

Excellent Compressor GS91AZ 1/3 HP R134a 9.1cc

Category: Refrigeration

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Mbsmpro, Compressor, GS91AZ, 1/3 HP, R134a, 9.1 cc, 220V 50Hz, LBP, Cooling & Freezing

In the demanding world of domestic and light commercial refrigeration, reliability and heat-exchange efficiency are the primary benchmarks for selecting a hermetic compressor.

The **Excellent Compressor GS91AZ** has established itself as a robust solution for engineers and technicians looking for a durable replacement in various cooling appliances. Designed specifically for Low Back Pressure (LBP) applications, this reciprocating unit balances power and energy savings, making it a staple in the high-performance cooling sector.

The core strength of the GS91AZ lies in its internal construction. Unlike cheaper alternatives that might use aluminum-clad wiring, this model is built with **100% high-grade copper windings**. This structural choice ensures superior thermal conductivity and a longer lifespan, significantly reducing the risk of winding burnout during prolonged operation or high ambient temperature conditions.

With a displacement of **9.1 cc**, it provides the necessary torque to maintain stable pressures in medium-to-large-sized household refrigerators and vertical freezers.

Technical Specifications and Performance Data

The following table provides a detailed breakdown of the characteristic features of the GS91AZ model, ensuring field workers have the precise data required for installation and repair.

Parameter	Technical Specification
Model	GS91AZ
Utilization (LBP/MBP/HBP)	LBP (Low Back Pressure)
Primary Domain	Freezing and Deep Cooling
Oil Type and Quantity	POE (Polyolester) / 280 ml - 300 ml
Horsepower (HP)	1/3 HP
Refrigerant Type	R134a
Power Supply	220V - 240V / 50Hz
Cooling Capacity (BTU/h)	Approx. 780 - 820 BTU/h (at ASHRAE LBP)
Motor Type	RSIR (Resistance Start - Induction Run)
Displacement	9.1 cc
Winding Material	100% High-Conductivity Copper

Pressure Charge	Suction: 0.5 to 1.5 bar (Application Dependent)
Capillary Tube Size	0.036" to 0.042" (Length varies by appliance)
Compatible Appliances	Large 2-door Fridges, Chest Freezers, Water Coolers
Function Temperature	-35°C to -10°C
Cooling Method	Static or Fan Assisted (depending on housing)
Market Segment	Professional / Light Commercial
Operational Amperage	1.1 A to 1.4 A
LRA (Locked Rotor Amps)	14.5 A to 16 A
Starting Relay Type	PTC Relay or Current Relay
Capacitor Requirement	Usually none (RSIR), optional start cap for high torque

Compressor Replacement Cross-Reference

Choosing the right replacement is critical for system balance. Below are verified equivalents based on displacement and gas type.

5 Compressor Replacements (Same R134a Gas):

- Secop (Danfoss):** GL90AA (9.09 cc)
- Embraco:** FFI10HBK / FF10HBK
- ZMC:** GM90AZ
- Tecumseh:** AE1390Y
- Wanbao / Huayi:** QD91

5 Compressor Replacements (Alternative Refrigerants - System Flush Required):

- R600a Equivalent:** NLE9KK (Secop)
- R600a Equivalent:** EMT2125GK (Embraco)
- R290 Equivalent:** NEK2134U (Embraco - High Pressure adjustment required)
- R1234yf Equivalent:** YF9.0GY
- R404A Equivalent:** ML90FB (LBP specific conversion)

Comparative Analysis: GS91AZ vs. Industry Standards

To understand the positioning of the GS91AZ, it is essential to compare it with leading industry models of similar displacement.

Model	Displacement	Refrigerant	COP	Typical HP
Excellent GS91AZ	9.1 cc	R134a	1.25	1/3 HP
Secop GL90AA	9.09 cc	R134a	1.32	1/4 HP+
Embraco FF8.5HBK	7.95 cc	R134a	1.28	1/4 HP
ZMC GM90AZ	9.0 cc	R134a	1.20	1/3 HP

While the GS91AZ maintains a slightly lower COP (Coefficient of Performance) of 1.25 compared to some high-end Secop models, it offers a more aggressive displacement-to-price-performance ratio in

the 1/3 HP segment. This makes it an ideal choice for regions with fluctuating voltages where rugged copper windings provide a crucial safety margin against electrical stress.

Electrical Schema and Wiring Configuration

For a standard RSIR (Resistance Start Induction Run) setup, the electrical connection is straightforward but requires precision. The compressor features three terminals: **Common (C)**, **Start (S)**, and **Run (R)**.

1. **Protector (Overload)**: Connected directly to the **Common (C)** terminal.
2. **Relay (PTC/Current)**: Plugged onto the **Run (R)** and **Start (S)** terminals
3. **Power Input**:
 - **Line (L)** goes to the Thermal Overload Protector.
 - **Neutral (N)** goes to the main terminal of the Relay (Run side).

Note: In cases where a start capacitor is required for high-torque starts, it is wired in series with the start terminal through the relay contacts.

Installation Advice and Best Practices

- **Vacuuming**: Always perform a deep vacuum (at least 500 microns) to remove moisture. R134a systems are highly sensitive to humidity, which can lead to acid formation in the POE oil.
- **Oil Maintenance**: If a system has suffered a burnout, the condenser and evaporator must be flushed. Residual acid will contaminate the fresh POE oil in the new GS91AZ, leading to premature failure.
- **Filter Drier**: Never reuse a filter drier. Always install a new XH-9 or equivalent drier to protect the 9.1 cc displacement valve plate from debris.

Focus Keyphrase: Excellent Compressor GS91AZ 1/3 HP R134a 9.1cc High Performance Refrigeration Unit

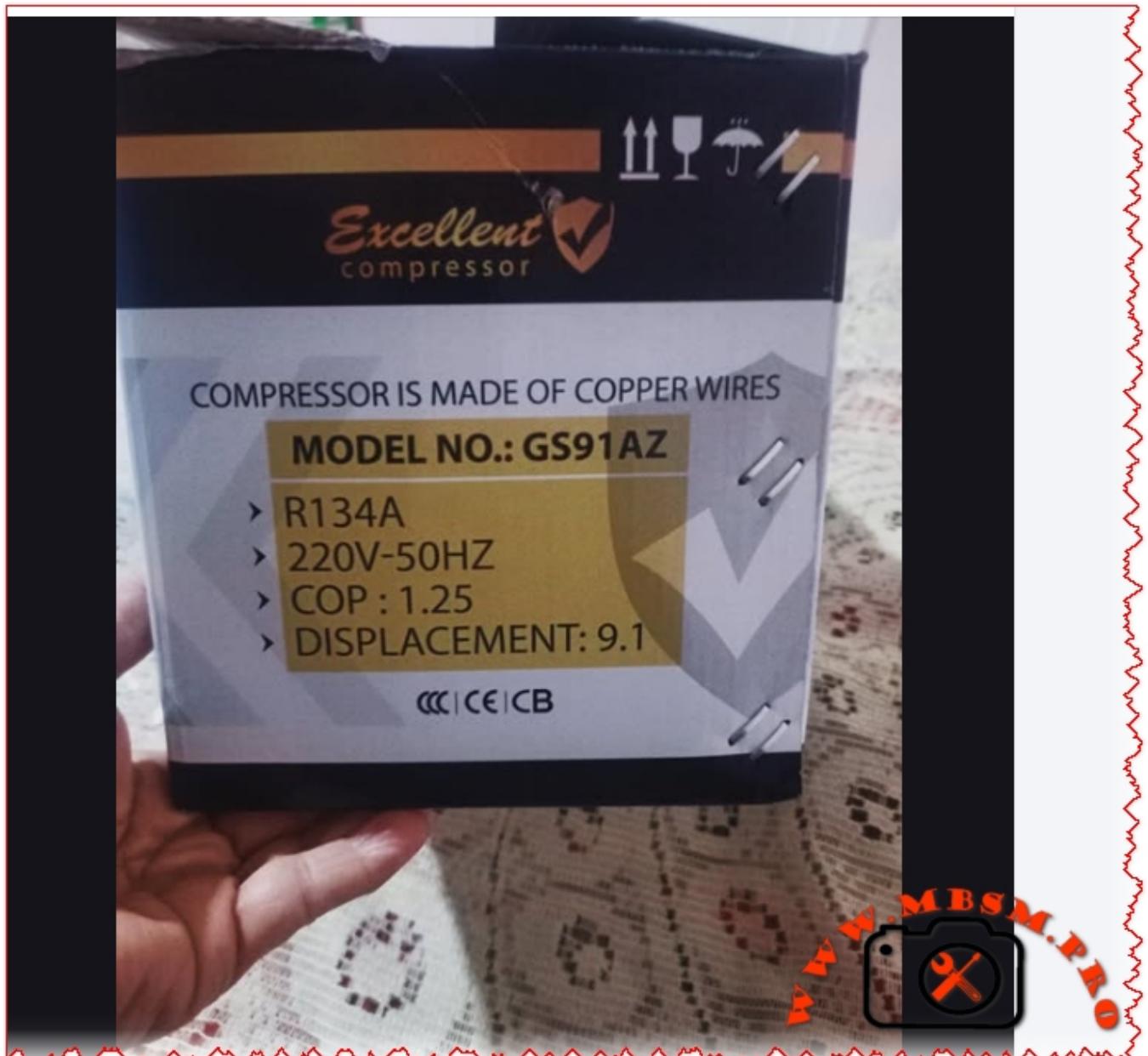
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Meta Description: Discover the technical specifications of the Excellent Compressor GS91AZ. A 1/3 HP, R134a reciprocating unit with 9.1cc displacement and copper windings for superior cooling.

Slug: excellent-compressor-gs91az-1-3hp-r134a-specifications

Tags: GS91AZ, Excellent Compressor, R134a, 1/3 HP, 9.1cc, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, Refrigeration, LBP Compressor, Fridge Repair, Copper Winding Compressor

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