

# Excellent Compressor GS91AZ 1/3 HP R134a 9.1cc

Category: Refrigeration  
written by [www.mbsmpro.com](http://www.mbsmpro.com) | January 18, 2026



## 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

<b>Pressure Charge</b>	Suction: 0.5 to 1.5 bar (Application Dependent)
<b>Capillary Tube Size</b>	0.036" to 0.042" (Length varies by appliance)
<b>Compatible Appliances</b>	Large 2-door Fridges, Chest Freezers, Water Coolers
<b>Function Temperature</b>	-35°C to -10°C
<b>Cooling Method</b>	Static or Fan Assisted (depending on housing)
<b>Market Segment</b>	Professional / Light Commercial
<b>Operational Amperage</b>	1.1 A to 1.4 A
<b>LRA (Locked Rotor Amps)</b>	14.5 A to 16 A
<b>Starting Relay Type</b>	PTC Relay or Current Relay
<b>Capacitor Requirement</b>	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):**

- 1. **Secop (Danfoss):** GL90AA (9.09 cc)
- 2. **Embraco:** FFI10HBK / FF10HBK
- 3. **ZMC:** GM90AZ
- 4. **Tecumseh:** AE1390Y
- 5. **Wanbao / Huayi:** QD91

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

- 1. **R600a Equivalent:** NLE9KK (Secop)
- 2. **R600a Equivalent:** EMT2125GK (Embraco)
- 3. **R290 Equivalent:** NEK2134U (Embraco - High Pressure adjustment required)
- 4. **R1234yf Equivalent:** YF9.0GY
- 5. **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
<b>Excellent GS91AZ</b>	9.1 cc	R134a	1.25	1/3 HP
<b>Secop GL90AA</b>	9.09 cc	R134a	1.32	1/4 HP+
<b>Embraco FF8.5HBK</b>	7.95 cc	R134a	1.28	1/4 HP
<b>ZMC GM90AZ</b>	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

- **Vacuumping**: 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.

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

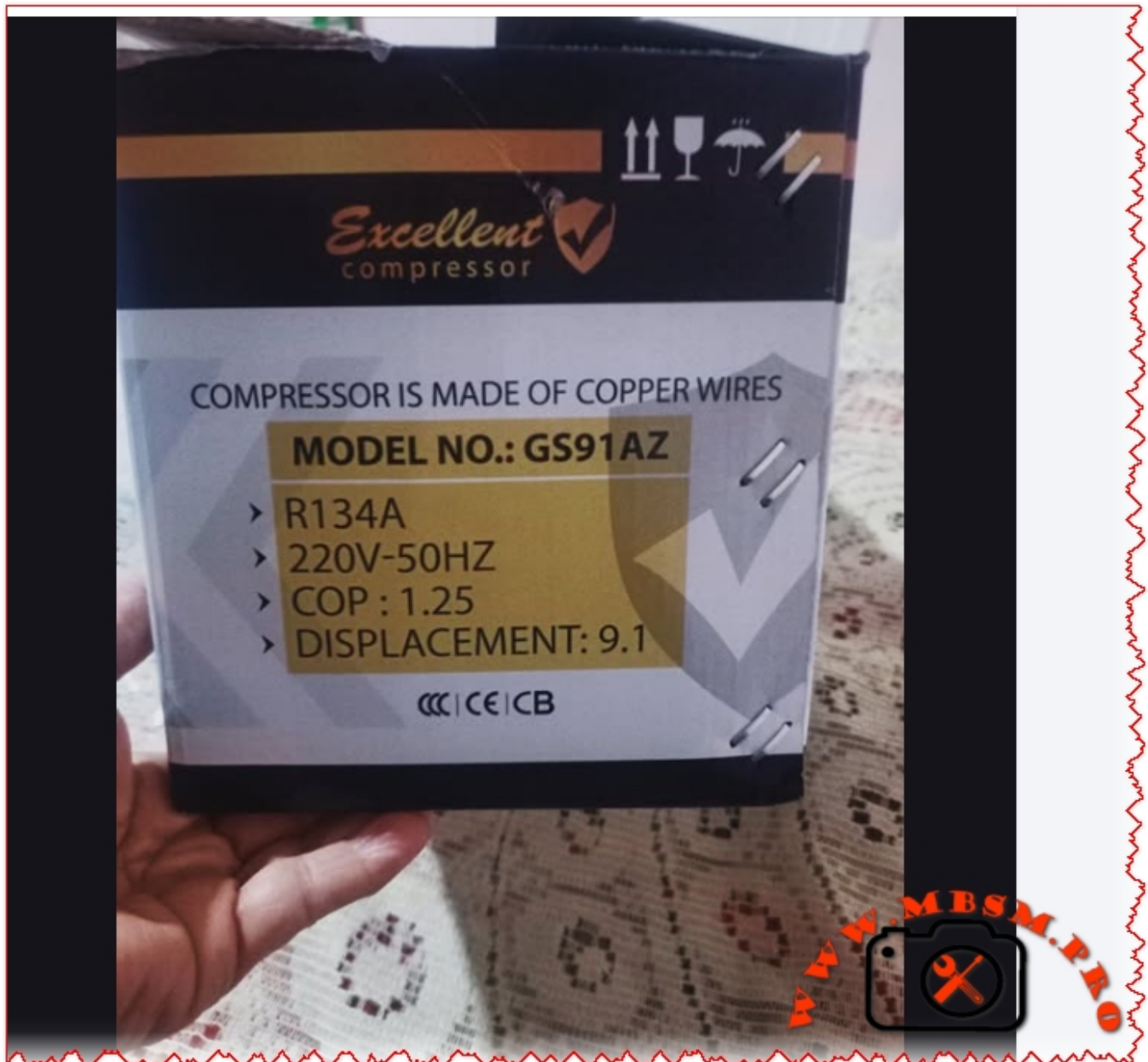
**SEO Title:** Mbsm.pro, Compressor, GS91AZ, 1/3 HP, R134a, 9.1 cc, 220V 50Hz, LBP, High Reliability

**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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