

ZMC EGM77AA1 and Daewoo HSL25YE-5 Compressor Comparison and Technical Specifications

Category: Refrigeration

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Focus Keyphrase: ZMC EGM77AA1 and Daewoo HSL25YE-5 Compressor Comparison and Technical Specifications

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Meta Description: Explore the technical breakdown of the ZMC EGM77AA1 and Daewoo HSL25YE-5 compressors. Learn about cooling capacities, HP ratings, and the best R134a replacements for professional refrigeration repair.

Slug: zmc-egm77aa1-vs-daewoo-hsl25ye-5-compressor-specs

Tags: Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, EGM77AA1, HSL25YE-5, ZMC, Daewoo, R134a, 1/4 HP Compressor, Refrigerator Repair, GL90AA, EMT6170Z, GPY12AA, LBP Compressor, Compressor Replacement.

Excerpt: When a refrigerator stops cooling, the heart of the problem is often the compressor. Understanding the differences between the ZMC EGM77AA1 and the Daewoo HSL25YE-5 is vital for any technician. These R134a units are staples in the industry, offering reliable low back pressure performance for domestic and light commercial cooling systems worldwide.

Technical Specification Comparison

Feature	ZMC EGM77AA1	Daewoo HSL25YE-5
Model	EGM77AA1	HSL25YE-5
Utilisation	LBP (Low Back Pressure)	LBP (Low Back Pressure)
Domaine	Freezing / Cooling	Freezing / Cooling
Cooling Wattage (-23.3°C)	~182 W	~195 W
Cubic Feet Capacity	14 – 18 cu.ft.	16 – 20 cu.ft.
Litres Capacity	400 – 500 L	450 – 550 L
Kcal/h	156 kcal/h	168 kcal/h
TON	0.052 TR	0.055 TR
Oil Type and Quantity	Ester (POE) / 180ml	Ester (POE) / 200ml
Horsepower (HP)	1/4 HP	1/4 HP+ (Powerful 1/4)
Refrigerant Type	R134a	R134a
Power Supply	220-240V / 50Hz	220-240V / 50Hz
Cooling Capacity BTU	621 BTU/h	665 BTU/h
Motor Type	RSIR / RSCR	RSIR
Displacement	7.69 cc	8.1 cc
Winding Material	Copper	Copper
Pression Charge	0.5 – 1.2 Bar (Suction)	0.6 – 1.2 Bar (Suction)
Capillary Recommendation	0.031" / 3.0m	0.036" / 3.0m
Refrigerator Type	No-Frost Double Door	Large Side-by-Side / Chest Freezer
Temperature Function	-35°C to -10°C	-35°C to -10°C
Fan Requirement	Static (No Fan needed)	Static or Fan cooled
Commercial Application	Light Commercial / Domestic	Light Commercial / Domestic
Amperage (Running)	1.1 A	1.3 A
LRA (Locked Rotor Amp)	9.0 A	8.4 A
Relay Type	PTC	PTC
Capacitor	Optional (4-5 µF)	Usually No
Origin	Egypt (ZMC)	Korea (Daewoo)

Efficiency Metrics (COP) – Performance Data

Measured for R134a LBP Applications

Evaporating Temp (°C)	Cooling Capacity (Watts)	Power Consumption (Watts)	COP (W/W)
-30	115	118	0.97
-25	165	135	1.22
-23.3 (Standard)	182	142	1.28
-20	215	155	1.38
-15	285	175	1.63
-10	370	198	1.87
0	510	240	2.12
4	590	265	2.23

Evaporating Temp (°C)	Cooling Capacity (Watts)	Power Consumption (Watts)	COP (W/W)
10	720	305	2.36

Compressor Replacements (Cross-Reference)

5 Replacements in same Refrigerant (R134a):

1. **Embraco:** EMT6170Z (1/4 HP)
2. **Secop/Danfoss:** TL5G (1/4 HP)
3. **Cubigel:** GPY12AA (High Efficiency 1/4)
4. **Huayi:** HYE69YG
5. **Jiaxipera:** ND1114GZ

5 Replacements in Alternative Refrigerant (R600a):

(Note: Requires system flush and capillary adjustment)

1. **Embraco:** EMX70CLC
 2. **Secop:** BD35K
 3. **ZMC:** HTK80AA
 4. **Jiaxipera:** N1113Y
 5. **Donper:** L76CZ1
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Mastering Low Back Pressure Systems: A Deep Dive into the EGM77AA1 and HSL25YE-5

In the world of professional refrigeration, selecting the right motor for the job isn't just about fitting a black box into a chassis; it's about understanding the thermodynamics that keep food fresh and customers happy. Today, we are looking at two heavyweight contenders in the 1/4 HP segment: the **ZMC EGM77AA1** and the **Daewoo HSL25YE-5**.

Engineering the Perfect Cool

The ZMC EGM77AA1 is a staple of Egyptian manufacturing under European licensing, known for its incredible resilience in high-ambient temperatures. It utilizes a 7.69cc displacement, making it ideal for standard 400-liter household refrigerators. Its counterpart, the Daewoo HSL25YE-5, comes from a lineage of Korean engineering that prioritizes torque. With an 8.1cc displacement, the Daewoo often feels "punchier," recovering temperatures faster after the fridge door has been opened frequently.

Why Displacement Matters

While both are classified as 1/4 HP, the slight edge in displacement for the Daewoo unit (8.1cc vs 7.69cc) allows it to move a higher volume of R134a gas per stroke. This translates to a slightly higher BTU output. If you are replacing a compressor in a large "No-Frost" unit that includes a heavy ice-maker load, the Daewoo HSL25YE-5 is often the sturdier choice. However, the ZMC unit is legendary for its "quiet" run cycle, making it a favorite for indoor kitchen

environments where decibel levels matter.

Professional Advice for Field Technicians

- **The Vacuum is Key:** When working with R134a and POE (Polyolester) oils, moisture is your greatest enemy. These oils are highly hygroscopic (they soak up water). Always ensure a vacuum of at least 500 microns before charging.
- **Capillary Match:** If you are swapping a ZMC for a Daewoo, verify the capillary tube. Since the Daewoo has a slightly higher displacement, a restrictive capillary can lead to high head pressure.
- **Starting Components:** Always replace the PTC relay and the overload protector when installing a new unit. Reusing old components on a new compressor is a recipe for a callback.

The Verdict

Both of these compressors represent the peak of R134a domestic technology. The ZMC EGM77AA1 is the “reliable workhorse” for standard configurations, while the Daewoo HSL25YE-5 is the “high-performance” variant for larger, more demanding cooling loads. By matching the displacement and the BTU requirements accurately, you ensure the longevity of the appliance and the satisfaction of the end-user.



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1/4 HP Compressor, Daewoo, EGM77AA1, EMT6170Z, GL90AA, GPY12AA, HSL25YE-5, LBP compressor, mbsm, mbsm.pro, mbsmgroup, mbsmpro.com, R134a, Refrigerator Repair, ZMC



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