Compressor, Matsushita, D77C18RAX5, 1/4 hp, Panasonic

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The refrigeration industry has seen many legends, but few names carry as much weight in the workshop as Matsushita—the manufacturing powerhouse now known globally as Panasonic. Among their most reliable workhorses is the D77C18RAX5 compressor. This hermetic reciprocating unit has been the backbone of thousands of residential refrigerators and commercial chest freezers, prized for its “set it and forget it” reliability.

Engineering Excellence: The D77C18RAX5 Architecture

The D77C18RAX5 is a Low Back Pressure (LBP) compressor designed specifically to handle the rigors of deep freezing and standard refrigeration. Built in Malaysia under strict quality controls, this model utilizes a 7.7cc displacement to move R134a refrigerant efficiently through the system.

From an engineering perspective, the “D77” series is celebrated for its high volumetric efficiency and robust thermal protection. Unlike modern inverter

compressors that require complex electronic control boards, the D77C18RAX5 relies on a tried-and-true RSIR (Resistive Start, Inductive Run) motor. This makes it exceptionally resilient to voltage fluctuations often found in older residential grids.

Technical Specifications Table

Feature	Specification
Model	D77C18RAX5
Manufacturer	Matsushita (Panasonic)
Refrigerant Type	R134a
Horsepower (HP)	1/4 HP
Displacement	7.7 cm^3
Voltage/Frequency	220-240V / 50Hz
Application Range	Low Back Pressure (LBP)
Cooling Capacity	195 Watts (Approx. 665 BTU/h)
Motor Type	RSIR
Starting Current (LRA)	11.5 A
Running Current	1.3 – 1.5 A
Oil Type	POE (Polyolester)
Cooling Method	Static (Natural Convection)

Performance Comparison: R134a vs. R600a Variants

In the modern landscape, there is a push toward R600a (isobutane). However, the D77C18RAX5 remains a critical component for repairs because of its specific pressure-temperature relationship. When compared to an R600a equivalent, the D77 series offers higher mass flow rates, which is essential for older cabinet designs with smaller evaporator surface areas.

Metric	Matsushita D77C18RAX5 (R134a)	Typical R600a 1/4 HP Equivalent
Displacement	7.7cc	11.0cc to 12.0cc
Pressure Levels	Higher Discharge Pressures	Lower (Vacuum-prone)
Reliability	Proven 15-20 year lifespan	High (but sensitive to moisture)
Lubrication	POE Oil (Hygroscopic)	Mineral Oil

Expert Insight: Field Service Tips

When replacing this unit, field technicians must prioritize the evacuation process. Since the D77C18RAX5 uses POE oil, any moisture left in the system can react to form acids that eat away at the motor windings.

1. **Always replace the Filter Drier:** Never install a new D77 without a fresh XH-9 or universal drier.
2. **Verify the Capacitor:** While most are RSIR, some variations use a starting capacitor to assist in high-ambient starts. Check the relay housing before installation.
3. **Heat Management:** Ensure the condenser coils are cleaned. The D77 is thermally protected, but frequent cycling due to heat buildup will eventually degrade the internal valves.

Detailed Compressor Data Sheet

Model	D77C18RAX5
Utilisation (mbp/hbp/lbp)	LBP
Domaine (Freezing/Cooling)	Domestic Freezing / Refrigerator Cooling
Oil Type and quantity	POE 230ml
Horsepower (HP)	1/4 HP
Refrigerant Type	R134a
Power Supply	220V-240V ~ 50Hz
Cooling Capacity BTU	665 BTU/h
Motor Type	RSIR
Displacement	7.7 cc
Winding Material	Copper
Pression Charge	Low side: 0.5 – 2 PSI (Running)
Capillary Recommendation	0.031″ or 0.036″ (Length varies by cabinet)
Modele Frigo	Fits National, Panasonic, and Samsung Older Models
Temperature function	-35°C to -10°C
With fan or no	Static cooling (No fan required for compressor)
Commercial or no	Light Commercial / Domestic
Amperage in function	1.4 A
LRA (Locked Rotor Amps)	11.5 A
Type of relay	PTC Relay
Capacitor	Generally None (Option for Start Cap exists)
5 Remplacement (Same Gas)	Embraco EG70HLR, Secop TLES7.5KK.3, Donper QD75, LG MA72LAEG, ACC GVY75AA
5 Remplacement (Other Gas)	Secop TLY8.7KK (R600a), Embraco EMX70CLC (R600a), Cubigel GL80AA (R134a/R600a conversion), Jiaxipera NT1114Y, Nidec TT1114GY

Benefits of the D77C18RAX5

- **Thermal Protection:** Built-in overload protector prevents motor burnout during brownouts.
- **Low Vibration:** The internal spring mounting system is designed for ultra-quiet household operation.
- **Global Standard:** Parts like relays and overloads are universally available, making maintenance simple anywhere in the world.

Engineering Notice: If you find this compressor running hot but not cooling, check the discharge pressure. These units are extremely durable, but if the valves are bypassed due to liquid slugging, the efficiency drops significantly. Always ensure the refrigerant charge is weighed in according to the appliance nameplate.

Focus Keyphrase: Matsushita D77C18RAX5 Compressor 1/4 HP R134a Specifications and Replacement Guide
SEO Title: Mbsm.pro – Matsushita D77C18RAX5 Compressor | 1/4 HP | R134a | LBP

Specs

Meta Description: Discover the technical specifications of the Matsushita D77C18RAX5 compressor. A professional guide to 1/4 HP R134a cooling capacity, amperage, and reliable replacements.

Slug: matsushita-d77c18rax5-compressor-1-4-hp-r134a-specs

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Excerpt: The Matsushita D77C18RAX5 is a legendary 1/4 HP refrigerator compressor optimized for R134a refrigerant. Known for its robust RSIR motor and 7.7cc displacement, it delivers 195W of cooling power for domestic freezers and refrigerators. This guide provides full technical data, wiring details, and the best professional cross-reference replacements for modern refrigeration repair.



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