

Angleway check valves Types 3184-3185



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.: check valves series 3184, 3185 cannot be installed on systems, which use refrigerant R22 or other refrigerants mixed with mineral oils.

Check valves series 3184 and 3185 are approved by Underwriters Laboratories Inc. of the United States according to UL 207 Standard.

Constructions

Check valves are available in the following two types:

- Type 3184 (standard spring) that guarantees a low opening pressure differential; $\Delta p = 0,04$ bar.
- Type 3185 (reinforced spring) that guarantees 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 angleway 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 the inlet pipe facing down and the valve cover facing upward.
- With the inlet pipe horizontal and the outlet pipe horizontal/vertical.

N.B: Do not install the valves with the inlet pipe facing upward and the valve cover facing down.



General Characteristics

SERIES 3184 3185	Catalogue Number		Connections		Minimum Opening Pressure Differential [bar]		Kv Factor [m ³ /h]	PED Directive				
	Standard spring	Reinforced spring	ODS					Standard spring	Reinforced spring	TS [°C]		PS [bar]
			∅ [in.]	∅ [mm]	min.	max.						
	3184/7	3185/7	7/8"	22	0,04 (1)	0,3 (1)	9	-40	+150	45	Art. 3.3	
	3184/M28	3185/M28	-	28								19
	3184/9	3185/9	1.1/8"	-								19
	3184/11	3185/11	1.3/8"	35								29

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





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