

Danfoss 067L5957

Danfoss TR 6 Thermostatic Expansion Valve (TXV) Kit

MODEL: 067L5957

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Danfoss TR 6 Thermostatic Expansion Valve (TXV) Kit, Model 067L5957. This valve is designed to regulate the flow of refrigerant into evaporators, ensuring optimal performance in higher capacity traditional HVAC systems, including A/C, heat pump, bi-flow, and chiller applications. It is compatible with R410A refrigerant and suitable for systems ranging from 3 to 5 tons.

The Danfoss TR 6 TXV features a compact, hermetic design with a straightway configuration and external equalization. Its robust construction includes a laser-welded power element for extended diaphragm life and high corrosion resistance, along with a stainless steel capillary tube for enhanced durability and vibration resistance.



Image 1: Danfoss TR 6 Thermostatic Expansion Valve Kit, Model 067L5957.

2. Safety Information

WARNING: Installation and servicing of HVAC equipment should only be performed by qualified, experienced technicians. Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or death.

- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling refrigerants and HVAC components.
- Ensure the system is depressurized and isolated before attempting any installation or service.
- Refrigerants are under high pressure and can cause severe frostbite or other injuries if mishandled.
- Follow all local and national codes and regulations for refrigerant handling and HVAC system installation.
- Do not modify the valve or its components. Use only genuine Danfoss replacement parts.

3. Product Features

The Danfoss TR 6 TXV is engineered with several key features to ensure reliable and efficient operation:

- **Compact Size:** Hermetic design with a straightway configuration and external equalization.
- **Durable Power Element:** Laser-welded power element for longer diaphragm life and high corrosion resistance.
- **Robust Capillary Tube:** Stainless steel capillary tube tolerates more bending for easier installation and extended life, offering high strength and vibration resistance.
- **Adjustable Superheat:** Available with adjustable or non-adjustable superheat settings, allowing for customer-specific factory settings.
- **Wide Capacity Range:** Compatible with R22/R407C up to 23.6 Kw / 6.7 TR; R410A up to 24.5 Kw / 7 TR; R454B up to 28.1 Kw / 8 TR.

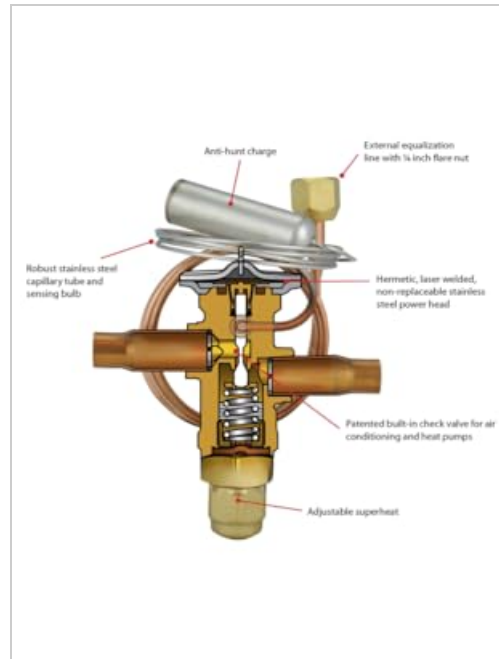


Image 2: Detailed callout diagram of the Danfoss TR 6 Thermostatic Expansion Valve, highlighting internal components and features.

4. Setup and Installation

The Danfoss TR 6 TXV Kit includes the valve, a bulb strap, and various connectors for installation. Proper installation is crucial for optimal system performance and longevity.

4.1 Included Components:

- Danfoss TR 6 Thermostatic Expansion Valve
- 1 Aeroquip female 5/8 inch connector
- 1 Chatleff female 3/4 inch connector
- 1 Flare 3/8 inch connector
- Bulb strap
- Installation instructions (refer to this document)

4.2 Installation Steps:

1. **System Preparation:** Ensure the HVAC system is completely depressurized and evacuated. Isolate the section where the TXV will be installed.
2. **Valve Placement:** Install the TXV in the liquid line immediately upstream of the evaporator. Ensure the flow direction arrow on the valve body matches the refrigerant flow.
3. **Brazing Connections:** Braze the valve into the liquid line using appropriate brazing techniques and

materials. Protect the valve body from excessive heat during brazing by wrapping it with a wet cloth.

4. **External Equalization Line:** Connect the external equalization line from the TXV to the suction line, typically downstream of the evaporator and sensing bulb. This connection ensures proper valve operation by sensing the evaporator outlet pressure.
5. **Sensing Bulb Installation:** Securely attach the sensing bulb to the suction line using the provided bulb strap. The bulb should be placed horizontally on a clean, dry section of the suction line, typically after the evaporator outlet. Ensure good thermal contact by cleaning the pipe surface and insulating the bulb.
6. **Leak Check and Evacuation:** After installation, perform a thorough leak check on all connections. Evacuate the system to a deep vacuum to remove all non-condensable gases and moisture.
7. **Refrigerant Charging:** Charge the system with the correct type and amount of R410A refrigerant according to the system manufacturer's specifications.

5. Operating Principles

The Danfoss TR 6 TXV operates by maintaining a constant superheat at the evaporator outlet. The sensing bulb, filled with a charge similar to the system's refrigerant, responds to the temperature of the suction line. Changes in suction line temperature cause the pressure within the bulb and power element to change, which in turn adjusts the valve's opening. This precise control ensures that the evaporator is fully utilized without allowing liquid refrigerant to return to the compressor, protecting the compressor and maximizing system efficiency.

6. Maintenance

The Danfoss TR 6 TXV is a hermetically sealed component and generally requires no internal maintenance. Regular maintenance of the overall HVAC system is essential to ensure the TXV operates correctly.

- **Annual System Check:** Have a qualified technician perform an annual inspection of the HVAC system, including checking refrigerant charge, superheat, and subcooling.
- **Leak Detection:** Periodically check for refrigerant leaks around the TXV connections and throughout the system.
- **Sensing Bulb Integrity:** Ensure the sensing bulb remains securely attached and insulated on the suction line. Any dislodgement or loss of insulation can lead to incorrect superheat readings and poor system performance.
- **Cleanliness:** Keep the area around the TXV clean and free from debris.

7. Troubleshooting

If the HVAC system is not performing optimally, the TXV may be a contributing factor. Always ensure other system components (compressor, condenser, evaporator, fan motors) are functioning correctly before troubleshooting the TXV.

Symptom	Possible Cause	Solution
High Superheat / Low Suction Pressure	TXV restricted or underfeeding; low refrigerant charge; sensing bulb improperly installed or lost charge.	Check refrigerant charge; verify sensing bulb placement and insulation; inspect for internal valve blockage; replace TXV if necessary.

Symptom	Possible Cause	Solution
Low Superheat / High Suction Pressure	TXV overfeeding or stuck open; sensing bulb improperly installed or overcharged.	Check refrigerant charge; verify sensing bulb placement and insulation; replace TXV if necessary.
Fluctuating Superheat / Hunting	Improper sensing bulb contact or location; incorrect refrigerant charge; system instability.	Ensure proper sensing bulb installation and insulation; verify correct refrigerant charge; consult system manufacturer guidelines.
No Refrigerant Flow	TXV completely closed; clogged filter drier; severely low refrigerant charge.	Check refrigerant charge; inspect filter drier; replace TXV if confirmed faulty.

For complex issues or if troubleshooting steps do not resolve the problem, contact a qualified HVAC technician or Danfoss technical support.

8. Specifications

Key technical specifications for the Danfoss TR 6 Thermostatic Expansion Valve Kit, Model 067L5957:

- **Model Number:** 067L5957
- **Brand:** Danfoss
- **Material:** Stainless Steel
- **Exterior Finish:** Brass
- **Number of Ports:** 3
- **Thread Size:** 3/8 inch ODF
- **Connector Type:** Threaded
- **Valve Type:** Diaphragm Valve
- **Size:** Compact
- **Item Weight:** 1.3 Pounds
- **Refrigerant Compatibility:** R410A (also R22, R407C, R454B)
- **Rated Capacities (R410A):** Up to 24.5 Kw / 7 TR
- **Specification Met:** ASME B16.34, RoHS

9. Warranty and Support

For warranty information and technical support regarding the Danfoss TR 6 Thermostatic Expansion Valve Kit, Model 067L5957, please contact Danfoss directly or refer to their official website. Keep your purchase receipt as proof of purchase for any warranty claims.

Manufacturer: Danfoss

