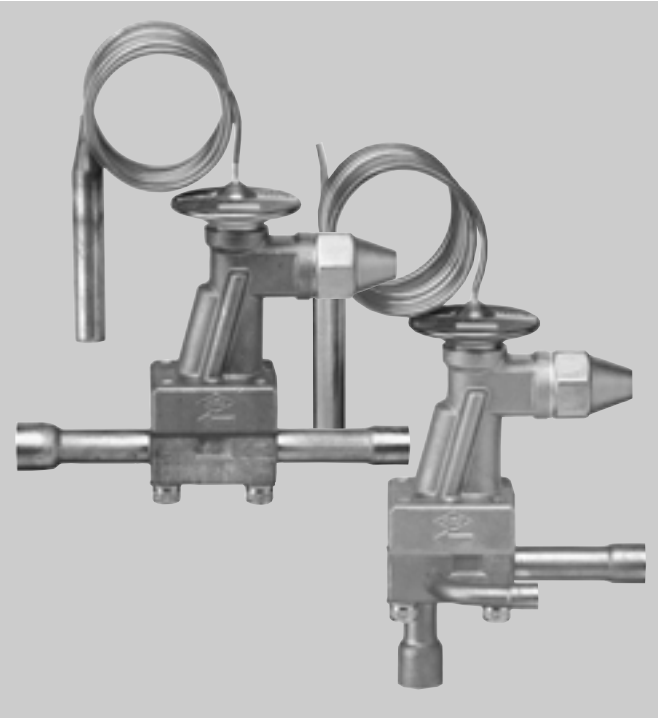
Series TMVL

Thermostatic expansion valves with interchangeable cartridges, separate solder base and adjustable superheat setting

Specification Data



Application

General refrigeration and original equipment. Plants with one or more circuits, refrigerated cabinets even with cramped mounting conditions, deep-freezing plants, ice and cream machines, milk cooling systems, cold stores, air conditioning systems.

TMVL: **internally equalized:**
for single injection in plants with single and multiple evaporators.

TMVLX: **externally equalized:**
for optimum evaporator utilization in any application.
Imperative for multiple injection by liquid distributors.

Specification/Technical Data

- Capacity adaptable from 0.3 to 21.5 kW by interchangeable cartridges with integrated strainer
- Thermal charge of high sensitivity for reduced superheating, unaffected by ambient temperature
- Special adsorber charge with damping characteristic for stable superheat control
- Suitable for systems with hot gas defrosting; no charge migration
- Only one valve necessary for the whole evaporating temperature range
- Evaporation temperature range: see table on page 2
- Extreme durability thanks to welded stainless steel head and stainless steel diaphragm
- Adjustable superheat setting
- The advantage with the combi adsorber charge is that for each of the following refrigerant groups only one valve is required:
  – R134a, R401A (MP39), R12
  – R22, R407C, R407A
  – R404A, R507, R402A (HP 80), R407B, R502
  other refrigerants on request
- Only one upper part for internal and external pressure equalization. Connection for pressure coupler is integrated in the separate solder base, available in angle and direct style.
- Max. test pressure: 32 bar
  (all connections at the same time)
- Max. suction pressure: 22 bar
- Max. ambient temperature: 100 °C
- Max. bulb temperature: 140 °C
- Static superheat: 3 K
- Capillary length: 1.5 m
- Materials:
  body/power head: brass/stainless steel
  connection tubes: copper

Cooling Solutions

Thermal charge and temperature range

1. Adsorber charge

Designation on type label: A

Evaporating temperature range	Refrigerant
+15 °C bis –30 °C	R134a, R401A (MP39), R12
+15°C bis –45 °C	R22, R407C, R407A
±0 °C bis –50 °C	R404A, R507, R402A, R407B, R502

1a. Adsorber charges with pressure limiting characteristic (MOP)

The adsorber charge is absolutely insensitive to the temperature conditions at the capillary and the power head of the valve. It reacts according to the temperature at the bulb only. Therefore, Honeywell valves with adsorber charge are absolutely reliable, even if they are covered by ice or used in hot gas defrosted systems.

MOP*	Evaporating temperature range	Refrigerant
A+15 °C	+5 °C bis –30 °C	R134a, R401A (MP39), R12
A±0 °C	–10 °C bis –30 °C	
A+15 °C	+5 °C bis –45 °C	R22, R407C, R407A
A±0 °C	–10 °C bis –45 °C	
A–18 °C	–27 °C bis –50 °C	
A±0 °C	–10 °C bis –50 °C	R404A, R507, R402A, R407B, R502
A–10 °C	–20 °C bis –50 °C	
A–18 °C	–27 °C bis –50 °C	

*to be specified in order

Capacities

Type	Orifice size	Nominal capacities in kW*			Weight (kg)
		R134a	R22 R407C	R404A R507	
TMVL (X)	0.3	0.34	0.50	0.37	0.4
	0.5	0.65	0.95	0.70	
	0.7	0.90	1.30	1.00	
	1.0	1.30	1.90	1.45	
	1.5	2.10	3.10	2.3	
	2.0	2.70	3.90	2.9	
	2.5	3.80	5.60	4.2	
	3.0	6.20	8.90	6.7	
	3.5	8.20	11.70	8.80	
	4.5	11.10	16.30	12.30	
	4.75	15.00	21.50	16.20	

*Capacities are based on $t_O = -10\,°C$, $t_C = +25\,°C$ and 1 K subcooled liquid refrigerant entering the valve.
For other operating conditions see capacity tables in catalogue, "Selection of Expansion Valves" or consult the Honeywell software.

Solder base Dimensions / Connections / Weight

Type- passage	A		B		C		Weight (kg)
	mm	Inch	mm	Inch	mm	Inch	
VLS-angle	6	1/4"	10	3/8"			0.1
	10	3/8"	12	1/2"			
VLSX-angle	6	1/4"	10	3/8"	6	1/4"	
	10	3/8"	12	1/2"	6	1/4"	
VLS-direct	10	3/8"	12	1/2"			
	12	1/2"	16	5/8"			
VLSX-direct	10	3/8"	12	1/2"	6	1/4"	
	12	1/2"	16	5/8"	6	1/4"	

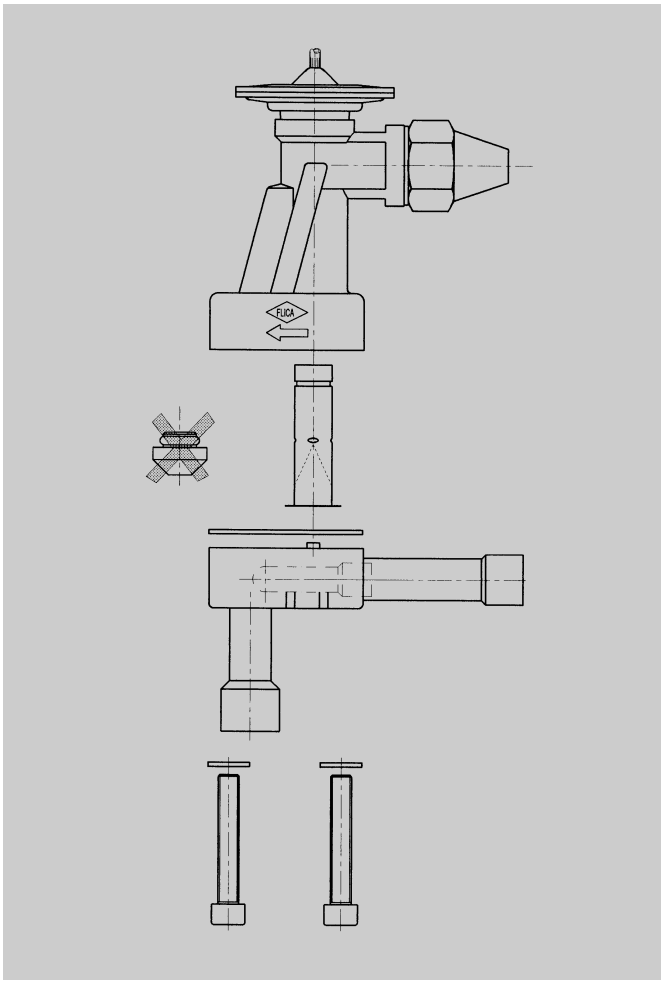
Valve nomenclature / Order instructions

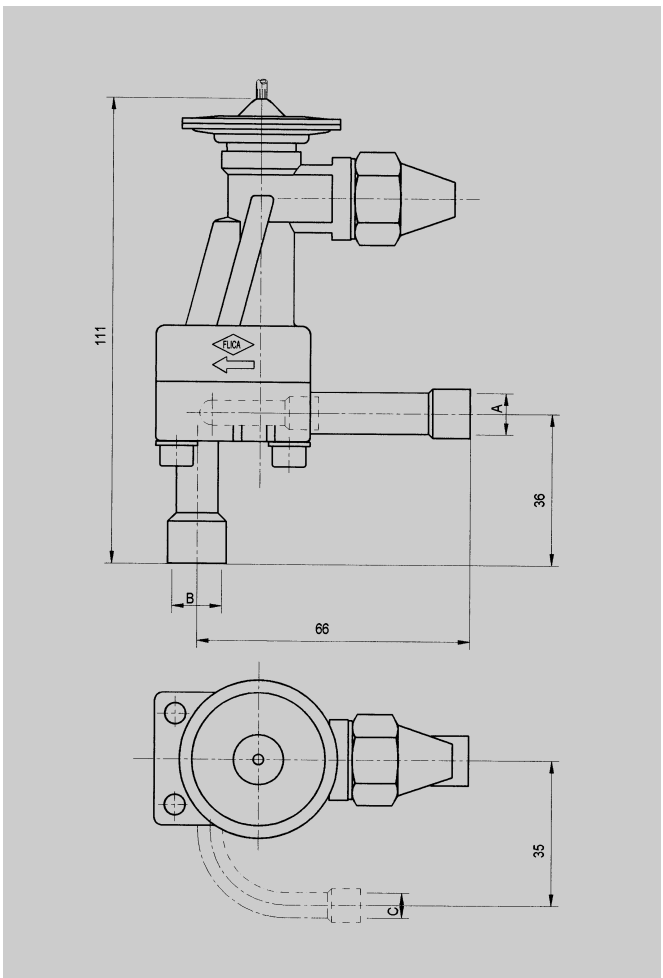
TMVL (X) – R 22 Kombi – A –18 °

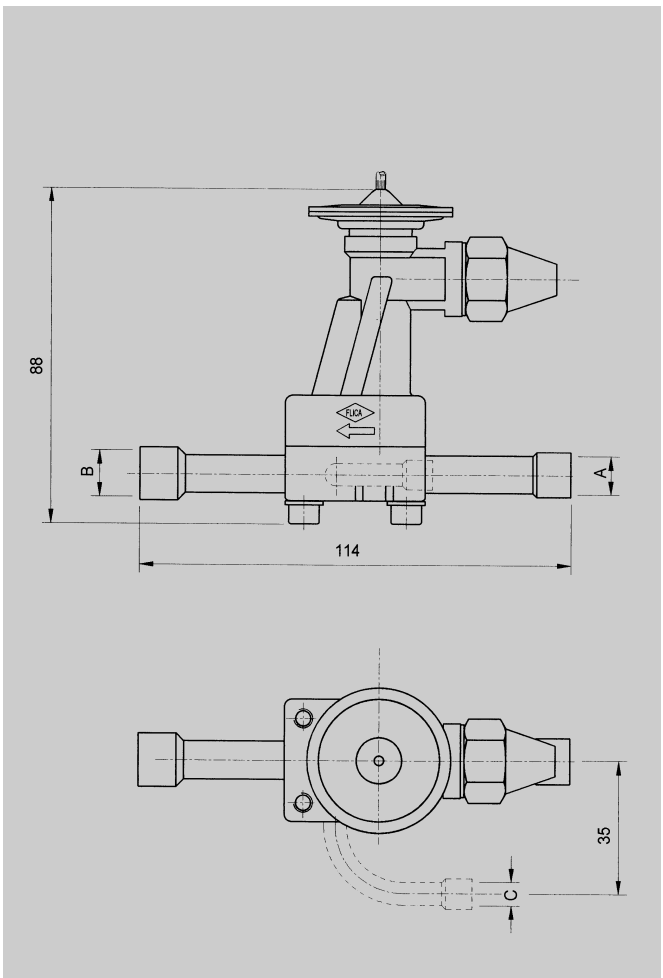
Upper valve part
Suitable for internal and external pressure equalization:
Series
Refrigerant group
Adsorber charge with pressure limiting performance **(MOP)**
( ) = without **MOP**

Cartridges: **VD – 0.5**
Cartridge for
Series TMV and TMVL
Orifice size
0.5 bis 4.5

Solder base: **VLS – 10 x 12 – W**
Solder base for
Internal pressure equalization (VLS)
External pressure equalization (VLSX)
Tube diameter ODF
(inlet x outlet)
Passage:
(W = angle, D = direct)







Interchangeable cartridges with integrated strainer

Should the capacity of the valve be incorrect, interchangeable cartridges allow the valve's capacity to be adapted very quickly on site without removing the valve itself from the circuits. The integrated strainer can be easily cleaned or replaced if necessary.

Installation

- The valves may be installed in any position.
- The external pressure equalizer line should be 6 mm or 1/4" in diameter and is to be connected downstream of the remote bulb.
  An overbow is recommended in order to prevent the ingress of oil into the equalizer line.
- The bulb should preferably be positioned on the upper half of a horizontal suction line but never after a liquid trap.
  As a general rule, bulbs of expansion valves should be insulated to prevent them being affected by the ambient temperature.
- When soldering the base it should be protected by a damp cloth against too high temperatures. Never quench with water, as this may cause cracks and distort the mating surfaces.
- The bolts securing the lower part of the body must be tightened in diagonal sequence.

Superheat adjustment

In general the valves should be installed with the factory setting unaltered. The factory setting is calibrated for lowest superheating and optimum evaporator utilization. However, should it be necessary to adjust the superheat, turn the adjusting spindle as follows:

Turning clockwise
= reduced passage, increase of superheat
Turning counterclockwise
= reduced passage,
decrease of superheat

1 turn of adjusting spindle alters superheat setting by approx. 0.55 bar.

Any increase of superheat setting results in a lower MOP-value and vice versa.

Tighten seal cap to a torque of: 20 + 5 Nm

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