HANDBOOK

OIL CONTROL SYSTEMS

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Castel®
Italian technology

CHAPTER 3
OIL RESERVOIR PRESSURE VALVES
FOR REFRIGERATION PLANTS THAT USE HCFC, HFC OR HFO REFRIGERANTS

APPLICATIONS

The calibrated pressure relief valves illustrated in this chapter are designed for installation on commercial refrigeration systems and on civil and industrial air conditioning plants that use the following refrigerant fluids:

- HCFC (R22)
- HFC (R134a, R404A, R407C, R410A, or R507)

belonging to Group 2, as defined in Article 13, Chapter 1, Point (b) of Directive 2014/68/EU, with reference to EC Regulation No. 1272/2008.

For specific applications with refrigerant fluids not listed above, please contact Castel Technical Department.

CONSTRUCTION

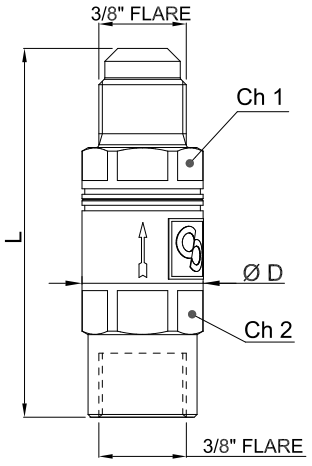
Castel manufactures four reservoirs calibrate pressure relief valves with differential pressures. A higher-pressure differential will increase the oil flow rate from the oil reservoir back to the compressor crankcase. The selection of the model must consider both the individual compressor crankcase pressures as well as the differential pressure range of the oil regulators.

The main parts of the valves are constructed with the following materials:

- Hot forged brass EN 12164 – CW 614N for body and cover Valves in series 3150W are equipped with laser welds between the body and the cover to ensure that the product is sealed hermetically.
- Austenitic stainless steel AISI 302 for the spring
- Laminated glass fibre fabric and PTFE for gasket seat seals

INSTALLATION

These valves are used to relieve pressure in the oil reservoir while maintaining a positive pressure differential between the reservoir and the compressor crankcase. This positive pressure ensures adequate oil supply to the oil level regulator. The calibrated pressure relief valve is mounted directly on the 3/8" SAE Flare connection of the reservoir and is piped to the suction line.



3150W/X01
3150W/X02
3150W/X03
3150W/X04

TABLE 6: General characteristics of oil reservoir pressure valves

Catalogue Number	SAE Flare Connections		Kv Factor [m³/h]	Pressure Differential [bar]	PS [bar]	TS [°C]		TAS [°C]		Dimensions and weights					Risk Category according to PED Recast
	IN	OUT				min.	max.	min.	max.	D	L	Ch1	Ch2	[g]	
3150W/X01	3/8"- F	3/8"- M	1,6	0,35	45	– 40	+150	– 40	+50	22	67	20	20	152	Art. 4.3
3150W/X02				1,4											
3150W/X03				3											
3150W/X04				7	140					35	96	32	32	394	

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