High Performance Helical Oil Separator Type PKW, CE

Helical High performance oil separators

The centrifugal flow path of the helical oil separator achieves approximately 99% gas and oil separation efficiency by low pressure drop.

The test by an independent laboratory found that only 0.006% oil (by volume) discharged to the system after passing the helical oil separator.

The helical oil separator can help to reduce the vibration and noise caused by compressor.

While the parallel system in unloading or changing energy, it can still keep high separation efficiency because of the unique design of helical guide plate, which increases the contact area.

Technical data

- Design Working pressure: 4.7 MPa
- Working temperature: –10℃ ~ 120℃
- For use with HFC, HCFC refrigerants and their associated oils, optional for R410A and R744 (CO_2)
- CE listed

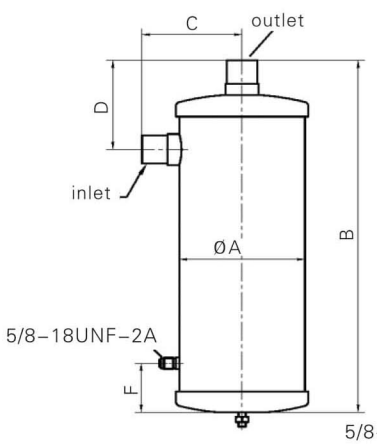
Specification

Part NO.	Refrigerating flow capacity (Kw)							
	R404A/R507		R22/R407C		R134a		R410A	
	-40℃	5℃	-40℃	5℃	-40℃	5℃	-40℃	5℃
PKW–0404	5.2	7.0	5.3	7.0	3.5	4.9	8.2	9.2
PKW–0405	14.1	19.4	15.8	19.4	10.3	13.6	24.0	27.0
PKW–0407	23.0	30.0	24.6	28.2	16.0	19.2	38.0	43.5
PKW–0409	29.8	38.7	31.7	37.0	20.6	25.8	49.0	55.0
PKW–0611	42.2	52.8	44.8	49.3	29.0	34.5	68.0	76.0
PKW–0613	52.5	66.0	56.0	62.0	35.0	43.3	85.0	95.0
PKW–0617	84.3	108.0	87.0	105.0	56.4	73.4	132.0	148.0
PKW–0609F	42.2	52.8	44.8	49.3	29.0	34.5	68.0	76.0
PKW–0611F	42.2	52.8	44.8	49.3	29.0	34.5	68.0	76.0
PKW–0613F	52.5	66.0	56.0	62.0	35.0	43.3	85.0	95.0
PKW–0617F	84.3	108.0	87.0	105.0	56.4	73.4	N/A	N/A
PKW–0813F	84.4	109.0	88.0	106.0	57.0	74.0	N/A	N/A
PKW–0817F	109.0	144.0	123.0	137.0	80.0	165.0	N/A	N/A
PKW–0821F	157.0	192.0	230.0	253.0	80.0	165.0	N/A	N/A
PKW–1017F	201.0	224.0	190.0	212.0	117.0	150.0	N/A	N/A
PKW–1021F	225.0	292.0	250.0	281.0	162.0	197.0	N/A	N/A
PKW–1025F	294.0	369.0	334.0	383.0	198.0	235.0	N/A	N/A
PKW–1221F	352.0	461.0	394.0	447.0	256.0	313.0	N/A	N/A
PKW–1225F	352.0	461.0	394.0	447.0	256.0	313.0	N/A	N/A

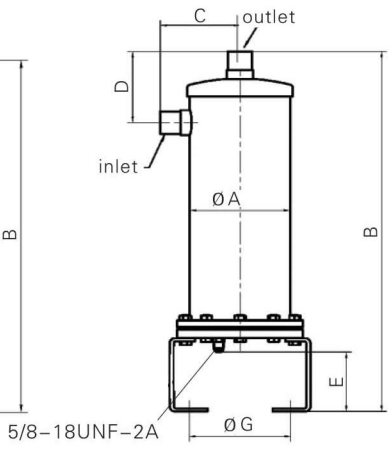
High Performance Helical Oil Separator
Type PKW, CE

Specification

Part NO.	Connection (in)	Diemensions(mm)							Volume (L)	Pre-charge (L)
		ΦA (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	ΦG (mm)		
PKW-0404	1/2" ODF	102	359	83	83	N/A	60	N/A	2.4	0.4
PKW-0405	5/8" ODF	102	377	83	84	N/A	60	N/A	2.5	0.4
PKW-0407	7/8" ODF	102	434	91	98	N/A	60	N/A	2.8	0.4
PKW-0409	1-1/8" ODF	102	481	91	98	N/A	60	N/A	3.2	0.4
PKW-0611	1-3/8" ODF	159	476	127	121	N/A	66	N/A	7.8	1.1
PKW-0613	1-5/8" ODF	159	476	127	121	N/A	66	N/A	7.8	1.1
PKW-0617	2-1/8" ODF	159	482	134	137	N/A	66	N/A	7.8	1.1
PKW-0609F	1-1/8" ODF	159	611	127	121	124	N/A	143	7.5	0.7
PKW-0611F	1-3/8" ODF	159	611	127	121	124	N/A	143	7.5	0.7
PKW-0613F	1-5/8" ODF	159	611	127	121	124	N/A	143	7.5	0.7
PKW-0617F	2-1/8" ODF	159	617	134	137	124	N/A	143	7.5	0.7
PKW-0813F	1-5/8" ODF	219	671	157	178	100	N/A	144	15.2	0.7
PKW-0817F	2-1/8" ODF	219	678	157	185	100	N/A	144	15.2	0.7
PKW-0821F	2-5/8" ODF	219	678	157	185	100	N/A	144	15.2	0.7
PKW-1017F	2-1/8" ODF	273	678	200	214	100	N/A	191	32.5	0.7
PKW-1021F	2-5/8" ODF	273	858	200	214	100	N/A	191	32.5	0.7
PKW-1025F	3-1/8" ODF	273	858	200	214	100	N/A	191	32.5	0.7
PKW-1221F	2-5/8" ODF	325	902	226	241	100	N/A	203	47.8	0.7
PKW-1225F	3-1/8" ODF	325	902	226	241	100	N/A	203	47.8	0.7



0404~0617



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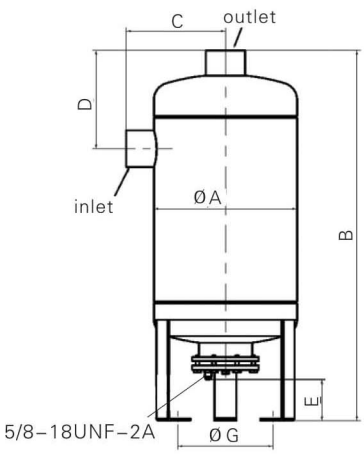
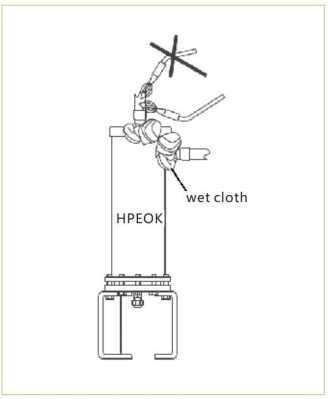


0813F~1225F

Installation

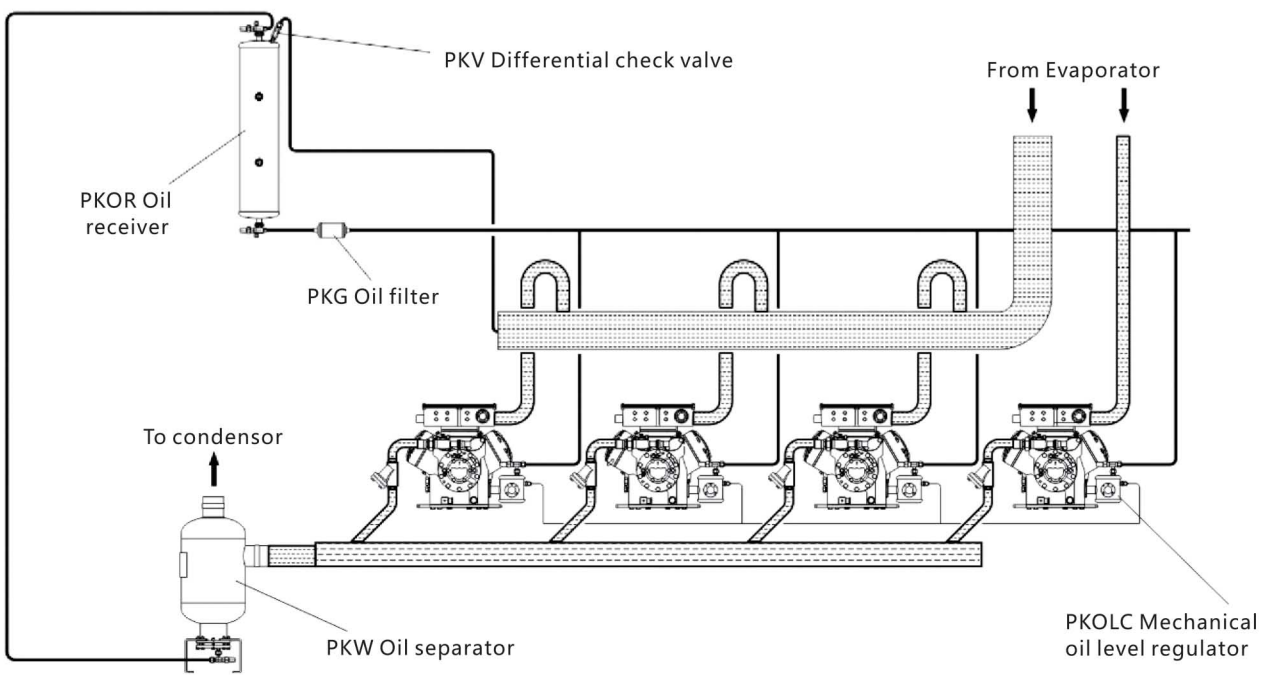
An initial charge of oil should be added to the oil separator before install it. The initial charge refers to general characteristics of oil separators or to instruction sheet for the proper amount of oil.
Oil pre–charge is very important; failure to pre–charge separator sump may result in damage to the oil return float mechanism.

In order to prevent the refrigerant return from condenser, during the off cycle of the system, recommend to install a check valve between the condenser and oil separator outlet connection.



Oil separator performs best when operating at or near the compressor discharge temperature. When installing the oil separator, to choose a position to avoid, as far as possible, chilling of the shell, which may lead to condensing of liquid within the separator.
If it's not possible, it is advisable to supply the separator with some better solutions to prevent the refrigerant in the system from condensing in the shell, such as insulation, strap heater, or others.

Different evaporate temperature system



Traditional oil return by pressure higher slihtly than suction line

Main Feature

- High flow capacity with low pressure drop
- Particle retention down to 3 microns
- High flow capacity with low pressure drop
- Suitable replacement for individual Oil Strainers on oil return line

Technical Specifications

Maximum working pressure = 507 PSI (35 Bar)
Allowable operating temperature = –10℃ ~ +100℃
For use with HFC and HCFC refrigerants and their associated oils, as well as other industrial fluids non–corrosive to steel and copper.

Application

HPEOK Refrigeration's Oil Filter can be used in both Low and High Pressure Oil Management Systems, they can filtrate 99% of 3μm particle but keep enough flow rate to maintain low pressure drop. The unique drying features of the PKG model are particularly suited for systems using POE oil. This type of oil is more hydroscopic than mineral oil. This means that POE oil absorbs moisture at a much higher rate. Moisture in a refrigeration system can produce problems and/or harmful conditions.

One PKG–08 or PKG–120A model can be fitted in the oil return line between the Oil Separator and Oil Receiver, instead of fitting one Oil Strainer per Oil Level Regulator. These models will also remove more debris than traditional oil strainers.

Materials of Construction

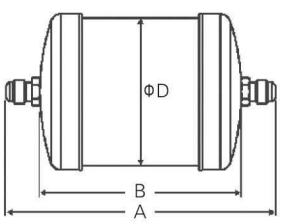
All pressure bearing components including shell, caps, and connection fittings are made of carbon steel. The internal spring is made of steel.

Installation – Notes

- The Oil Filters must be installed in accordance with the flow direction arrow.
- Units should be replaced after a 15 PSI (1 Bar) pressure drop has been detected. Recommend to install valves on either side of the filter to ease replacement.
- For low pressure oil Management systems, oil filters should be located between oil separator and oil receiver not between the oil receiver and the oil level regulator.

Specification

Part No	Connection (in)		refrigerating capacity(Kw)				Dimension(mm)		
	Solder	Flare	R404A/507	R22/R407C	R134a	R410A	A	B	ΦD
PKG–083		3/8	15.7	23.7	21.8	36.0	155	98	63.5
PKG–083S	3/8		19.8	29.8	27.4	45.2	146		
PKG–084		1/2	15.7	23.7	21.8	36.0	163		
PKG–084S	1/2		19.8	29.8	27.4	45.2	148		
PKG–085		5/8	19.8	29.8	27.4	45.2	146		



PKG-120

Oil Separator
Type PKW, CE

Application

The Oil separators designed for installation on commercial refrigerating systems and on civil and industrial conditioning plants can protect systems. When the compressor is running, the outlet of compressor always has lots of refrigerant oil. If too much oil moves to the system, it will affect the flow control components and the performance of evaporator and condenser.

The oil separator installed on the discharge line of the compressor intercepts the oil mixed with compressed gas and returns it to the oil receiver or directly to the compressor crankcase thus assuring an efficient lubrication of its moving parts. Furthermore, the oil separator maintains a high coefficient of condenser and evaporator performance by almost completely removing oil deposits from their exchange surfaces. Moreover, the oil separator, damping the valves pulsations, reduces system noise with an open or semi-hermetic compressor.

The use of an oil separator leads to:
- A longer service life of the compressor.
- A better performance of the whole system with consequent energy saving.
- A much quieter operation by reducing pulsations.

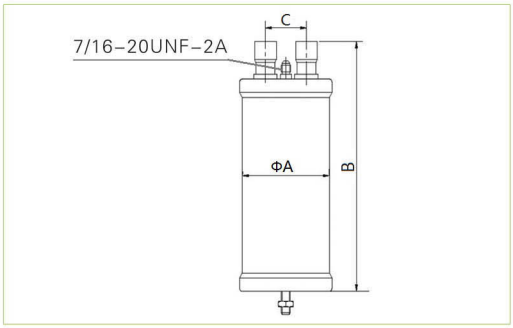
Technical data

- Design Working pressure: 4.8 MPa (48 bar)
- Working temperature: –10℃ ~ +120℃
- For use with HFC & HCFC Refrigerants (R134a, R404A, R507, R407A, R407C, R22 etc). To cover the demand for components with an increased working pressure for R410a and as well for subcritical for CO_2 applications, HPEOK provides customized oil separators on request.
- CE listed

Construction

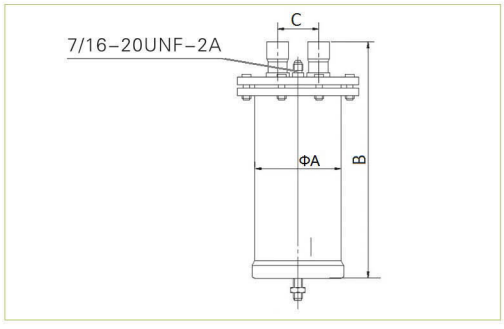
HPEOK manufactures two types of oil separators: Closedtype and Demountable type.
- Separators series 55/53 are closed type and they cannot be dismantled from the system, except cutting the piping.
- Separators series 56/63 are demountable type.

The internal device is simple in order to assure a trouble-free long operation. Appropriate metallic screens, placed on the inlet and outlet, rapidly reduce gas speed, and create the conditions required for the separation of the oil from the refrigerant. A float operated needle valve, set on the bottom of the vessel, returns the oil to the crankcase of compressor.



Specification

Part NO.	Connection (in)	A(mm)	B(mm)	C(mm)	Volume (L)	Pre-charge (L)
PKW-55833	3/8	102	279	48	1.8	0.6
PKW-55824	1/2	102	279	48	1.8	0.6
PKW-55855A	5/8	102	338	48	2.2	0.6
PKW-55855	5/8	102	378	48	2.5	0.6
PKW-55866	3/4	102	378	48	2.5	0.6
PKW-55877A	7/8	102	384	48	2.6	0.6
PKW-55877	7/8	102	460	48	3.1	0.6
PKW-55888	1	102	494	48	3.4	0.6
PKW-55889A	1-1/8	102	414	48	2.8	0.6
PKW-55889	1-1/8	102	494	48	3.4	0.6
PKW-559011	1-3/8	102	524	48	3.5	0.6
PKW-569009	1-1/8	159	394	75	6.4	0.8
PKW-569011	1-3/8	159	394	75	6.4	0.8
PKW-569213	1-5/8	159	480	75	7.8	0.8
PKW-569417	2-1/8	159	485	75	7.8	0.8



Specification

Part NO.	Connection (in)	A(mm)	B(mm)	C(mm)	Volume (L)	Pre-charge (L)
PKW-5301	1/2	102	275	48	1.7	0.6
PKW-5302	5/8	102	370	48	2.3	0.6
PKW-5303	7/8	102	455	48	3.0	0.6
PKW-5304	1-1/8	102	490	48	3.2	0.6
PKW-5305	1-3/8	102	520	48	3.4	0.6
PKW-5306	1-5/8	102	525	48	3.4	0.6
PKW-6302	1-1/8	159	404	75	5.9	0.8
PKW-6303	1-3/8	159	404	75	5.9	0.8
PKW-6304	1-5/8	159	490	75	7.4	0.8
PKW-6305	2-1/8	159	495	75	7.4	0.8

Refrigerating flow capacity (KW)

Specification

Part NO.	Refrigerating flow capacity (Kw)											
	R404A/507			R22/R407C			R134a			R410a		
	−40℃	−20℃	5℃	−40℃	−20℃	5℃	−40℃	4.8	5℃	−40℃	−20℃	5℃
PKW−55833	5.1	6.0	6.8	5.0	6.0	6.8	3.1	4.2	6.0	7.8	9.3	10.3
PKW−55824	5.3	6.2	7.0	5.3	6.2	7.0	3.2	4.5	6.2	8.1	9.4	10.6
PKW−55855A	14.4	16.4	19.3	15.8	17.5	19.3	11.4	13.4	15.8	24.0	26.6	29.3
PKW−55855	14.4	16.4	19.3	15.8	17.5	19.3	11.4	13.4	15.8	24.0	26.6	29.3
PKW−55866	14.6	16.6	19.5	16.0	17.8	19.6	11.6	13.7	15.9	24.2	26.8	29.3
PKW−55877A	22.8	25.2	28.8	24.6	26.2	28.1	16.7	19.3	22.4	37.4	39.8	42.7
PKW−55877	22.8	25.2	28.8	24.6	26.2	28.1	16.7	19.3	22.4	37.4	39.8	42.7
PKW−55888	23.3	25.7	29.3	25.1	26.7	28.6	17.2	19.8	22.9	37.9	40.3	43.2
PKW−55889A	29.0	33.2	27.0	31.6	34.2	36.8	21.3	26.0	29.8	48.0	52.0	56.1
PKW−55899	30.0	33.4	37.4	31.7	34.3	37.0	22.4	26.3	29.9	48.2	52.1	56.2
PKW−559011	36.7	43.3	49.0	40.4	43.6	47.5	28.1	33.6	40.4	61.4	66.3	72.2
PKW−569009	41.0	45.2	50.8	45.2	47.4	49.2	33.4	40.4	48.4	68.7	72.0	74.8
PKW−59011	41.0	45.2	50.8	45.2	47.4	49.2	33.4	40.4	48.4	68.7	72.0	74.8
PKW−569213	51.0	53.7	65.1	56.3	48.9	63.3	41.3	48.4	56.3	85.6	89.5	96.2
PKW−569214	88.5	98.4	108.6	91.4	102.3	105.5	63.3	7.0	88.9	N/A	N/A	N/A

Specification

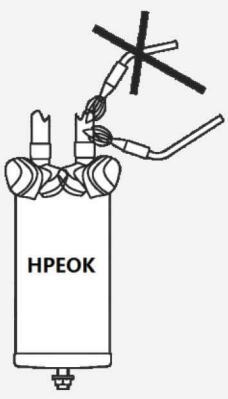
Part NO.	Refrigerating flow capacity (Kw)											
	R404A/507			R22/R407C			R134a			R410a		
	-40℃	-20℃	5℃	-40℃	-20℃	5℃	-40℃	4.8	5℃	-40℃	-20℃	5℃
PKW−5301	5.3	6.2	7.0	5.3	6.2	7.0	3.2	4.5	6.2	8.1	9.4	10.6
PKW−5302	14.4	16.4	19.3	15.8	17.5	19.3	11.4	13.4	15.8	24.0	26.6	29.3
PKW−5303	22.8	25.2	28.8	24.6	26.2	28.1	16.7	19.3	22.4	37.4	39.8	42.7
PKW−5304	30.0	33.4	37.4	31.7	34.3	37.0	22.4	26.3	29.9	48.2	52.1	56.2
PKW−5305	36.7	43.3	49.0	40.4	43.6	47.5	74.8	33.6	40.4	61.4	66.3	72.2
PKW−6302	41.0	45.2	50.8	45.2	47.4	49.2	33.4	40.4	48.4	68.7	72.2	74.8
PKW−6303	41.0	45.2	50.8	45.2	47.4	49.2	33.4	40.4	48.4	68.7	72.2	74.8
PKW−6304	51.0	53.7	65.1	56.3	58.9	63.3	41.3	48.4	56.3	85.6	89.5	96.2
PKW−6305	88.5	98.4	108.6	91.4	102.3	105.5	63.3	7.0	88.9	N/A	N/A	N/A

Installation

The oil separators should be installed in the discharge line between the compressor and condenser, and mounted in a vertical position securely and close to the compressor reasonably.

In order to prevent the refrigerant return from condenser, during the off cycle of the system, recommend to install a check valve between the condenser and oil separator outlet connection. Oil separator performs best when operating at or near the compressor discharge temperature.

When installing the oil separator, choose a position to avoid, as far as possible, chilling of the shell, which may lead to condensing of liquid within the separator.



If it is not possible, it's advisable to supply the separator with some better solutions to prevent the refrigerant in the system from condensing in the shell, such as insulation, strap heater, or others.

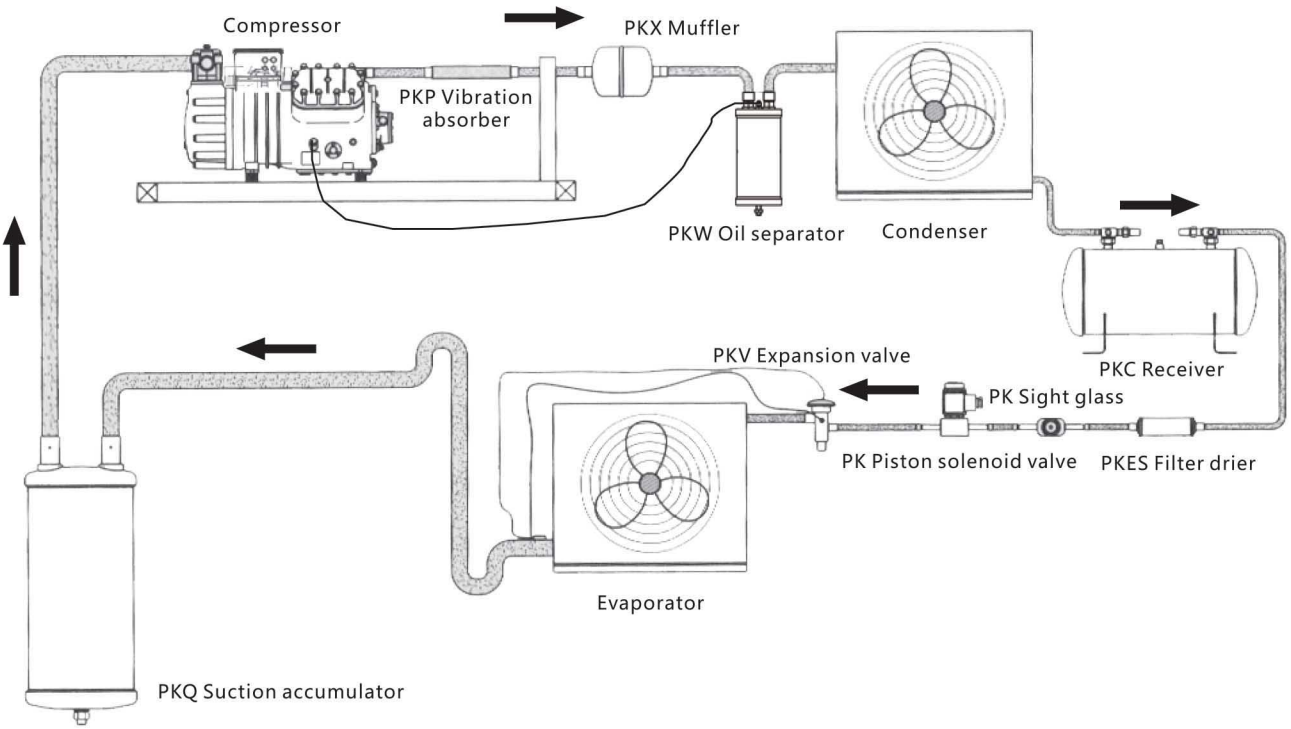
An initial charge of oil should be added to the oil separator before install it. The initial charge refers to general characteristics of oil separators or to instruction sheet for the proper amount of oil.

Oil pre–charge is very important; failure to pre–charge separator sump may result in damage to the oil return float mechanism.

Use the same type of oil that is in the compressor crankcase.
Pre–charge oil mass:
– 55833→559011 & 5301→5306: 600ML
– 569011→569417 & 6303→6305: 800ML

Due to the refrigerating system, the return line may be run from the oil fitting to:
– The compressor crankcase
– The suction line upstream the compressor or upstream the receiver, if present
– The oil receiver if oil control system is being used.

A sight glass can be installed in the oil line where the oil is flowing through the tube, to check the correct working of the oil separator.



Refrigeration system flow diagram

Oil Separator
Type PKW, CE

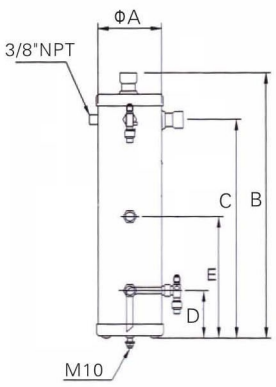
Applications

This oil separator receivers are designed to be installed in high pressure oil management systems; it features a centrifugal flow path to achieve perfect oil separation with lowest pressure drop.

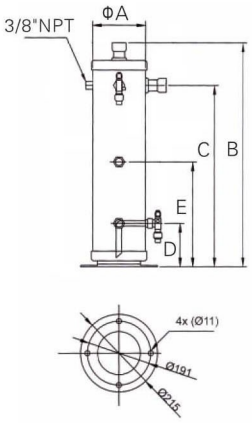
In contrast to conventional oil separators they do not possess an internal float valve. For the design of high pressure oil management systems, suitable electronic oil level regulators type OLCE is available.

Technical data

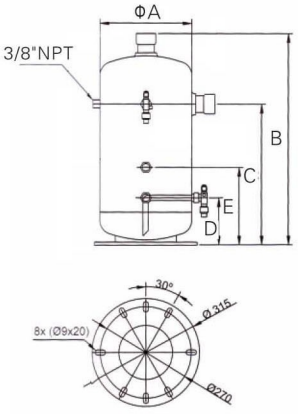
- For use with HFC & HCFC Refrigerants
- Design Working pressure: 3.0 MPa (30 bar)
- Working temperature: –10℃ ~ +120℃
- CE listed



PKW–40BX



PKW–62BX



PKW–86/107BX

Specification

Part No.	Connection (in)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Volume (L)	Oil outlet	Oil receiver (L)
PKW–4004BX	1/2	102	495	402	100	260	3	3/8"	1.9
PKW–4005BX	5/8	102	495	402	100	260	3	3/8"	1.9
PKW–4007BX	7/8	102	580	460	100	260	4	3/8"	1.9
PKW–4009BX	1–1/8	102	700	580	135	330	5	3/8"	2.5
PKW–6211BX	1–3/8	159	640	520	155	270	10	3/8"	4.3
PKW–6213BX	1–5/8	159	740	610	155	370	11.5	3/8"	6.1
PKW–6217BX	2–1/8	159	840	700	155	460	13.5	3/8"	7.8
PKW–8613BX	1–5/8	219	700	510	160	275	20	3/8"	8.6
PKW–8617BX	2–1/8	219	700	510	160	275	20	3/8"	8.6
PKW–8621BX	2–5/8	219	700	495	160	275	20	3/8"	8.6
PKW–10717BX	2–1/8	273	890	620	150	280	41	3/8"	13.3
PKW–10721BX	2–5/8	273	890	620	150	280	41	3/8"	13.3
PKW–10725BX	3–1/8	273	890	620	150	280	41	3/8"	13.3

Oil Separator Receiver
Type PKW, CE

Feature

- Low space consumption, mounting effort and high efficient oil separator ability.
- A high level oil sight glass & low level oil sight glass equipped in receiver, the standard oil level should be between these two sight glasses.
- A inside demister which woven by stainless steel wire makes the mist oil get good separation.
- The helical guide plate allows the centrifugal flow path achieving high efficiency oil and gas separation effect by low pressure drop.

Specification

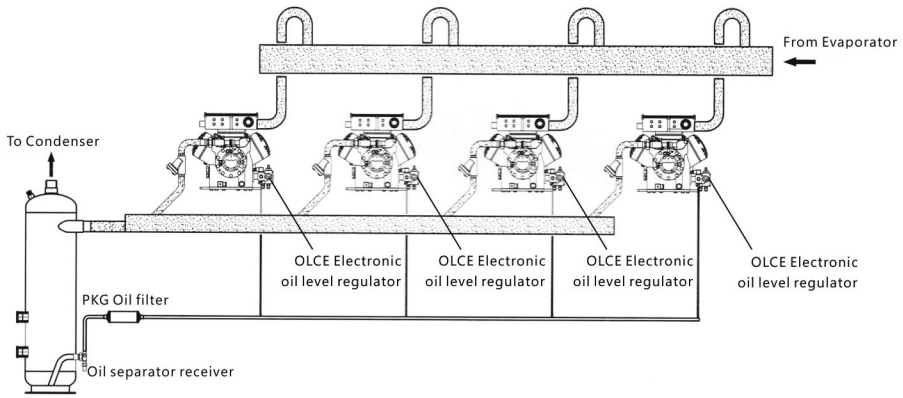
Part No.	Refrigerating capacity (Kw)								
	R404A/507			R22/R407C			R134a		
	-40℃	-20℃	5℃	-40℃	-20℃	5℃	-40℃	-20℃	5℃
PKW-4004BX	17.1	18.2	19.7	20.1	23.2	24.1	15.3	16.7	17.9
PKW-4005BX	17.1	18.2	19.7	20.1	23.2	24.1	15.3	16.7	17.9
PKW-4007BX	20.2	21.3	22.1	23.8	25.1	26.0	17.8	18.8	19.5
PKW-4009BX	33.9	36.2	37.8	39.9	42.0	44.5	29.9	31.5	33.4
PKW-6211BX	48.8	51.4	54.8	57.4	60.5	64.5	43.1	45.4	48.4
PKW-6213BX	68.0	74.5	76.3	80.0	87.7	89.8	60.0	65.5	67.4
PKW-6217BX	104.6	113.4	115.7	123.0	133.4	136.1	92.3	100.1	102.2
PKW-8613BX	98.0	104.5	106.3	110.0	117.7	119.8	90.0	95.5	97.4
PKW-8617BX	144.6	151.6	161.5	170.1	178.3	190.0	127.5	133.7	142.5
PKW-8621BX	280.6	312.6	326.0	330.2	367.8	383.5	247.6	275.6	287.6
PKW-17017BX	236.0	295.7	300.2	280.7	303.5	352.7	210.8	227.6	259.1
PKW-10721BX	306.0	325.7	350.3	360.0	383.5	412.2	270.0	287.6	309.1
PKW-10725BX	374.0	393.3	407.8	440.0	462.7	479.8	330.0	347.1	359.9

The listed above are on the basis of 40℃ condensing temperature.

Part No.	Middle/high temperature	Low temperature
PKW-8613BX	130	180
PKW-8617BX	150	220
PKW-8621BX	180	260
PKW-17017BX	220	300
PKW-17021BX	390	520
PKW-17025BX	490	660

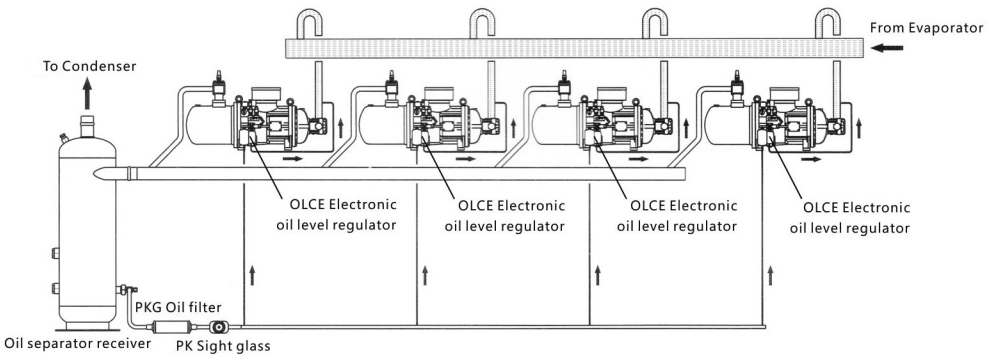
The allowed max. theoretical displacement VH(m^3/h) listed above are on the basis of 40℃ condensing temperature.

Piston parallel unit

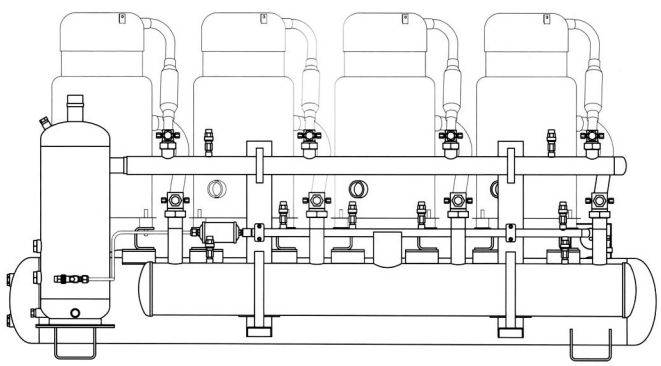


Oil return by discharge pressure for this new design with oil seperator receiver

Screw parallel unit

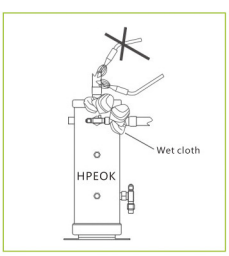


Turbine parallel unit



Installation and start up

Precharge the separator with compressor refrigeration oil.
The separators should be installed in the discharge line between the compressor and condenser mounted in a vertical position and reasonably close to compressor. Choose a position to avoid, as far as possible, chilling of the shell, which may result in liquid condensing within oil separator. If it's not possible, better to use insulation, strap heater or others to prevent the refrigerant from condensing in the shell.



Oil separator receiver for screw compressor
Type PKEO, CE

Application

This externally oil separator is designed for the screw compressor which doesn't have an oil eparator, especially for parallel screw compressor units. It can ensure enough lubricating oil supplied to each compressor to makes compressor safe operation.

This oil separator features a centrifugal flow path to achieve perfect oil separation with lowest pressure drop. Due to its good design, it greatly improves the heat exchange efficiency of the system.

The oil heater of the separator should start to work when compressor stop working, and shut off when compressor is running. The oil temperature controller sets the lowest temperature on +50℃, do heat preservation processing for oil separator if working on low temperature environment.

Feature

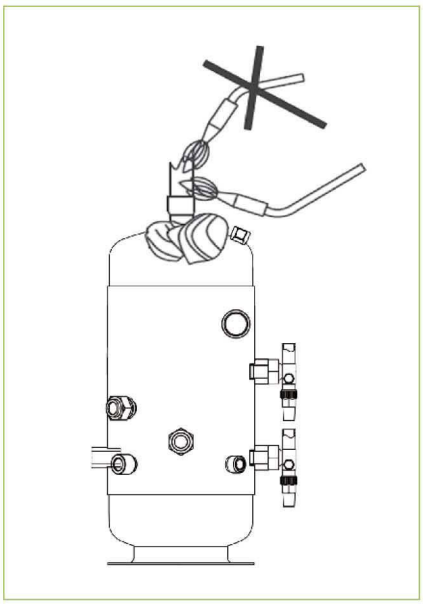
- The lower part of the oil separator is oil receiver, there is a standard oil level sight glass and ultralimit oil level sight glass on the receiver
- Suitable for 10P to 160P screw compressor
- The type of gas in and out is "side in up out", it combines the centrifugal effect and strainer effectively to achieve better oil separation
- The whole series equipped with high sensitive optoelectronic switch and highest standard of rotalock valve (tube with copper bush inside)
- Optional for flange assembly

Technical data

- For use with R134a, R404A, R507A, R407C, R223
- Design Working pressure: 3.0 MPa (30 bar)
- CE listed

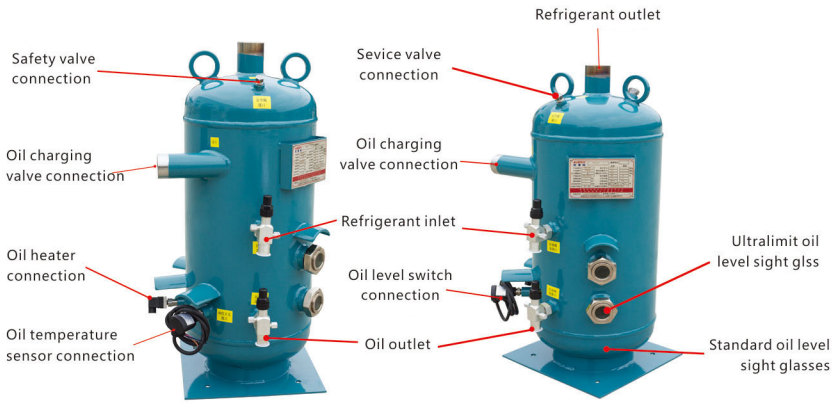
Installation

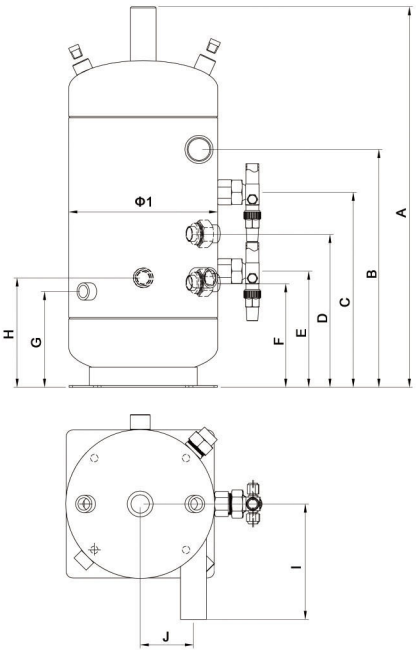
Before the oil separator is installed, an initial charge of oil should be added to it. Use the same type of oil that is in the compressor crankcase.The oil separators should be installed in the discharge line between the compressor and the condenser mounted securely in a vertical position and reasonably close to the compressor.To prevent the return of refrigerant from condenser, during the off cycle of the system, it's advisable to install a check valve between the condenser and oil separator's outlet.Oil separator performs best when operating at or near compressor discharge temperature.



Oil Separator Receiver for Screw Compressor Type PKEO

PKEO型 螺杆机外置油分离器





Part NO.	VH（m³/h）		
	High/Middle temperature range		Low temperature range
	R134a、R22	R404A、R507A	R134a、R22、R404A、R507A
PKEO-15L	100	80	130
PKEO-20L	130	110	180
PKEO-40L	250	220	300
PKEO-60L	350	320	420
PKEO-90L	450	340	520
PKEO-120L	580	440	660

The allowed max. theoretical displacement VH listed above are on the basis of 40℃ condensing temperature.

Part NO.	Conn (mm)		Dimension （mm）											Oil outlet	Oil heating	Input of oil heating	Volume (L)	Max.Oil charging (L)
	ID	OD	A	B	C	D	E	F	G	H	I	J	Φ1					
PKEO-15L	Φ35	Φ42	560	350	287	226	171	154	141	161	170	82	219	Φ16	140Wx1	1~/230V /50Hz	15	9
PKEO-20L	Φ42	Φ48	586	360	329	239	168	178	139	162	195	102	273	Φ16	140Wx1		20	11
PKEO-40L	Φ54	Φ64	752	555	412	325	196	216	162	179	230	120	325	Φ22	300Wx1		40	19
PKEO-60L	Φ54	Φ64	955	746	583	480	178	223	175	185	230	120	325	Φ28	300Wx2		60	30
PKEO-90L	/	Φ76	1000	731	598	458	236	286	188	198	262	135	377	Φ28	300Wx2		90	40
PKEO-120L	/	Φ76	1106	869	720	463	220	270	193	203	270	155	410	Φ28	300Wx2		120	50
PKEO-220L	/	Φ89	1340	1027	869	560	360	311	167	210	330	200	510	Φ35	300Wx3		220	85
PKEO-400L	/	Φ108	1455	1030	900	643	315	293	190	278	400	270	662	Φ35	300Wx3		400	180

Screw Parallel Unit Oil Return System