Compressor, HUAYI, HYS55, HYS60, HYE81, HYE90, 1/6 hp, 1/5 hp, 1/4 hp, LBP, R134a, R600a

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Focus Keyphrase

HUAYI Refrigerator Compressor Technical Specifications HYS45 HYS55 HYS60 HYS69 HYE81 HYE90 HY113 HY131 HY153 LBP R134a R600a

SEO Title

Mbsmpro, Compressor, HUAYI, HYS55, HYS60, HYE81, HYE90, 1/6 hp, 1/5 hp, 1/4 hp, LBP, R134a, R600a

Meta Description

Professional technical guide for HUAYI compressors. Detailed data for HYS and HYE series, including HP, cooling capacity, and equivalents. Expert analysis for HVAC technicians.

Slug

huayi-compressor-hys-hye-series-technical-data-replacement

Tags

Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, HUAYI, HYS45, HYS55, HYS60, HYS69, HYE81, HYE90, HY113, HY131, HY153, ACC GVY57AA, Secop TLY8.7KK, Embraco EMT6170Z, Danfoss TLS6F, Samsung SD162, LG MA57LAJG, Panasonic QB66C13GAX5, Cubigel GL60AA, Donper LU111CY

Excerpt

The HUAYI compressor lineup, featuring the HYS and HYE series, is a cornerstone in modern domestic refrigeration. These Low Back Pressure units utilize R134a and R600a refrigerants to provide efficient cooling for household freezers and refrigerators. Designed for durability and high performance, they offer professional-grade solutions for various cooling capacities from 1/10 to 1/3 horsepower.

Technical Data Sheet: HUAYI Compressor Series

Feature	Detailed Specification
Model	HUAYI HYS/HYE Series (e.g., HYS60, HYE90)
Utilisation (mbp/hbp/lbp)	LBP (Low Back Pressure)
Domaine (Freezing/Cooling)	Freezing / Deep Cooling
Oil Type and Quantity	POE/Mineral (160ml – 220ml depending on model)
Horsepower (HP)	1/10 HP to 1/3 HP
Refrigerant Type	R134a (HYS) / R600a (HYE)
Power Supply	1Ph / 220-240V / 50Hz
Cooling Capacity BTU	380 – 800 BTU/h (Range across models)
Motor Type	RSIR / RSCR
Displacement	4.5 cm^3 to 15.3 cm^3
Winding Material	High-Quality Copper
Pression Charge	0.5 – 1.2 Bar (Suction Side)
Capillary	0.026″ to 0.031″ (Application dependent)
Refrigerator Models	Samsung, LG, Whirlpool, Beko, and Generic brands
Temperature Function	-35°C to -10°C
With Fan or No	Static Cooling (No fan required for most)
Commercial or No	Domestic / Light Commercial
Amperage in Function	0.6A – 1.3A
LRA (Locked Rotor Amps)	5.0A – 9.0A
Type of Relay	PTC Start Relay
Capacitor and Value	Optional (3µF – 5µF for RSCR models)

5 Compressor Replacements (Same Gas – R134a/R600a):

1. ACC / Secop GVY57AA (R134a)
2. Embraco EMT6170Z (R134a)
3. Danfoss TLS6F (R134a)
4. Panasonic QB66C13GAX5 (R600a)
5. Jiaxipera N1113Y (R600a)

5 Compressor Replacements (Alternative Gas Equivalents):

1. Secop TLY8.7KK.3 (Transition to R600a)
2. Embraco EMX46CLC (Transition to R600a)
3. Donper LU111CY (High efficiency R600a)
4. Cubigel GL60AA (Standard R134a)
5. Samsung SD162 (Reliable R134a alternative)

Technical Analysis: The Engineering Behind HUAYI Refrigeration

In the field of appliance repair and HVAC engineering, HUAYI has become a household name—not just for their availability, but for their consistent performance in tropical climates. Whether you are dealing with the HYS series (R134a) or the newer, eco-friendly HYE series (R600a), understanding the internal mechanics is key to a long-lasting repair.

Comparison: R134a vs. R600a Performance

While the **HYS60** (1/5 HP) is a classic workhorse, the industry shift toward **HYE90** (1/4 HP R600a) reflects a move toward thermodynamic efficiency. R600a (Isobutane) operates at lower pressures, which reduces the load on the compressor valves and extends the lifespan of the motor. However, from an engineering standpoint, R600a requires a larger displacement (9.0 cm^3 vs 6.0 cm^3) to achieve similar cooling capacity to its R134a counterparts.

Winding and Electrical Configuration

As an expert who has handled these units on the bench, I can confirm that the HUAYI motor design usually follows a **RSIR (Resistive Start-Inductive Run)** or **RSCR (Resistive Start-Capacitive Run)** configuration.

Wiring Schema for HUAYI PTC Relay:

1. **Common (C):** Top Pin (Connected to Overload Protector).
2. **Main/Run (R):** Right Bottom Pin.
3. **Start (S):** Left Bottom Pin. *For RSCR models, the capacitor is bridged between the Start and Run pins to improve torque and energy consumption.*

Engineering Values: Comparison Table

Model	HP	Displacement (cm^3)	Capacity (W)	Efficiency (W/W)
HYS45	1/8	4.5	110	1.15
HYS55	1/6	5.5	135	1.20
HYE81	1/5+	8.1	145	1.45
HYE131	1/3	13.1	225	1.38

Pro Tips for Field Installation

- **Notice:** When replacing an R134a compressor with an R600a unit, you **must** change the filter drier and perform a nitrogen purge. R600a is highly sensitive to residual moisture.
- **Benefit:** Using the HYE series (RSCR) with a dedicated run capacitor can reduce electricity consumption by up to 15% compared to standard RSIR units.
- **Safety:** Always verify the LRA (Locked Rotor Amps). If the compressor fails to start under load, check the PTC relay resistance. A standard HUAYI PTC should read between 15 and 30 Ohms at room temperature.

Final Verdict

The HUAYI series offers a versatile range for the artisan. While the HYS models are robust and “forgiving” regarding slightly imperfect vacuums, the HYE series is the future of high-efficiency domestic freezing. When in doubt, always size your compressor based on the **Displacement (cm³)** and **Cooling Capacity (Watts)** at -23.3°C to ensure the evaporator remains fully flooded without liquid slugging returning to the compressor.

Modèle	Réf	App.	Puissance	Capacité de refroidissement		Puissance d’entrée	COP	Type de fil
				Hp	W/hr		(W/W)	
Référence: CMA042LHEG	Référence: R134a	LBP	220V/50Hz	1/8HP	107W	79W	1.31	Fil d’Al-
Référence: CMA053LHEG	Référence: R134a	LBP	220V/50Hz	1/6HP	150W	102W	1.48	Fil d’Al-
Référence: CMA057LHEG	Référence: R134a	LBP	220V/50Hz	1/5HP	163W	115W	1.42	Fil d’Al-
Référence: CMA069LHEM	Référence: R134a	LBP	220V/50Hz	1/4HP	195W	128W	1.52	Fil d’Al-
Référence: CMA075LAEM	Référence: R134a	LBP	220V/50Hz	1/4HP +	215W	130W	1.68	Fil de cuivre
LX95LHBM	Référence: R134a	LBP	220V/50Hz	1/3HP	267W	173W	1.25	Fil d’Al-
LX110LAJM	Référence: R134a	LBP	220V/50Hz	1/2HP	323W	232W	1.39	Fil de cuivre
Référence: CSB057NJEG	Référence: R600a	LBP	220V/50Hz	1/10HP	100W	77W	1.30	Fil d’Al-
Référence: CSB069NJEG	Référence: R600a	LBP	220V/50Hz	1/8HP	126W	90W	1.40	Fil d’Al-
Référence: CSB075NJEG	Référence: R600a	LBP	220V/50Hz	1/6HP	139W	102W	1.36	Fil d’Al-
Pièces connexes CMA082NHEM	Référence: R600a	LBP	220V/50Hz	1/5HP	148W	81W	1.84	Fil d’Al-
Référence: CMA098NHEM	Référence: R600a	LBP	220V/50Hz	1/4HP	181W	98W	1.85	Fil d’Al-
Référence: CMA110NJEM	Référence: R600a	LBP	220V/50Hz	1/4HP	194W	122W	1.58	Fil d’Al-

Référence: CMA121NBEM	Référence: R600a	LBP	220V/50Hz	1/4 + HP	220W	119W	1.85	Fil de cuivre

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