

# Straight check valves

## Types 3124N-3125N 3144N-3145N



## Applications

The check valves, shown in this document, are classified "Pressure accessories" in the sense of the Pressure Equipment Directive 97/23/EC, Article 1, Section 2.1.4 and are subject of Article 3, Section 1.3 of the same Directive.

They are designed for installation on commercial refrigerating systems and on civil and industrial conditioning plants, which use the following refrigerant fluids: R134a , R404A , R407C , R410A ; R507. For specific applications with refrigerant fluids not listed above, always proper to the Group II, please contact Castel Technical Department.

**N.B.: straight check valves series 3124N-3125N ; 3144N-3145N cannot be installed on systems, which use refrigerant R22 or other refrigerants mixed with mineral oils.**

## Constructions

Straight check valves are available in the following two types:

- Types 3124N and 3144N (standard spring) that guaranty a low opening pressure differential;  $\Delta p = 0,04$  bar
- Types 3125N and 3145N (reinforced spring) that guaranty a higher opening pressure differential, for example to use on plant with compressors connected in parallel;  $\Delta p = 0,3$  bar

**The main parts of straight check valves are made with the following materials:**

- Hot forged brass EN 12420 – CW 617N for body and cover.
- Copper tube EN 12735-1 – Cu-DHP for solder connections.

- Austenitic stainless steel AISI 302 for spring.
- Bar brass EN 12164–CW 614N for piston.
- P.T.F.E. seat piston gasket.
- Hydrogenated nitrile rubber (HNBR) for outlet seal gaskets.

## Installation

The valves can be installed in any section of a refrigerating system, where it is necessary to avoid an inversion of the refrigerating flow, in compliance with the limits indicated. Table 1 shows the following functional characteristics of a check valve.

- PS
- TS
- Kv factor
- Minimum opening pressure differential, which is the minimum pressure differential between inlet and outlet at which a check valve can open and stay opened.

**The allowed operating positions are:**

- With horizontal axis and valve cover facing upward
- With horizontal axis and valve cover facing side, horizontal position.
- With vertical axis and valve cover facing upward (arrow facing upward)

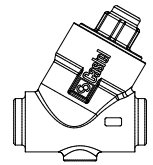
**N.B: Do not install the valves with the cover facing down.**

**Before starting to braze, it's necessary to disassemble the valves types 3124N-3125N, while this operation is not necessary with the valves types 3144N-3145N.**

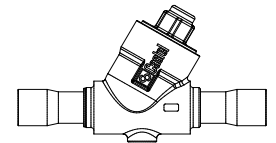


# General Characteristics

TYPES 3124N 3125N 3144N 3145N	Catalogue Number		Connections		Minimum Opening pressure differential [bar]		Kv Factor [m³/h]	PED Directive			
	Standard spring	Reinforced spring	ODS		Standard spring	Reinforced spring		TS [°C]		PS [bar]	Risk Category
			Ø [in.]	Ø [mm]				min.	max.		
	3124N/M22	3125N/M22		22	0,04 (1)	0,3 (1)		8,1	-40	+150	45
3124N/7	3125N/7	7/8"	-	8,1							
3124N/M28	3125N/M28		28	10,4							
3124N/9	3125N/9	1.1/8"	-	10,4							
3124N/11	3125N/11	1.3/8"	35	15,6							
3144N/7	3145N/7	7/8"	22	8,1							
3144N/M28	3145N/M28	-	28	10,4							
3144N/9	3145N/9	1.1/8"	-	10,4							
3144N/11	3145N/11	1.3/8"	35	15,6							



Types 3124N-3125N



Types 3144N-3145N

(1): minimum pressure at which the valve is completely open.





B01-2015\_VRL-EN

Castel has always been aware of environmental sustainability issues and gives its contribution to a cleaner environment, supplying the refrigeration and air conditioning industry with state-of-the-art and environment-friendly technology. With its commitment and steady research in its laboratories, Castel has developed a whole range of products using natural refrigerants, which reduce emissions to the minimum.



ISO 14001

Castel can accept no responsibility for any errors or changes in the catalogues, handbooks, brochures and other printed material. Castel reserves the right to make changes and improvements to its products without notice. All trademarks mentioned are the property of their respective owners. The name and Castel logotype are registered trademarks of Castel Srl. All rights reserved.

**CASTEL S.r.l.**

Via Provinciale, 2-4 [C.P. 67] - 20060 Pessano con Bornago (MI) - Tel. +39 02.957021 - Fax +39 02.95741317 - email [info@castel.it](mailto:info@castel.it) - [www.castel.it](http://www.castel.it)