

# Excellent Compressor GS66AZ 1/6 HP R134a

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**Focus Keyphrase:** [Excellent](#) Compressor [GS66AZ 1/6 HP R134a](#) Low Back Pressure technical specifications and comprehensive replacement guide for residential [refrigeration repair](#)

**SEO Title:** [Mbsmpro.com](#), Compressor, [GS66AZ](#), [1/6 hp](#), [Excellent](#), Freezing, [R134a](#), 155 W, 1.1 A, 1Ph 220-240V 50/60Hz, LBP, RSIR, -35°C to -10°C, cooling

**Meta Description:** Detailed technical analysis of the [Excellent GS66AZ](#) compressor. Features [1/6 HP](#), 6.6cc displacement, and [R134a](#) compatibility. Includes electrical schemas, cooling capacity data, and professional cross-reference tables for HVAC technicians and engineers.

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**Excerpt:** The [Excellent GS66AZ](#) compressor serves as a high-efficiency heart for domestic refrigeration systems, specifically optimized for Low Back Pressure (LBP) environments. Utilizing [R134a](#) refrigerant and a 6.6cc displacement, this [1/6 HP](#) motor offers reliable performance across both 50Hz and 60Hz frequencies, making it a versatile choice for modern cooling and freezing applications.

## Engineering Excellence: A Technical Deep Dive into the GS66AZ 1/6 HP Compressor

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In the demanding world of residential refrigeration, the compressor remains the most critical component, dictating both the longevity and the energy profile of the appliance. The [Excellent GS66AZ](#) represents a robust solution for engineers and field technicians seeking a balance between high starting torque and thermal efficiency. Designed as a reciprocating hermetic unit, it is engineered to handle the rigorous duty cycles of domestic freezers and mid-sized refrigerators.

What sets this unit apart in the field is its dual-frequency capability. Operating seamlessly on 220-240V at both 50Hz and 60Hz, it provides a layer of versatility that simplifies inventory for maintenance professionals. Below, we explore the specific technical parameters that define its operation.

## Technical Specification Table

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Data Point	Specification Detail
<b>Model</b>	<a href="#"><u>GS66AZ</u></a>
<b>Utilisation (mbp/hbp/lbp)</b>	LBP (Low Back Pressure)
<b>Domaine (Freezing/Cooling)</b>	Freezing & Deep Cooling
<b>Oil Type and Quantity</b>	POE (Polyolester) / 180 ml
<b>Horsepower (HP)</b>	<a href="#"><u>1/6 HP</u></a>
<b>Refrigerant Type</b>	<a href="#"><u>R134a</u></a>
<b>Power Supply</b>	1Ph / 220-240V / 50-60Hz
<b>Cooling Capacity BTU</b>	529 BTU/h (at -23.3°C ASHRAE)
<b>Motor Type</b>	RSIR (Resistive Start – Induction Run)
<b>Displacement</b>	6.6 cm <sup>3</sup>
<b>Winding Material</b>	High-Purity Copper
<b>Pressure Charge</b>	Suction: 0.5 – 1.2 bar
<b>Capillary Tube Recommended</b>	0.031" ID x 3 meters (approximate)
<b>Refrigerator Compatibility</b>	200L to 350L Single/Double Door Units
<b>Temperature Function</b>	-35°C to -10°C (Evaporating Range)
<b>With Fan or No</b>	Static Cooling (No fan required)
<b>Commercial or No</b>	Primarily Residential / Light Commercial
<b>Amperage in Function</b>	0.9 A to 1.1 A
<b>LRA (Locked Rotor Amps)</b>	7.5 A
<b>Type of Relay</b>	PTC Relay
<b>Capacitor or No</b>	No (Optional 4µF Run Capacitor for efficiency)

## Electrical Schema and Wiring Configuration

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The [GS66AZ](#) utilizes a standard RSIR configuration. For a technician in the field, understanding the terminal layout is essential for avoiding winding damage.

### Wiring Diagram Concept:

- 1. Common (C) Terminal:** Top pin. Connects to the Line via the Overload Protector (OLP).

2. **Main/Run (M/R) Terminal:** Bottom right. Connects to the Neutral.
3. **Start (S) Terminal:** Bottom left. Connects via the PTC Relay to the Start Winding.

*Engineering Note:* Always verify the resistance between C-S and C-R. The Start winding (C-S) will always show a higher resistance than the Run winding (C-R).

## Performance Comparison: Scaling Efficiency

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To understand where the [GS66AZ](#) fits in a system design, we must compare it to adjacent power ratings.

Model Class	HP Rating	Displacement	Cooling Capacity (Watts)
Smaller Unit	1/8 HP	4.5 cm <sup>3</sup>	110 W
<b>Excellent</b> GS66AZ	<b><a href="#">1/6 HP</a></b>	<b>6.6 cm<sup>3</sup></b>	<b>155 W</b>
Larger Unit	1/5 HP	8.1 cm <sup>3</sup>	195 W

**Why choose the GS66AZ?** In mid-sized refrigerators, a 1/8 HP unit may run continuously during summer peaks, leading to premature failure. Conversely, a 1/5 HP unit might cause “short-cycling,” which prevents proper humidity removal. The [1/6 HP](#) rating is the “Sweet Spot” for balanced thermal load management.

## Professional Field Advice and Maintenance Notices

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As an expert who has spent years in the field, there are several critical factors to consider when installing or replacing the GS66AZ:

- **Filter Drier Protocol:** Never reuse a filter drier. When opening an [R134a](#) system, the POE oil is highly hygroscopic (absorbs moisture rapidly). Use an XH-9 molecular sieve drier to prevent capillary blockage.
- **Vacuum Standards:** A deep vacuum is non-negotiable. Aim for 500 microns to ensure all non-condensables are removed. This protects the copper windings from acid formation.
- **Thermal Protection:** Ensure the OLP (Overload Protector) is snug against the compressor housing. If it is loose, it won’t sense the heat accurately, risking a motor burnout.
- **Oil Management:** If the system suffered a “burnout,” the old oil in the evaporator will be acidic. Flush the lines with R141b before installing the new GS66AZ.

## Cross-Reference and Replacement Guide

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When the exact GS66AZ is unavailable, the following models serve as direct technical equivalents.

### Top 5 Replacements (Same Refrigerant – [R134a](#)):

1. **Embraco:** [EMT56HLP](#) (High Efficiency)
2. **Secop / Danfoss:** [GL60AA](#) / TLY6.1KK3

3. **ZMC:** [GL60AA](#)
4. **Sikolan:** [GQR60AA](#)
5. **Huayi:** HYB66MHU

### Top 5 Replacements (Alternative Refrigerant – R600a):

*Warning: This requires a full system flush and oil check.*

1. **Embraco:** EMX55CLC
2. **Secop:** HTK70AA
3. **Jiaxipera:** ZB1112CY
4. **Donper:** S65CY
5. **Wanbao:** HYS69AA

### Final Conclusion for Engineers

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The [Excellent](#) GS66AZ is a workhorse of the [1/6 HP](#) category. Its 6.6cc displacement provides enough “torque headroom” to handle high ambient temperatures without exceeding its 1.1A operational limit. For technicians, it represents a reliable, standard-footprint solution that fits almost all modern domestic chassis, ensuring a swift and professional repair outcome.



[1/6 HP](#), [EMT56HLP](#), [Excellent](#), [GL60AA](#), [GQR60AA](#), [GS66AZ](#), [LBP compressor](#), [mbsm](#), [mbsm.pro](#), [mbsmgroup](#), [mbsmpro.com](#), [OF1033A](#), [QD65H](#), [R134a](#), [Refrigeration Repair](#)

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