Compressor, STU 120 MT, 1/6 hp

Category: Refrigeration
written by www.mbsm.pro | 19 January 2026



Private Picture Copyright : WWW.MBSM.PRO

Mbsmpro.com, Compressor, STU 120 MT, 1/6 hp class, TEE, Cooling, R600a, 220-240V 50Hz, LBP, Static, PTC relay, Domestic refrigerator use

Technical overview

TEE STU 120 MT U252-00 is a hermetic reciprocating compressor designed by Türk Elektrik for domestic refrigerators operating on R600a refrigerant at low back pressure conditions. It runs on 220-240 V, 50 Hz single-phase supply and is optimized for static condenser systems without forced ventilation.
The compressor belongs to the same technical family as the NTU/170MT models, sharing similar motor design, PTCSCR starting system and oil charge concept, with slightly lower swept volume and cooling capacity around the 120 W CECOMAF class. Its compact shell and low current draw make it suitable for slim-cabinet refrigerators and small freezers in residential kitchens.

Complete specification table

Parameter	Value
Model	STU 120 MT U252-00 (TEE / Türk Elektrik Hermetic Compressors)
Utilisation (mbp/hbp/lbp)	LBP, low back pressure for household refrigeration evaporating between about −35 °C and −10 °C
Domaine (Freezing/Cooling)	Freezing and high-efficiency food preservation in small refrigerators and freezers using R600a
Oil Type and quantity	Mineral/alkylbenzene compatible with R600a, typical charge about 170–175 cm³ for this family
Horsepower (HP)	Around 1/6 hp class, matching 120 W CECOMAF family performance
Refrigerant Type	R600a isobutane refrigerant
Power Supply	1Ph 220-240 V, 50 Hz, voltage range 176–242 V
Cooling Capacity BTU	≈ 410–450 BTU/h at CECOMAF conditions for 120 W class
Motor Type	Hermetic single-phase reciprocating motor, PTCSCR starting system
Displacement	Approximately 9–11.5 cm³, derived from 170MT data scaled to 120 class
Winding Material	Copper winding, insulation class E
Pression Charge	R600a system typically 0.6–0.9 bar suction at −25 °C, 4–8 bar discharge depending on ambient
Cappilary	Designed for capillary expansion; typical 0.6–0.7 mm ID, 2.0–2.4 m length for R600a household units of this volume
Modele Frigo or refrigerator can work with this compressor	Beko and similar 1-door and 2-door domestic fridges and small freezers around 120 L to 220 L volume using R600a
Temperature function	Evaporating range about −35 °C to −10 °C, ambient up to 43 °C
With fan or no	Static condenser operation (no fan on condenser), optional small evaporator fan in cabinet only
Commercial or no	Mainly non-commercial domestic use; light-duty commercial use only when within envelope
Amperage in function	Around 0.55–0.65 A at nominal load, derived from 170MT value of 0.59 A scaled to 120 W

Parameter	Value
LRA	Locked-rotor starting current about 10–12 A (170MT has 12.4 A)
Type of relay	PTC relay, resistance around 15 Ω for this family
Capacitor or no and valeur	Run capacitor 5 µF, 220–240 V as in 170MT design
5 Compressor remplacement in same valeur in same gaz	TEE NTU 120 MT 220-240 V R600a; TEE NTU 130 MT R600a; Huanmei QM60TG R600a LBP; Jingyi JDH80Y R600a LBP; Donper NE60MN R600a LBP (all similar 1/6 hp R600a LBP domestic models)
5 Compressor remplacement in same valeur in other gaz	Embraco EMI30CL R134a LBP; Secop (Danfoss) NLX10KK R134a; Cubigel GP12TB R134a; Huayi HYK95AA R134a; ACC HMT80A R134a (capacity and displacement close but different refrigerant)

Electrical schematic and control concept

The STU 120 MT uses a PTCSCR starting concept, combining a PTC relay with a run capacitor to provide high starting torque and then drop the start winding after a short delay. The start device connects directly to the compressor’s three pins: common, run, and start, with the overload protector in series with the common line.

During start-up, the PTC has low resistance and feeds the start winding; as it heats, its resistance increases, effectively leaving only the run winding and 5 µF run capacitor in the circuit for high efficiency during steady operation. This simple scheme reduces moving parts compared with traditional mechanical relays and improves reliability in domestic refrigerators.

Performance and application domain

According to the technical family sheet, a 170MT R600a low-back-pressure compressor delivers 149 W (Cecomaf) capacity with 1.49 W/W COP and operates from −35 °C to −10 °C evaporating temperature and up to 43 °C ambient. The STU 120 MT model scales these values downward, offering around 120 W capacity, ideal for single-door fridges, compact combined refrigerators, and small freezers where energy efficiency and low noise are critical.

This compressor is optimized for static condenser systems, meaning the heat is rejected through a rear or side grid without a fan, making installation simpler and more silent but requiring correct clearances around the appliance. The PTCSCR motor design and insulation class E protect the windings against common voltage fluctuations on 220-240 V networks, especially in residential buildings.

Comparison with NTU 170 MT R600a

Feature	STU 120 MT U252-00	NTU 170 MT 220-240 V R600a
Application	LBP, domestic refrigerator/freezer	LBP, domestic refrigerator/freezer
Refrigerant	R600a	R600a
Nominal Capacity (Cecomaf)	≈ 120 W	149 W
COP (Cecomaf)	Around 1.45–1.5 W/W	1.49 W/W

Feature	STU 120 MT U252-00	NTU 170 MT 220-240 V R600a
Displacement	≈ 9–11.5 cm³ □	11.55 cm³ □
Run Current	≈ 0.55–0.65 A □	0.59 A □
LRA	≈ 10–12 A □	12.4 A □
Oil Charge	≈ 170–175 cm³ □	175 cm³ □
Start Device	PTC relay + 5 µF capacitor □	PTC relay + 5 µF capacitor □

The STU 120 MT gives slightly lower cooling capacity but similar energy efficiency, making it better suited to compact cabinets where oversizing would cause short cycling. The NTU 170 MT, with higher displacement, is more appropriate for larger-volume refrigerators or freezers that need faster pull-down and higher load handling.□

Installation, exploitation and maintenance advice

For correct operation, the suction line must be well insulated and the capillary length and internal diameter must match the original manufacturer specification; shortening the capillary or increasing its diameter can overload the compressor and reduce evaporator temperature stability. The system must be evacuated to deep vacuum before charging R600a to remove moisture, which can react with the oil and create acids that attack copper windings and internal valves.□□

Only small, precise charges of R600a are allowed because the refrigerant is flammable; work must respect EN and IEC safety standards and be carried out in well-ventilated areas using certified recovery and charging tools. The overload protector should be kept in its original position, tightly clipped to the compressor shell, since it senses shell temperature and interrupts the circuit if overheating occurs due to locked rotor or high condensing pressure.□□

Periodic maintenance on the refrigerator, such as cleaning the static condenser grid and checking door gaskets, reduces condensing temperature and directly increases COP and compressor life. When replacing the compressor, always replace the filter dryer and, if the system previously had a burn-out, flush or replace the capillary to avoid residual carbon and sludge.□□

Replacement compressor suggestions

For a direct R600a replacement, matching displacement, evaporating range and electrical characteristics is essential to keep the same cooling performance and energy consumption. Compressors such as TEE NTU 120 MT, NTU 130 MT, or similar 1/6 hp R600a LBP models from other brands (Huanmei, Donper, Jingyi) should be selected with compatible voltage, starting system and mounting footprint.□□

When using R134a alternatives, the technician must redesign capillary length and re-charge mass, since R134a operates at different pressures and requires polyester oil; examples such as Embraco EMI30CL or Secop NLX10KK offer close cooling capacity but are not drop-in replacements and require full system conversion. This type of conversion is normally reserved for situations where R600a components are unavailable and the system can be fully opened, cleaned, and re-engineered.□

Focus keyphrase

TEE STU 120 MT U252-00 R600a low back pressure refrigerator compressor 220-240V 50Hz technical data, capacity, wiring, oil charge, replacements

SEO title

TEE STU 120 MT U252-00, 1/6 hp, R600a, 220-240V 50Hz, LBP Refrigerator Compressor – Mbsmpro.com

Meta description

Detailed technical sheet for TEE STU 120 MT U252-00 R600a refrigerator compressor: 1/6 hp class, 220-240V 50Hz, LBP application, capacity, wiring, oil charge, and professional replacement recommendations on Mbsmpro.com.

Slug

tee-stu-120-mt-u252-00-r600a-refrigerator-compressor

Tags

TEE STU 120 MT, STU120MTU25200, NTU 120 MT, NTU 170 MT, R600a compressor, LBP refrigerator compressor, domestic fridge compressor, compressor replacement, Embraco EMI30CL, Secop NLX10KK, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm

Excerpt (first 55 words)

TEE STU 120 MT U252-00 is a hermetic reciprocating compressor from Türk Elektrik designed for domestic refrigerators using R600a refrigerant at low back pressure. It operates on 220-240 V, 50 Hz single-phase supply and delivers around 1/6 hp class cooling capacity, ideal for compact fridges and small freezers.



Compressor, STU 120 MT, 1/6 hp mbsmpro

mbsmpro.com-Compressor STU 120 MT 16 hpDownload

tee-stu-120-mt-u252-00-r600a-refrigerator-compressor (2)Download