

COMMANDER 500

Welding Machine

Introduction

The **ARC 500 COMMANDER Welding Machine** is a high-performance heavy-duty IGBT module-based inverter welder. Designed for industrial applications, it features an inbuilt **Voltage Reduction Device (VRD)**, reducing welding voltage to a safe level (<36V) when the arc strikes from 89V. This innovation prevents electrode sticking and ensures instant arc strikes, delivering superior performance and safety.

Key Features

- Advanced IGBT Technology:**
 - Equipped with a robust **IGBT control system** for stable and efficient operation.
 - Delivers smooth and reliable welding performance with high arc stiffness.
- Inbuilt Voltage Reduction Device (VRD):**
 - Welding voltage reduces to <36V after arc striking to prevent electrode sticking.
 - Ensures operator safety and enhanced welding precision.
- High Efficiency and Power:**
 - Rated current up to **500A** with a wide current range of **50A to 500A**.
 - Rated Duty Cycle:** 100% at 390A, 60% at 500A, enabling continuous operation for demanding tasks.
- User-Friendly Design:**
 - Adjustable knobs for precise output control.
 - Compact and lightweight design for easy mobility and setup.
- Industrial Durability:**
 - Designed for a wide range of materials, including carbon steel, cast iron, stainless steel, copper, and alloys.
 - Enclosure protection class **IP21S** for reliable performance in tough environments.
- Energy-Efficient:**
 - Achieves efficiency $\geq 85\%$, reducing energy consumption.
 - High power factor ($\text{COS}\phi = 0.99$) ensures optimal energy utilization.



Technical Specifications

Parameter	Unit	ARC 500 COMMANDER
Output		
No-load Voltage	V	76
Working Voltage	V	22-40
Rated Welding Current	A	500
Current Range	A	50-500
Rated Duty Cycle	%	100% @ 390A / 60% @ 500A
Input		
Phases	Phase	3
Frequency	Hz	50/60
Supply Voltage	V	415
Rated Input Current	A	26
Maximum Effective Input Current	A	20
Rated Input Capacity	kVA	24
Efficiency	%	≥85%
Power Factor (COSφ)		0.99
Protection and Build		
Insulation Class		H
Protection Class		IP21S
Weight	kg	25
Dimensions (L×W×H)	mm	510 × 250 × 483

Applications

- **Industrial Fabrication:** Welding for large-scale fabrication projects.
- **Construction:** Ideal for structural welding in construction sites.
- **Heavy Equipment Repair:** Reliable for maintenance and repairs.
- **Pipeline Welding:** Suitable for demanding pipeline construction and repair tasks.
- **Benefits**
 - **Enhanced Arc Strength:** Superior arc stiffness for cleaner and stronger welds.
 - **Safety-Driven Design:** VRD minimizes risk during operation, ensuring user safety.
 - **Cost-Effective:** High efficiency and reduced energy consumption lower operational costs.
 - **Durability:** Designed for rugged industrial use with advanced protection features.

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