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Flexible Rail Welding & Cutting Carriage with Multi-Mode Oscillation Patterns

Ideal for Tanks, Vessels, Pipelines & Heavy Fabrication

Cruxweld **DynaFlex 100S** – Flexible Rail Welding & Cutting Carriage

Key Features

Flexible Track System: Adapts to both straight and curved welding or cutting paths – ideal for tanks, vessels, and pipes.

Universal Compatibility: Works seamlessly with MIG/MAG/TIG welding machines and plasma/oxyfuel cutting systems.

Precision Rack-and-Pinion Drive: Ensures consistent, uniform weld or cut quality.

Digital Speed Control: Maintains constant travel speed even under varying load conditions.

Adjustable Torch Holder: Offers precise control for torch angle, height, and standoff distance.

Magnetic Fixation: Quick setup without drilling or mechanical fixtures.

Oscillation Function: Allows multiple welding patterns for smoother, controlled weld seams.

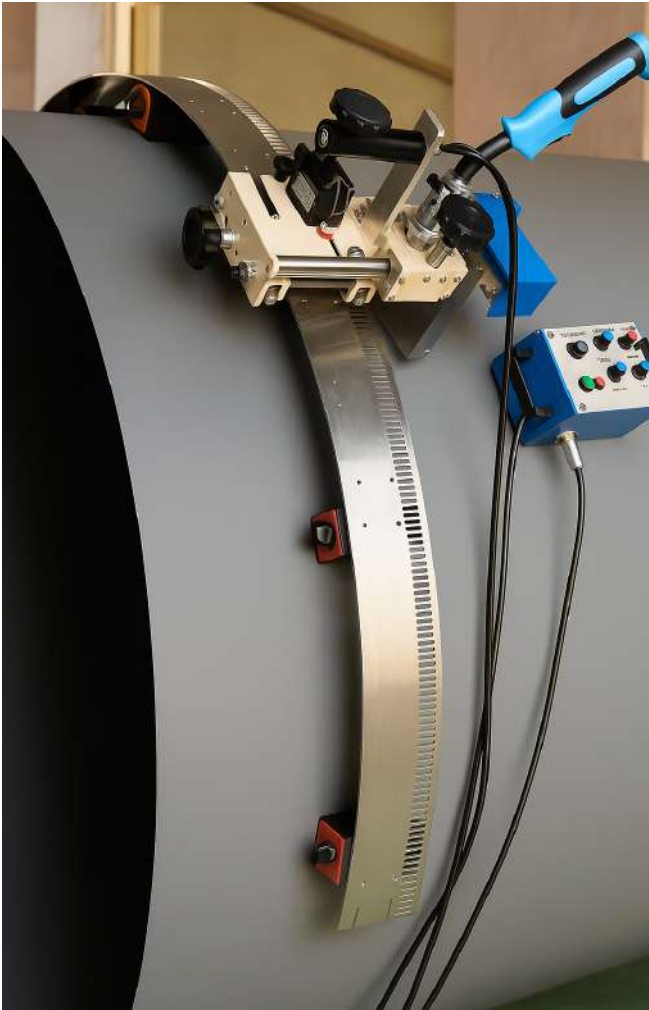
Remote Operation Ready: Allows connection to external handheld controller for ease of use in large tank or field applications.



Runs on Any Shape. Any Direction. Anywhere — Always Smooth.

Circular, straight, vertical, overhead — inside or outside, effortlessly.

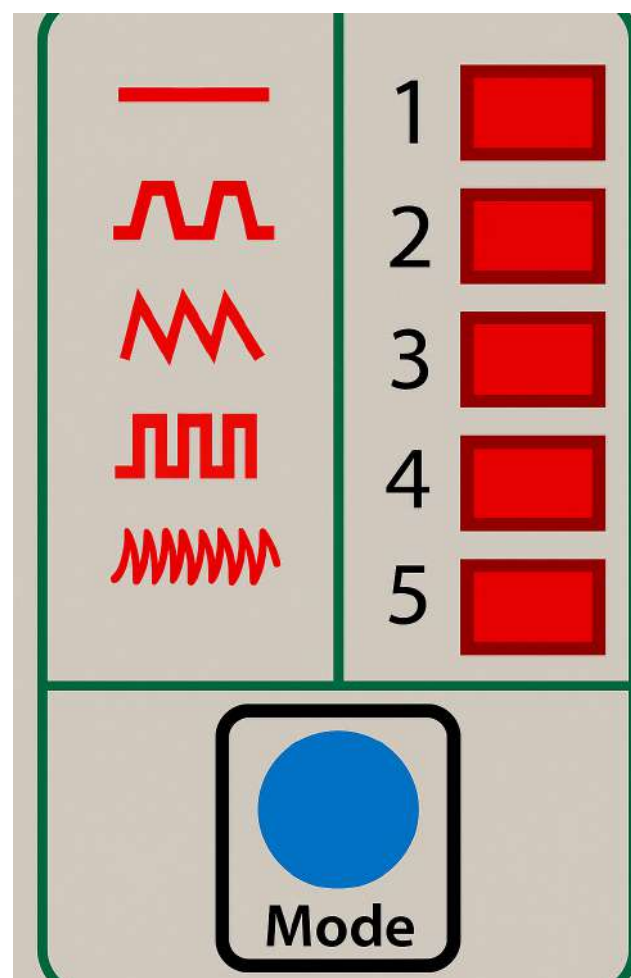
Parameter	Specification
Model	DynaFlex 100S
Input Voltage	1-Phase AC 220V $\pm 10\%$, 50/60 Hz
Drive Motor	DC motor with planetary gearbox
Travel Speed	0 – 1200 mm/min (variable)
Speed Control	PWM electronic digital controller
Welding/Cutting Process Compatibility	MIG / MAG / FCAW / TIG / Oxy-Fuel / Plasma Cutting
Welding Direction	Horizontal / Vertical / Circumferential
Torch Adjustment	$\pm 45^\circ$ horizontal, $\pm 15^\circ$ vertical
Oscillation Stroke	0 – 30 mm (servo-controlled)
Flexible Rail Segment Length	1800 mm (interconnectable)
Rail Mounting	6 sets of strong magnetic blocks per segment
Track Width	50 mm
Motor Output Torque	1.2 – 1.5 N·m (planetary reduction)
Travel Accuracy	$\pm 1\%$ deviation at set speed
Body Material	Aluminum alloy / steel composite
Rail Thickness	Approx. 2.0 – 2.5 mm (steel composite)
Power Consumption	≤ 50 W
Operating Temperature	$-10^\circ\text{C} - 45^\circ\text{C}$
Protection Rating	IP21
Optional Accessories	Torch oscillator, remote pendant, magnetic rail extension, wire feeder bracket
Travel Accuracy	$\pm 0.5\%$ deviation at set speed
Rail Segment Weight	3.8 – 4.2 kg per 1.8 m segment
Carriage Weight	10 kg
Carriage Dimensions (L×W×H)	320 × 220 × 250 mm



Oscillation / Weaving Modes (1–5)

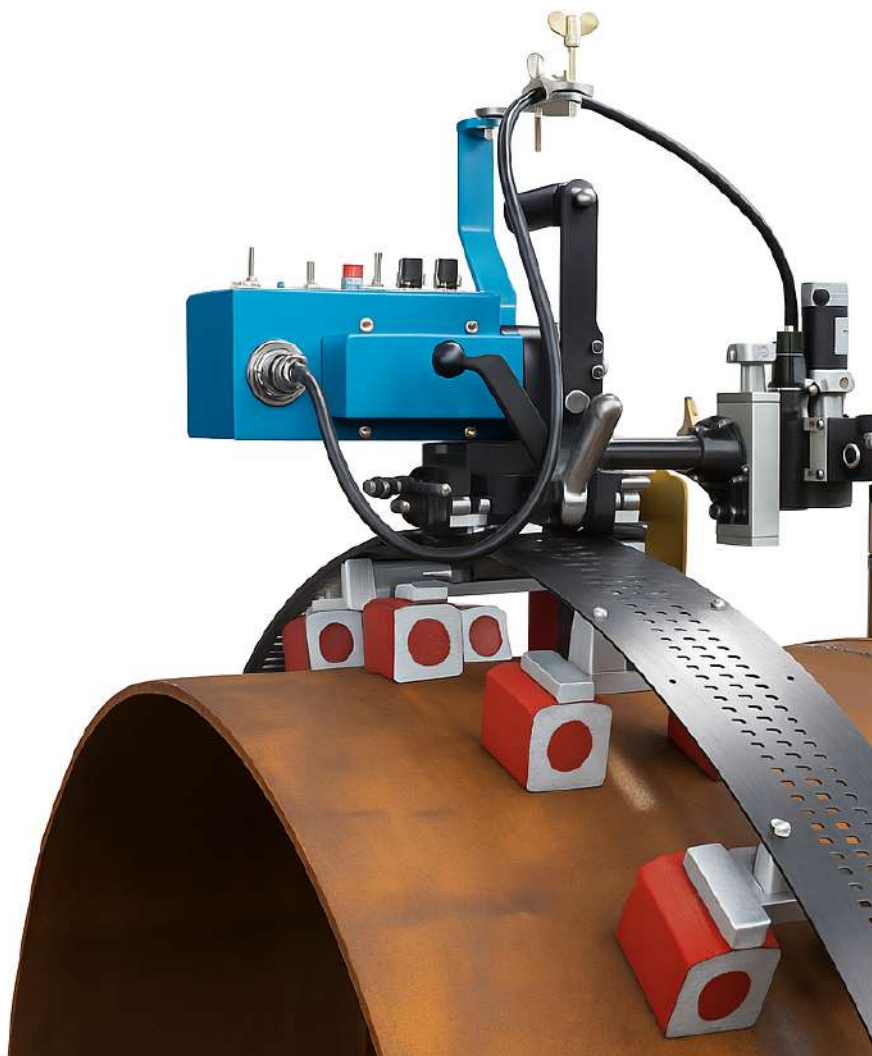
- 1. Straight Travel :** Torch moves in a straight line with no oscillation. Ideal for narrow joints and precise cutting/welding.
- 2. Square Wave Weave:** Sharp left–right movement for stable heat input and wider, flat weld beads.
- 3. Triangle Weave:** Zig-zag motion for root passes, thin materials, and controlled penetration.
- 4. Multi-Step Weave:** Stepped oscillation pattern for deep penetration and multi-pass welding.
- 5. High-Speed Wave:** Fast wavy movement for wide joints and smooth cap passes.

Mode Button: Selects oscillation pattern (1–5) with indicator LEDs.



Advanced Oscillation Control for Precision Welding & Cutting

Designed for Professionals. Built for Perfection.



Flexible Track Advantage

From straight joints to curved shells, inside or outside, horizontal or vertical — the flexible-track system keeps the torch steady on every path for flawless welds and cuts.

Engineered to handle large tanks, vessels, and curved structural surfaces, this system delivers **smooth and controlled travel** across long welding and cutting seams. Its flexible rail ensures **reliable movement** on any radius or contour, maintaining **exceptional stability** throughout operation. Built for demanding fabrication environments, it **enhances output quality** while **significantly reducing manual effort**, making every weld cleaner, faster, and more consistent.



For Circular, Straight & Complex Paths

This flexible-track carriage is engineered for far more than circular welding — it delivers **high-precision travel on straight joints, linear seams, vertical positions, and even overhead paths**. From curved shells to flat plates and long fabrication runs, it maintains **smooth, stable, and accurate torch movement** for both welding and

Key Applications

Widely used in storage tanks, pressure vessels, and heavy fabrication, this system delivers reliable performance on both straight and circumferential seams. Its versatility makes it ideal for shipbuilding, wind towers, cylindrical shells, and both oxy-fuel or plasma cutting on curved or flat surfaces. From rail cars and truck bodies to pipelines and onsite structural work, it ensures smooth travel and consistently accurate results across all applications.