td>0-2 seconds</td>
</tr>
<tr>
<td>Wire Feed Speed</td>
<td>100-625 IPM</td>
</tr>
<tr>
<td>Travel Speed</td>
<td>4-60 IPM</td>
</tr>
<tr>
<td>Tilt Sensor</td>
<td>Accurate to ±1°</td>
</tr>
<tr>
<td>Wire Feed Motor (DC Brush-type motor)</td>
<td>Speed controlled via digital encoder</td>
</tr>
<tr>
<td>Travel Motor (DC Brush-type motor)</td>
<td>Speed controlled via digital encoder</td>
</tr>
<tr>
<td>Oscillation/Horizontal Motor</td>
<td>Uses a digital stepper motor</td>
</tr>
<tr>
<td>Vertical Motor</td>
<td>Uses a digital stepper motor</td>
</tr>
<tr>
<td>Minimum Cutback Distance (bevel to coating)</td>
<td>Please consult CRC for your application</td>
</tr>
<tr>
<td>Minimum Cutback Distance (bevel to concrete)</td>
<td>12.75” 323.9mm</td>
</tr>
</tbody>
</table>

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1 Uses 70:1 gear box for high torque; speed based on width setting, dwell time
2 Based on beats per minute
3 For 55.3:1 gear box
4 For 94:1 gear box

### Electrical Specifications

- Required power: 36 VDC regulated. Auto-switching AC (120V to 240V) to DC 36V power supply provided by CRC-Evans with P-600 system.
- Auxiliary power 24 VDC for land lines. (For tractors with single battery an optional 12V to 24V converter is available from CRC).
- Generator requirement: 440 Volt 50/60 Hz with output 100 kVA nominal (4 pulse welding power sources).
- Temperature Range: -40°C to +60°C. Contact CRC-Evans for extreme weather application setup applications.

### Welding Power Supplies Supported

- Miller 456MP, Miller XMT304, Lincoln 350 PRO, Lincoln DC400, Lincoln STT (External Root), Fronius TPS Series (Contact CRC for support of other power source).
### Programable Welding Parameters

- Pass and Weld Names
- Pipe/Band/Wire Diameters
- Welding Process
- Motor Speeds
- Motor Ramp Times
- Motor Speed Limits
- Potentiometer Function
- Oscillation Width and Width Limits
- Oscillation Frequency
- Welding Power Supply PID Parameters
- Arc Trim Range and Limits
- Work Point Range, Limits, and Ramp Time
- Arc Voltage Range and Limits
- Hot Start Work Point, Voltage, and Time
- Vertical/Horizontal Tracking Speed
- Vertical Target (Amps and Volts)
- Vertical Target Limits (Amps and Volts)
- Vertical Target Increment (Amps and Volts)
- Vertical Tracking Thresholds (Amps and Volts)
- Crater Fill Time
- Burn Back Time
- Blow Wire In Puddle Delay and Period
- Post-Purge Time
- Units (English or Metric)
- Clockwise or Counterclockwise Bug Type
- Horizontal Bias
- Auto Tilt-Based Welding Mode
- Dry Cycle Mode
- Turn Display On or Off
- Enable/Disable Oscillation Width Adjustment
- Oscillation Width Adjustment Increment
- Support for Multiple Shielding Gas
- Reverse Travel Speed
- Enable/Disable Data Logging
- Data Logging Distance
- Weld Position, etc.
- Out of Limit Weld Cut Off

Note: More programable welding parameters can be made available based on customer need.
Additional Features

- Tip-to-Work Tracking maintains the torch at a constant stick-out distance. Horizontal Tracking maintains the center of the joint.
- Thirty-two programmable welding passes per torch
- Enforced limits on programmable welding parameters (motor speeds, oscillation width, etc.)
- Secure smart card limits unauthorized access to programmable welding parameters
- Data logging is made easy with the smart card, laptop and Excel interface software supplied by CRC-Evans
- Position-Based Welding allows real-time weld parameter changes via the tilt sensor
- No trim pots or jumper settings on any hardware component
- Feedback from optical encoders on digital motors removes the need for motor calibration
- Adjustable arc trim for pulse welding helps control heat input
- Removable elastomeric keyboard is easy to replace after prolonged use of the handheld unit
- Onboard touch screen display shows critical weld parameters (Travel Speed, Wire Feed Speed, Tilt Angle, Oscillation Width and Frequency, Volts, Amps, and Pass Name) as well as user-friendly diagnostic information
- Easy-to-use graphical interface program allows upload and download of welding parameters via laptop or desktop computer
- Onboard menu system allows weld parameters to be modified from the touch screen using the secure smart card
- System can be configured to perform a single pass on multi-station jobs or perform all passes on a single station
- Microprocessor-based PID loop control is available for controlling constant-voltage welding power supplies in short arc applications
- Independent modular power driver stages for all motors assist in easy troubleshooting
- Programmable potentiometer can be set to control wire feed speed or travel speed
- Programmable start and stop positions for the welding torch

Special Features and Applications

Design
Totally modular design. Two autonomous welding torches.

Use Fewer Consumables
The P-600 system utilizes two water cooled torches for prolonged tip life and precise wire feed control for tracking.

Conformance Testing

CE European Certification
The CRC Evans External Welder (P-600) was tested to EN 55011, Group 1 Class A and was found to be in compliance with the required criteria.

Disclaimer

Although great care has been taken in compiling the information contained in this catalogue, CRC-Evans does not accept responsibility for the consequences of any errors, nor for the effects of any subsequent changes made by the various sources of data.

Dimensions and weights provided for reference only. Dimensions, specifications and weights can vary depending upon final configuration of the equipment. Please contact CRC-Evans to confirm final weights and dimensions prior to shipment.