M-500 Single Torch External Welding System

Lightweight, ambidextrous system with **advanced auto control features**

CRC Evans' (CRCE) M-500 Single Torch External Welding System delivers exceptional arc visibility, high-speed travel, and intuitive singleaction installation. Onboard voltage and current sensing and adjustable head allows rapid head angle changes. The M-500 provides reliable and consistent weld quality enabling high production rates and helping to reduce operational time and cost.

Auto head angle and head travel angle (leading or lagging) can be set through welding parameter digital input screens enabling position setting for tip changes and maintenance. Based on tilt, head travel angle can be automatically changed during the weld. Ambidextrous design allows the operator to reverse travel direction, tilt readings and head angle via a single clockwise or counterclockwise parameter.

Built-in data logging takes snapshots of critical welding data at specifi ed interval storing key data including tilt angle, torch oscillation bpm and width, tracking parameters (volts, amps, impedance), heat in joules per unit distance, travel speed and travel accumulated distance. An assumed rate of 25,000 samples per second accommodates short-term variations in individual voltage and current readings.

The M-500's driver and latching system allows seamless, single action installation to the band and a high-speed travel motor automatically returns it to a user-defi ned "home" position after fi nishing a pass eliminating manual re-latching errors and fully automated tilt sensor calibration further increases effi ciency.

Key features:

Rugged, lightweight, compact design

Built-in data logging Driver and latching system for easy installation

Automatic tilt-based welding with zonal parameter control Bug type can be easily changed via pendant

Application

High accuracy fabrication

Vertical Travel	2.0 in.	50mm
Horizontal Travel (oscillator)	3.0 in.	75mm
Travel Speed	0–200 ipm	0–5m/min.
Wire Feed Speed	0–600 ipm	0–15m/min.
Oscillator Beats Per Minute	240 bpm @ 0.500 in. width	240 bpm @ 13mm width
Torch Lead/Lag Angle	+60°/–45°	

Torch Side Wall Angle (manual)	±45°	
Size Envelope (can vary slightly based on cable routing)	12 in. H x 22 in. L x 14.5 in. W	305mm H x 559mm L x 368mm W
Weight (without wire spool)	33 lb.	15kg
Spool Weight	10 lb., 15 lb.	4.5kg, 6.8kg
Wire Diameter	0.035-0.078 in.	0.9-2.0mm
Supported Welding Power Supplies	Most appropriately rated CV power supplies* (e.g., Lincoln DC-400; Lincoln Invertec V350 Pro; Lincoln Power Wave S-500; Miller XMT 350; Miller Big Blue 400 Pro. Contact CRC Evans for support of additional power sources.)	
Required Main Power	24 VDC regulated; auto-switching AC (115V to 230V) to DC; 24V power supply provided by CRC Evans	
Generator Requirement	30 KVA per shack	
Temperature Range	-40°C to +55°C (Contact CRC Evans for extreme weather application setup requirements.)	
Minimum Cutback Distance (bevel to coating)	9.5 in.	241mm
Minimum Cutback Distance (bevel to concrete)	18 in.**	457mm

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	Model		
	M-500i	**M-500F**	**M-500P**
	Compact unit designed for shorter distances. Can handle heavier wall types. Compatible with self-shielded wire. Can be used on tie-ins. Does not require welding shack or PFM for bevels.	Can be used on a typical tie-in platform with a half-shack station. Use with or without a PFM for bevels. Full kit fits on the back of a tracked carrier.	Designed primarily for mainline production. Can be used with self-shielded wire.
Dimensions			
Weight (without wire spool)	33lbs/15kg	33lbs/15kg	33lbs/15kg
Size (L x W x H)	12x22x14.5in (559x368x305mm)	12x22x14.5in (559x368x305mm)	12x22x14.5in (559x368x305mm)
Features			
Vertical Tracking Through Arc	✓	–	✓
Horizontal Tracking Through Arc	–	–	✓
Automatic Head Angle Adjustment	✓	✓	✓
Automatic Tilt Calibration with Tilt Adaptation	✓	✓	✓
Ambidextrous Design - Single Bug for Both Sides	✓	✓	✓

Zonal Weld Parameters (Position-Based Welding Allows Real-Time Weld Parameter Changes via a 3-Axis Accelerometer)	✓	✓	✓
Gas Control	–	✓	✓
Analog Interface	✓	✓	✓
Data Logging	✓	✓	✓
Data Logs via Excel	✓	✓	✓
XML Welding Parameters	✓	✓	✓
Pendant	✓	✓	✓
Mechanized Fillet (-30°/+45°)	✓	✓	✓
Wire types / welding processes			
Flux cored (FCAW-G)	–	✓	✓
Self-shielded flux cored (FCAW-S)	✓	–	✓
Metal cored (MCAW)	–	✓	✓
Solid Wire (GMAW)	–	–	✓
Pulsed MIG (GMAW-P)	–	–	✓
Lincoln Modified Waveform (STT)	–	–	✓