HR/HS

High side float regulator

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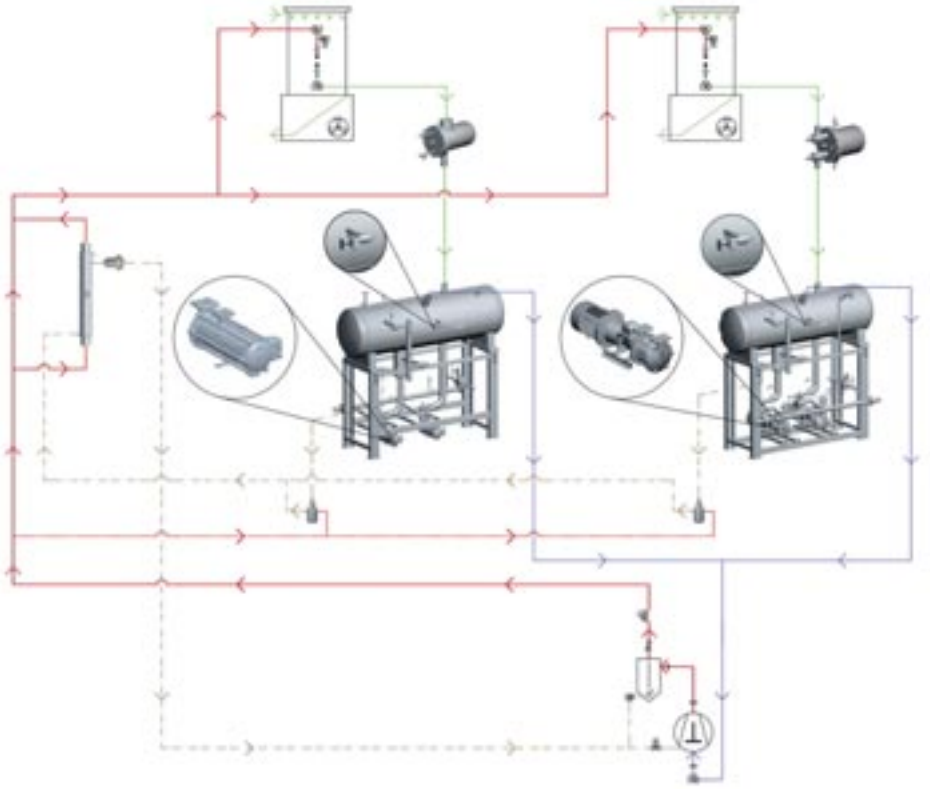
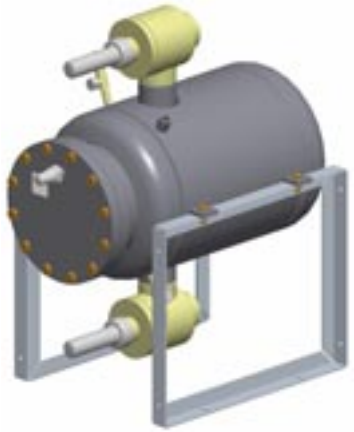


Principle of the high side control

The high side control offers a simple mechanical maintenance free solution to expanding liquid refrigerant from the high to the low pressure side of a refrigeration system without gas passing. From a technical and economic point of view this is the optimum and safest way of expanding refrigerant and handling condensate return.



Advantages

Filling capacity reduction

Condensate is always expanded to the low pressure side, which means during normal operation nearly the entire refrigerant charge is stored on the low pressure side. So high pressure receivers are not required.

Safety

Due to the mechanical design no wiring or additional controls are required. In the event of a power failure condensate is drained safely to the low pressure side, ensuring highest operational safety.

Efficiency

Since refrigerant is always drained by the float whenever condensate accumulates, lower condensing temperatures can be utilized without a need to consider other control criteria. Compared to a system operating with traditional expansion valves there is no need for sub-cooling liquid nor superheating the suction gas.
(Remark: energy savings of up to 13% are quite possible, i.e. with 5 K higher condensation temperature).

	diameter	depth	total height incl. valves	connections	weight	capacity
	(mm)	(mm)	(mm)	(DN)	(kg)	(kW)
HR1 BW	200	365	310	25	10	40*
HR1	200	425	440	25	13	95*
HR2	250	445	480	32	23	390*
HR3	345	555	640	50	54	1.160*
HR4	406	765	910	80	135	3.345*
HS30	290	655	510	100/50	49	1.045*
HS40	400	775	685	150/80	107	2.815*
HS50	406	765	855	200/80	135	4.745*
WP3HR-65	355	400	545	50	68	860**

* Refrigerant: Ammonia, To = -10 °C, Tc = +35 °C ** Refrigerant: Ammonia, To = +35 °C, Tc = +75 °C

Technical data

HR1 - HR4, HS50 and HR1BW

Max. allowable pressure PS:
25 bar between +75/-10 °C
18,75 bar between -10/-60 °C
Test pressure Pt: 37 bar oil pressure

HS30 - HS40

Max. allowable pressure PS:
40 bar between +75/-10 °C
30 bar between -10/-60 °C
Test pressure Pt: 59 bar oil pressure

WP3HR

Max. allowable pressure PS:
65 bar between +100/-10 °C
48,75 bar between -10/-60 °C
Test pressure Pt: 100 bar oil pressure

Stable plant operation

Pressure fluctuations are avoided by continuous condensate drainage, guaranteeing stable operation of the whole system.

Reduction in maintenance cost

During plant stand-still there will be slow pressure equalization when using float regulators with low pressure nozzles. Systems with only one compressor can be started from an unloaded condition without need for additional controls.

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