



Suction line accumulator

Heat exchanger suction accumulator Type PKR, CE



Applications

The function of Suction accumulator with heat exchanger is to put the pipes for high pressure high temperature refrigerant and low pressure low temperature refrigerant to one vessel to exchange high and low temperature, to cool or warming refrigerant. After the heat exchange, a better performance of the whole system and cooling effect achieved.

In air conditioning refrigeration, the refrigerant pipelines have high pressure and low pressure lines, the high pressure refrigerant with high temperature needs cooled, and the low pressure from evaporator needed to be separated to liquid and gas refrigerant, the liquid refrigerant need some time and temperature to be evaporated to gas and then enter to compressor. It avoids liquid slugging to protect compressor.

Features

- Corrosion resistant epoxy powder paint finish, can be used in all environment
- Sturdy steel shells for long life, solid copper connections
- If the evaporating temperature lower than -15°C in a refrigeration equipment, recommend to install a PKR Suction line accumulator.
- Allowable operating temperature: -40°C to $+120^{\circ}\text{C}$
- Max. working pressure: 4.2Mpa, Optional for R410a and CO₂ Refrigerant
- CE listed

Installation-Notes

The right selection and installation of a Suction Accumulator in the line is to install as close as possible to the compressor, which can assure adequate oil and liquid refrigerant return to the compressor and prevent the compressor from damage. By returning the liquid refrigerant and oil back to compressor, the accumulator also helps maintain system efficiency and proper crankcase oil levels.

Suction Accumulators can also prevent liquid refrigerant floodback, one of the most common causes of compressor failure.

WARNING:

Directing the flame away from the shell according to normal precautions. Using chill blocks, wet rags, or other suitable heat protection for the accumulator.

- Be sure the incoming refrigerant line connected to the connection marked “inlet” or “in” .
- Always install the accumulator upright vertically.
- Change the accumulator when a compressor is replaced.

The old accumulator may contain contaminants from the problem that caused compressor failure. There may also be considerable oil remaining from first compressor if a gradual loss of refrigerant caused the failure. This amount coupled with the oil in the rep compressor may lead to an oil over-charge condition.

Heat exchanger suction accumulator

Type PKR, CE

Specification

选型参数

Part No.	Low Temp. Side Conn.	Low Temp. Side Conn.	Dimension (mm)				Volume (L)	Diagram
			A	B	C	ΦD		
PKR-2404	1/2	3/8	254	52	52	102	1.5	Fig.5
PKR-2405	5/8	3/8	294	52	52	102	1.8	
PKR-2406	3/4	1/2	316	75	75	140	3.8	
PKR-2407	7/8	1/2	356	75	75	140	4.3	
PKR-2411	1-1/8	5/8	450	85	85	159	7.3	
PKR-2413	1-3/8	3/4	574	85	85	159	9.6	
PKR-2415	1-5/8	7/8	624	85	85	159	10.4	
PKR-2417	2-1/8	7/8	629	85	85	159	10.4	Fig.6
PKQ-208N04	1-1/8	1/2	450	85	42.5	159	7.4	
PKQ-208N05	1-1/8	5/8	450	85	42.5	159	7.4	
PKQ-209N05	1-3/8	5/8	574	85	42.5	159	9.8	
PKQ-209N06	1-3/8	3/4	574	85	42.5	159	9.8	
PKQ-210N06	1-5/8	3/4	624	85	42.5	159	9.8	
PKQ-210N07	1-5/8	7/8	624	85	42.5	159	9.8	
PKQ-1517N07	2-1/8	7/8	518	120	60	219	16	
PKQ-1517N09	2-1/8	1-1/8	518	120	60	219	16	
PKQ-221N09	2-1/8	1-1/8	576	120	60	273	28.5	

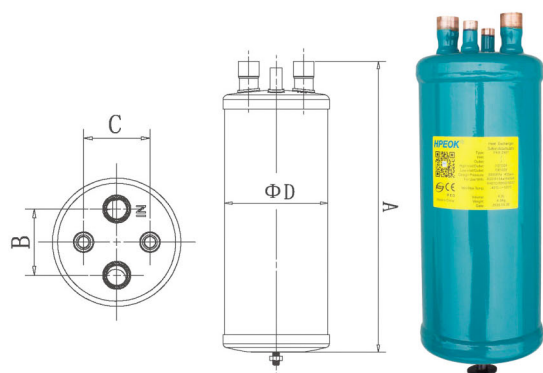


Fig.5

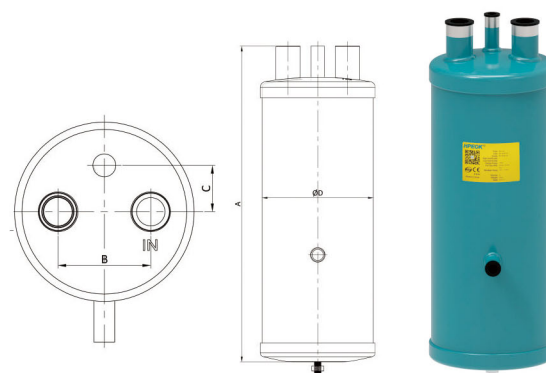


Fig.6

Specification

Part NO.	Refrigerating capacity on basis of below evaporate temperature (Kw)						Refrigerant capacity (kg)	
	R22		R134a		R404A		R22/R134a	R404A
	-18°C	5°C	-18°C	5°C	-18°C	5°C	5°C	
PKR-2404	3.2	7.0	2.17	4.3	2.8	4.6	1.73	1.60
PKR-2405	4.9	10.5	2.8	6.0	4.2	7.0	2.03	1.88
PKR-2406	6.3	14.1	3.2	8.1	5.3	9.2	4.02	3.72
PKR-2407	11.6	25.7	6.3	14.0	9.5	16.2	4.78	4.43
PKR-2411	18.9	41.5	10.9	25.3	15.5	26.7	8.60	8.00
PKR-2413	29.9	66.1	16.2	37.6	25.3	42.9	11.23	10.40
PKR-2415	41.0	79.2	24.1	50.8	32.6	53.0	12.36	11.45
PKR-2417	49.6	92.4	35.4	71.7	42.8	75.3	17	15

The Heat exchanger suction line accumulators are suitable with CFC, HFC & HCFC Refrigerants and associated oils. To cover the demand for components with an increased working pressure for R410a and as well for CO₂ applications, HPEOK provides customized Accumulator on request.

3 in1 – Heat exchanger, Receiver, Accumulator Type PKH, CE

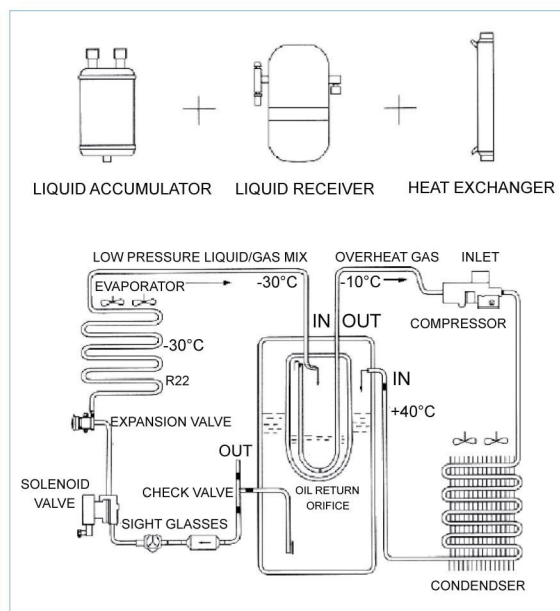


Applications

PKH type combines heat exchanger, liquid receiver and suction line accumulator to one vessel, it can control liquid flow rate better, get better performance for refrigerating capacity and ensure compressor operation best.

Features

- Energy saving: Recycling the wasting undercooling and electric power caused by water dropping of the low-pressure side of accumulator to high-pressure liquid receiver, thus subcooling increased and electric power saved.
- Better refrigeration effect: Over refrigerating and proper over heating increased by heat exchanging between the low pressure accumulator and high pressure receiver, thus circulating enthalpy value increased before entering expansion valve and gets best refrigerating capacity when evaporating.
- Liquid compression avoided: Ensure no liquid returns to compressor and cause liquid compression.
- No water dropping and thermal insulation not required
- Labor, materials and installation space saving.
- Aesthetic improved, no mustiness, and non-pollution.



Technical

- Corrosion resistant epoxy powder paint finish, can be used in all environment.
- Sturdy steel shells for long life, solid copper connections.
- 500 hours of salt spray tested.
- Internal vessel: Maximum working pressure: 3.0Mpa = 435 psig.
- external vessel: Maximum working pressure: 3.4Mpa = 493 psig.
- CE listed

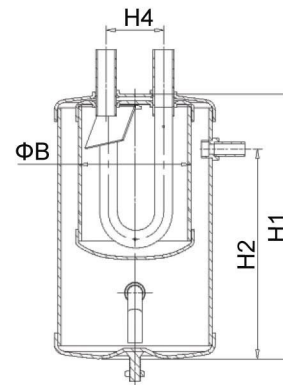
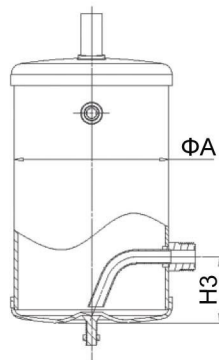
3 in1 – Heat exchanger, Receiver, Accumulator Type OLCE

Specification

Part No.	Compressor horsepower (HP)	Evaporating Temp.	High Pressure Receiver Volume	High Pressure Receiver Volume
PKH-304	1	+5	0.9	0.5
	3/4	-10	0.9	0.5
	1/2	-30	0.9	0.5
PKH-305	2	+5	1.9	0.9
	1.5	-10	1.9	0.9
	1	-30	1.9	0.9
PKH-307	5	+5	3.1	2.4
	3	-10	3.1	2.4
	2	-30	3.1	2.4

Specification

Part No.	Compressor horsepower (HP)	Evaporating Temp.	High Pressure Receiver Volume	High Pressure Receiver Volume
PKH-411	10	+5	4.5	4.2
	7.5	-10	4.5	4.2
	5	-30	4.5	4.2
PKH-513	15	+5	5.8	5.2
	10	-10	5.8	5.2
	7.5	-30	5.8	5.2
PKH-515	20	+5	8	6.3
	15	-10	8	6.3
	10	-30	8	6.3
PKH-721	40	+5	12	10
	30	-10	12	10
	20	-30	12	10



Specification

Part No.	High pressure Conn.		Low Pressure Conn.		H1		H2		H3		H4		Φ A		Φ B	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
PKH-304	3/8	9.7	1/2	12.9	9.6	245	7.3	185	2.3	60	2.0	52	4.0	102	3.0	76
PKH-305	3/8	9.7	5/8	16.0	9.4	240	7.5	190	2.3	60	2.0	52	5.5	140	4.0	102
PKH-307	3/8	9.7	7/8	22.7	13.3	340	10.6	270	3.14	80	2.8	70	6.2	159	5.0	127
PKH-411	1/2	12.9	1-1/8	28.8	13.6	346	9.8	248	3.0	76	3.1	80	8.6	219	6.5	165
PKH-513	5/8	16.0	1-3/8	35.0	16.0	406	12.1	308	3.0	76	3.1	80	8.6	219	6.5	165
PKH-515	5/8	16.0	1-5/8	42.0	17.5	445	14.8	375	3.0	76	3.1	80	8.6	219	6.5	165
PKH-721	7/8	22.4	2-1/8	54.0	19.3	490	14.5	370	4.3	120	4.1	105	10.7	273	8.6	219

Refrigerant

The 3 in 1 suction line accumulators are suitable with CFC, HFC & HCFC Refrigerants and associated oils. To cover the demand for components with an increased working pressure for R410a and as well for subcritical for CO₂ applications, HPEOK provides customized Accumulator on request.

Suction line accumulator

Type PKQ, CE



Applications

Compressors are extremely susceptible to damage from liquid refrigerant. Excessive liquid refrigerant return may cause not only oil dilution but complete loss of the compressor oil charge which results in equipment damage due to lack of proper lubrication. The primary function of a Suction Line Accumulator is to prevent a sudden surge of liquid refrigerant, or oil, from returning down the suction line and into a compressor. The suction line accumulator is a temporary reservoir for liquid refrigerant and oil.

To avoid liquid slugging, the refrigerant must be converted to gas before returning to compressor, thus the refrigerant must be separated to liquid and gas before entering compressor, only gas allowed to enter to compressor. The liquid refrigerant evaporates slowly in the accumulator and enters to compressor after converting to gas. In order to return remaining oil to compressor, there is an oil return orifice in the bottom of U tube of the accumulator. The remaining oil in system will flow to accumulator and return to compressor with gas refrigerant.

Suction line
accumulator

Suction Line Accumulators:

1. Prevent compressor failure due to liquid slugging.
2. Assure adequate oil return and refrigerant vapor before return compressor.
3. Assure min. pressure drop while maintaining the maximum refrigerant flow.

Structure

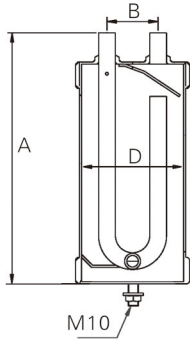
The accumulator must return refrigerant and oil to the compressor at a sufficient rate to maintain both system operating efficiency and proper crankcase oil level. To make sure these tasks are accomplished, system designers must consider the following items:

- A typical accumulator with an inlet deflector, the inlet to the U-tube is located behind the deflector to prevent liquid entering into compressor and damaging it.
- The accumulator must have sufficient internal volume.
- The selected U-tube design to minimize pressure drop at high flow rates yet provide adequate oil return at low flow rates. A properly sized and protected oil return orifice is required to ensure positive oil (and refrigerant) return to the compressor.
- A properly sized and protected oil return orifice matched with system capacity assures optimum liquid refrigerant and oil that flow back to compressor.
- Other features include a mesh screen to protect the oil return orifice, an anti-siphon hole located near the outlet of the U-tube prevents liquid from siphoning into the outlet tube and compressor during an off-cycle.
- Heat exchanger and Heat pump options.

Features

- Corrosion resistant epoxy powder paint finish, can be used in all environment.
- 500 hours of salt spray tested.
- Allowable operating temperature: $-40^{\circ}\text{C} \sim +120^{\circ}\text{C}$
- Maximum working pressure: 3.0Mpa, Optional for R410a and CO₂ Refrigerant
- CE listed

Suction line accumulator Type PKQ, CE

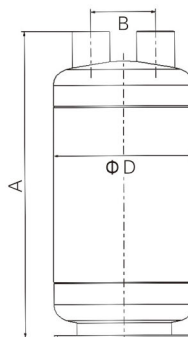
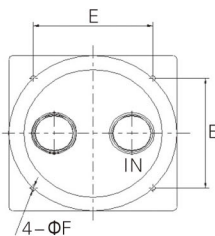


Suction line
accumulator

Specification

Part No.	Inlet & Outlet (in)	Dimension(mm)			Volume (L)
		A	B	ΦD	
PKQ-204	1/2	254	52	102	1.6
PKQ-205	5/8	294	52	102	1.9
PKQ-206	3/4	316	75	140	3.9
PKQ-207	7/8	356	75	140	4.4
PKQ-208	1-1/8	450	85	159	7.4
PKQ-209	1-3/8	574	85	159	9.8
PKQ-210	1-5/8	624	85	159	10.5
PKQ-595	5/8	257	70	127	2.5
PKQ-596	3/4	257	70	127	2.5
PKQ-597	7/8	262	70	127	2.5
PKQ-5126	3/4	332	70	127	3.4
PKQ-5127	7/8	337	70	127	3.4
PKQ-5137	7/8	358	70	127	3.7
PKQ-5139	1-1/8	363	70	127	3.7
PKQ-5179	1-1/8	465	70	127	4.8
PKQ-51711	1-3/8	465	70	127	4.8
PKQ-61411	1-3/8	390	85	159	6.2
PKQ-62013	1-5/8	548	85	159	9.2

Base Sketch



Specification

Part No.	Inlet & Outlet (in)	Dimension(mm)					Volume
		A	B	ΦD	E	F	
PKQ-1817	2-1/8	540	100	219	200	10.8	18
PKQ-2117	2-1/8	495	120	273	-	10.8	21
PKQ-221	2-1/8	586	120	273	194	10.8	26
PKQ-225	2-5/8	763	127	273	194	10.8	34
PKQ-231	3-1/8	767	150	325	230	10.8	48
PKQ-7034	4-1/4	630	200	450	390	12.5	70

Suction line accumulator

Type PKQ, CE

Specification

Part NO.	Refrigerating capacity on basis of below evaporate temperature (Kw)							
	R22		R134a		R404A		R410A	
	-18°C	5°C	-18°C	5°C	-18°C	5°C	-18°C	5°C
PKQ-204	3.2	7.0	2.2	4.3	2.8	4.6	4.9	10.6
PKQ-205	4.9	10.5	2.8	6.0	4.2	7.0	7.4	16.0
PKQ-206	6.3	14.1	3.2	8.1	5.3	9.2	9.6	21.4
PKQ-207	11.6	25.7	6.3	14.0	9.5	16.2	17.6	39.1
PKQ-208	18.9	41.5	10.9	25.3	15.5	26.7	28.7	63.1
PKQ-209	29.9	66.1	16.2	37.6	25.3	42.9	45.4	100.5
PKQ-210	45.0	101.3	25.7	59.8	37.6	64.0	68.4	154.0
PKQ-595	5.1	11.8	2.7	7.1	4.5	7.2	7.8	17.9
PKQ-596	6.3	14.1	3.2	8.1	5.3	9.2	9.6	21.4
PKQ-597	11.6	25.7	6.3	14.0	9.5	16.2	17.6	39.1
PKQ-5126	6.3	14.1	3.2	8.1	5.3	9.2	9.6	21.4
PKQ-5127	11.6	25.7	6.3	14.0	9.5	16.2	17.6	39.1
PKQ-5137	11.6	25.7	6.3	14.0	9.5	16.2	17.6	39.1
PKQ-5139	18.9	41.5	10.9	25.3	15.5	26.7	28.7	63.1
PKQ-5179	18.9	41.5	10.9	25.3	15.5	26.7	28.7	63.1
PKQ-51711	29.9	66.1	16.2	37.6	25.3	42.9	45.4	100.5
PKQ-61411	29.9	66.1	16.2	37.6	25.3	42.9	45.4	100.5
PKQ-62013	45.0	101.3	25.7	59.8	37.6	64.0	68.4	153.5



Installation-Notes

The right selection and installation of a Suction Accumulator in the line is to install as close as possible to the compressor, which can assure adequate oil and liquid refrigerant return to the compressor and prevent the compressor from damage. By returning the liquid refrigerant and oil back to the compressor, the accumulator also helps maintain system efficiency and proper crankcase oil levels.

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– WARNING:

Directing the flame away from the shell according to normal precautions. Using chill blocks, wet rags, or other suitable heat protection for the accumulator.

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- Always install the accumulator upright vertically.
- Change the accumulator when a compressor is replaced.

The old accumulator may contain contaminants from the problem that caused the compressor failure. There may also be considerable oil remaining from the first compressor if a gradual loss of refrigerant caused the failure. This amount coupled with the oil in the replacement compressor may lead to an oil overcharge condition.