CYLWELD CWM-500

AUTOMATIC DUAL-HEAD LPG CYLINDER CIRCUMFERENTIAL WELDING STATION

Doc ID: DS-CWM500-V1
Class: Industrial Pressure Vessel Mfg

CYLINDER DIAMETER	WELDING PROCESS	PRODUCTION OUTPUT	WALL THICKNESS
Ø 250 - 400 mm	Submerged Arc (SAW) / MAG	40 - 60 Cyl/hr	2.0 - 6.0 mm

SYSTEM OVERVIEW

The CylWeld CWM-500 is a heavy-duty, fully automated dual-head circumferential welding system engineered specifically for LPG, CNG, and refrigerant gas cylinder manufacturing lines. Featuring hydraulic automatic alignment, motorized spindle rotation, single/double wire Submerged Arc Welding (SAW) or MAG processes, and real-time seam tracking, it delivers X-ray grade, leak-proof longitudinal and circumferential welds compliant with international safety standards (ISO 4706, DOT-4BA, EN 1442).

MACHINE ARCHITECTURE & CIRCUMFERENTIAL JOINT SETUP

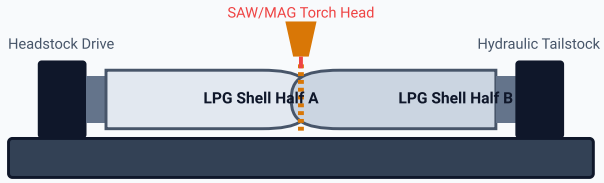


Figure 1: Dual-Half Shell Clamping & Central Circumferential Seam Welding System

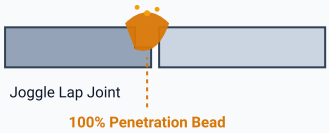


Figure 2: Joggled Lap Circumferential Weld Joint & Full Penetration Bead Structure

TECHNICAL SPECIFICATIONS

PARAMETER	SPECIFICATION LIMIT	OPERATIONAL NOTES
Cylinder Diameter Range	Ø 250 mm – Ø 400 mm (Custom up to 600 mm)	Adjustable centering V-block supports
Cylinder Length Capability	400 mm – 1300 mm	Hydraulic stroke tailstock for fast loading
Plate Thickness Range	2.0 mm – 6.0 mm (Deep drawing steel)	HP295, HP325, SG255, or equivalent grade steel
Welding Speed	500 – 1200 mm/min (Stepless variable)	AC inverter / DC servo spindle drive control
Welding Power Source	500A / 630A Inverter SAW or Heavy MAG	100% Duty cycle under continuous operation
Seam Tracking & Guidance	Laser Line Vision / Mechanical Tactile Sensor	Real-time height and transverse arc positioning
Flux Recovery System (SAW)	Automated Vacuum Suction & Pre-Heater Hopper	Recirculates unused flux with temperature drying
Air & Hydraulic Pressure	Pneumatic: 0.6 MPa | Hydraulic: 10 MPa	Integrated hydraulic power unit (HPU) included

AUTOMATION & QUALITY CONTROL FEATURES

Hydraulic Self-Centering Clamping

High-rigidity headstock and hydraulic tailstock automatically lock and align the two deep-drawn cylinder halves to eliminate axial offset prior to torch ignition.

Automatic Flux Feed & Recovery

Integrated closed-loop vacuum hopper preheats Submerged Arc flux to prevent porosity and automatically recycles unused granular flux into the primary hopper.

Real-Time Laser Seam Tracking

Optical laser displacement sensors scan the circumferential joint in real time, automatically compensating for minor shell ovality or axial tolerance variations.

Programmable PLC Control System

Siemens PLC with 10" color touchscreen allows one-touch recipe selection for 5kg, 12kg, 15kg, and 50kg cylinder standards with full cycle data logging.

PRODUCTION OUTPUT & COMPLIANCE STANDARDS

CYLINDER SPECIFICATION	CYCLE TIME / UNIT	QUALITY ASSURANCE STANDARD
12 kg Domestic LPG Cylinder (Ø 320 mm × 3.0 mm)	~ 50 seconds	ISO 4706 / EN 1442 / DOT-4BA X-Ray Pass
15 kg Commercial LPG Cylinder (Ø 355 mm × 3.2 mm)	~ 58 seconds	Hydrostatic Pressure Test up to 30 bar
50 kg Industrial Gas Cylinder (Ø 400 mm × 4.5 mm)	~ 85 seconds	100% Ultrasonic & Radiographic Defect-Free