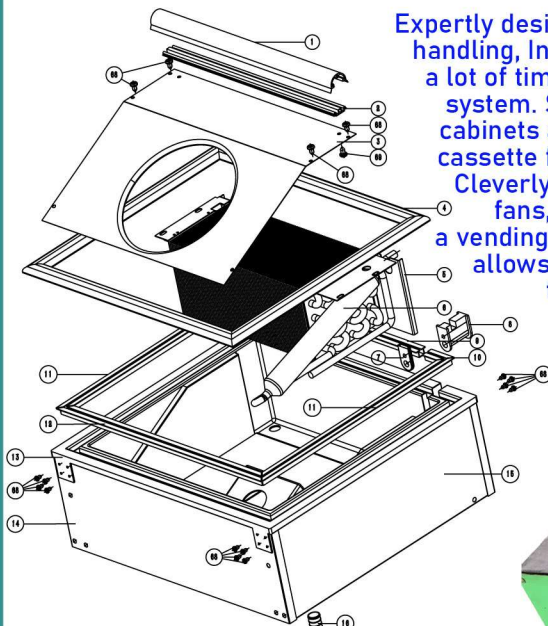


Expertly designed and optimized for cooling capacity, air flow and easy handling, Interchangeable Cooling Engine relieves you from spending a lot of time thinking about the best way to design your refrigeration system. Simply insert the cassette at the bottom or the top of your cabinets and in seconds the cooling process is up and running. The cassette features a completely self-contained refrigeration system. Cleverly tucked away inside are the compressor, heat exchangers, fans, controls, piping and all other components needed to cool a vending machine or bottle cooler. The platform design of cassette allows comprehensive customisation opportunities with respect to energy optimisation, new refrigeration technologies and easy adaptation into various bottle coolers & vendors.



可移动的制冷一体机经过专业设计和制冷量和空气流量的优化，易于操作，可让您节省很多时间思考设计制冷方案。只需将一体机安装插入制冷箱体的底部或顶部，在较短时间内完成制冷循环并开始运行。此卡带式一体机具有完整独立的制冷系统，巧妙地将压缩机、热交换器、风扇、温控、管路和其他制冷原件集成一体。广泛用于自动贩卖机或饮料柜。平台化设计提供各种的定制可能性。同时优化能源利用，新制冷技术或控制技术快速引入和升级换代。轻松满足不同需求。

Product advantages:

* The Cooling Engine is made for easy handling;

* Electrical interfaces are located on front to make connectors easy to access

* Hot-swappable refrigeration cassette makes installation, servicing and interchanging simple

* Upgrading options for new refrigerants, voltage and frequency, cooling capacity and higher efficiency are built-in and need no cabinet modifications

产品优势

* 一体机易于操作

* 电气接口位于前面，易于使用

* 可移动设计使安装、维护和更换变得简单

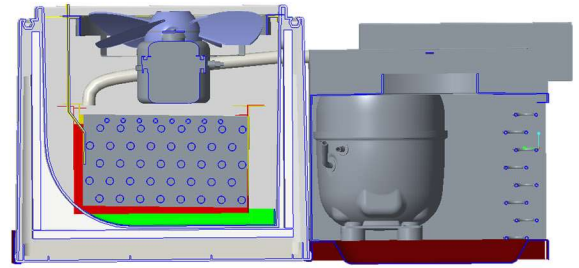
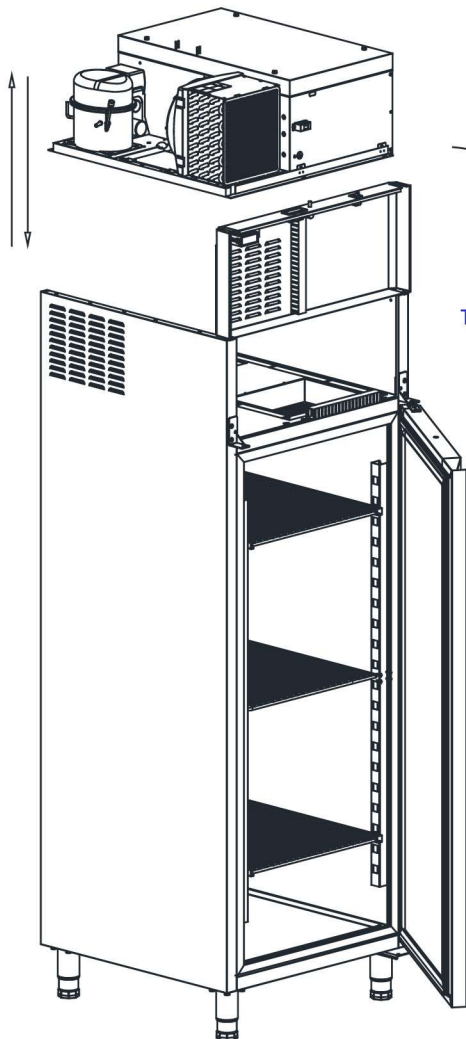
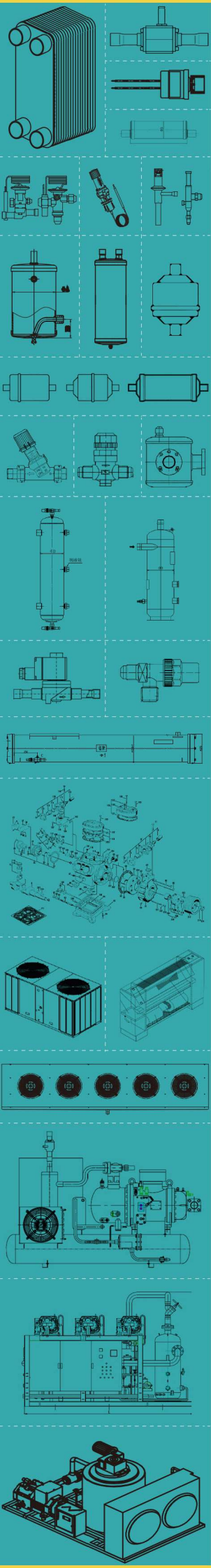
* 新技术升级简单，无需变更箱体

OEM benefits

Helps you reduce development cost By using the Interchangeable Cooling Engine you can concentrate on developing cabinets based on a turn key cooling system. Any kind of upgrading is made in cassette alone. It is easily interchangeable to meet a wide variety of equipment sizes.

制造商的选择

通过使用一体机帮助您降低开发成本，您可以专注于开发基于一体机的箱体。任何类型的升级都是只是在一体机内完成，且可互换。满足不同版本和冷量要求。



Reduces 'time to market'
The cassette can be used in multiple cabinets. This helps get the product to the market faster, as you can concentrate on the development process of the cabinets alone.

缩短“上市时间”
标准化一体机可用于不同类型箱体。
可以帮助您更快地将产品投放市场
且让您专注于产品外观的开发工作。

Opens new market opportunities
The cassette allows you to change your system to meet local market ratings.
The cassette can be used at 50 or 60 Hz – and different refrigerants.

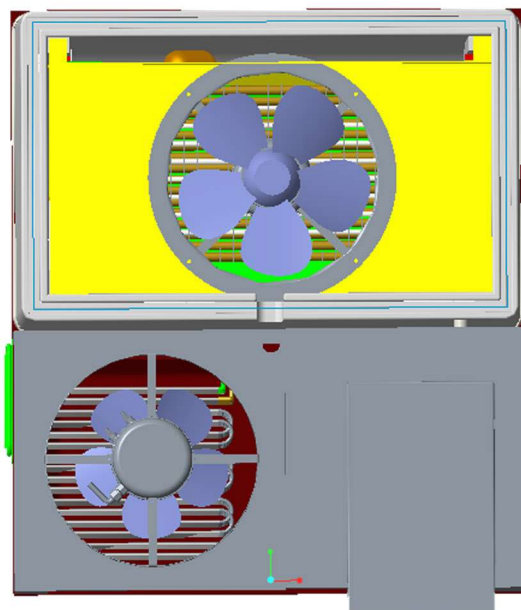
增加拓展新的市场机会
一体机可让您轻松变更系统，以满足当地市场的要求。
如50或60Hz和电压切换，不同的制冷剂选择。

Increased flexibility in manufacture
'Pick and mix' your own solution from several system design combinations:
Multiple capacity levels, standard or high efficiency versions, variety of refrigerants. Colour differentiation on request. You can choose from small and medium sizes or we can help you customise a cassette to suit your particular requirements.

增加生产灵活性
从众多设计组合中“挑选并组合”您自己的解决方案：冷量大小，标准或高效率版本，各种制冷剂。根据要求按颜色加以区分。您可以选择小尺寸和中尺寸外形，或者我们可以帮助您定制适合您特定需求的一体机。

Secures world-wide usability
It can be delivered anywhere in the world in voltages, frequencies & connections suitable for the local market.
全球通用性
以适合当地市场的电压、频率和连接方式，提供本地化可能性

Reduces warranty expense
The system can be changed at any time and in a few minutes. The housing protects the self-contained refrigeration system.
降低维保成本
该系统可以随时随地变更。外壳保护独立的制冷系统



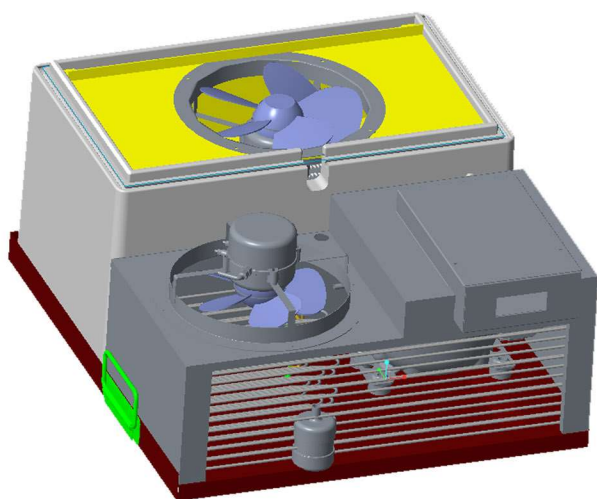
Improves product cooling capability
The cassette is developed and produced by BOWA specialists in cooling – ensuring the right cooling capacity for your cabinet design.
准确匹配产品制冷量
专业人士开发和生产-确保适当的制冷能力匹配您的箱体设计

Inexpensive to upgrade for the end-user
Service and repairs can be handled by simply swapping the systems with another unit – by workers without specific refrigeration skills or licence. Direct expenses are few and the downtime of the system short.

降低终端用户的升级成本
只需更换一体机后，即可完成售后服务和维修
无需特定制冷技能或许可证的技术人员操作。
直接费用很少，停机时间短。

For years BOWA have supplied refrigeration solutions to refrigeration manufacturers. The main principle of BOWA is to be customer driven to satisfy short and long term customer needs and expectations. This is reflected in developing the best solutions together with customers, converting their application requirements into optimum solutions that work, and keep on working. The cassette Interchangeable Cooling Engine is just the very latest example of the way we want to work hand-in-hand with customers to develop and produce even more innovative products.

多年来，保骅一直为制冷制造商提供制冷解决方案。以客户为导向，满足短期和长期的客户需求，期望。这体现在与客户一起开发最佳解决方案的过程中，将他们的应用需求整合到可以正常工作的合适解决方案中，并继续保持工作状态。一体机可互换的制冷系统，只是我们最新示例。愿与客户携手合作，开发和生产更多创新产品。



EOB

EOB = Engine on bottom

EOB = 底置式

EOT = Engine on top

EOT = 顶置式

- 0 - P13 - A - S

0 = Open type
敞开式

C = Closed type
封闭式

S = R404a

H = R22

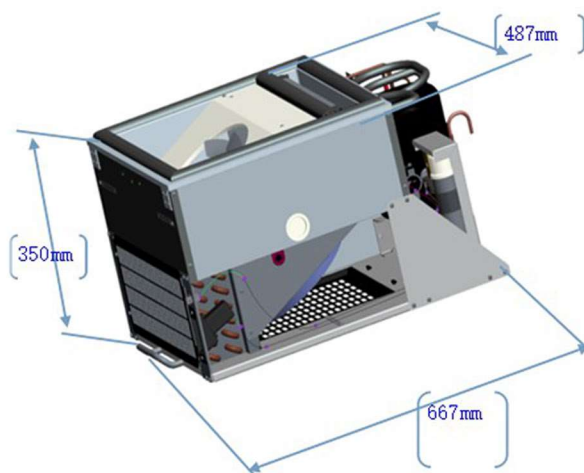
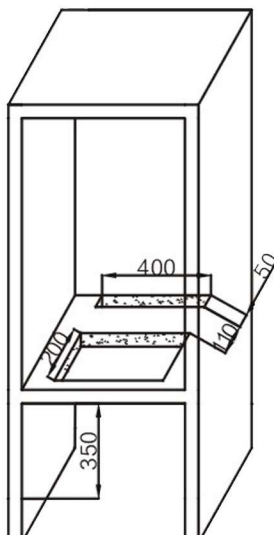
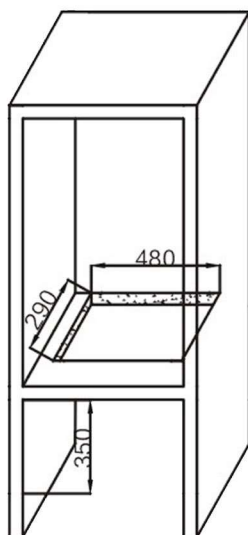
Z = R410A

L = R290a

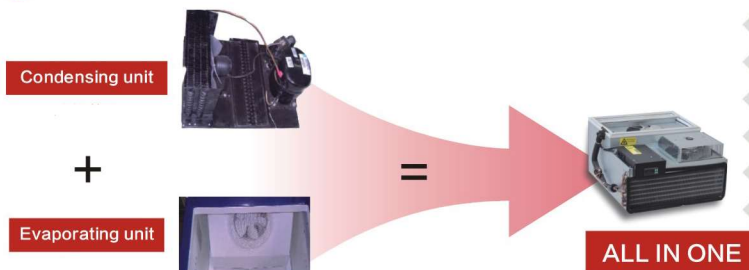
M = R134a

A = H/MBP 中高背压
B = M/LBP 中低背压

P13 = Single Phase Compressor displacement cc/rev
单相压缩机排气量cc/rev

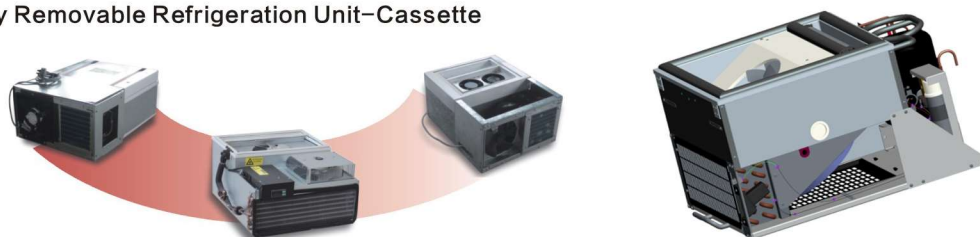


What is cassette?



- ◆ 24hours continuous working, no interruption
- ◆ Excellent design, shipping easily
- ◆ Minimum budget on maintainece
- ◆ Reduce spare parts to decrease stock
- ◆ Refurbishment at minimum costs
- ◆ Easy maintainece & longer work life

The Fully Removable Refrigeration Unit-Cassette



Current Service Process



New Service Process



R290冷量表 R290 cooling capacity

R290 • 220-240 V • 50 Hz															
Compressor	Code number	Application	ASHRAE Capacity [W] T _c =54.4°C, T _{liq} =32.2°C, T _{suc} =32.2°C Evaporating temperature [°C]						ASHRAE						Displacement [cm³]
									LBP rating point -23.3°C / 54.4°C		MBP rating point -6.7°C / 54.4°C		HBP rating point 7.2°C / 54.4°C		
			-35	-15	-5	0	10	15	Cooling capacity [W]	COP [W/W]	Cooling capacity [W]	COP [W/W]	Cooling capacity [W]	COP [W/W]	
TL3CN	102H4380	L/MBP	49	161	249	303			105	0.91	208	1.38			3.13
TL4CN	102H4490	L/MBP	76	212	316	379			146	1.07	265	1.46			3.86
TL5CN	102H4590	L/MBP	109	296	436	521			205	1.18	367	1.53			5.08
DLE4CN	102H4465	L/MBP	104	279	404	473			193	1.58	341	2.15	516	2.92	4.00
DLE4CNT	102H4460	L/MBP	104	279	404	473			193	1.58	341	2.15	516	2.92	4.00
DLE4.8CN	102H4565	L/MBP	129	341	500	601			242	1.65	420	2.15	696	3.04	4.80
DLE4.8CNT	102H4588	L/MBP	129	341	500	601			242	1.65	420	2.15	696	3.04	4.80
DLE4.8CNT	102H4587	L/MBP	130	334	498	601			232	1.41	417	2.01	695	2.91	4.80
DLE5.7CN	102H4653	L/MBP	169	419	609	730			301	1.59	512	2.05	840	2.82	5.70
DLE5.7CNT	102H4678	L/MBP	166	415	607	727			296	1.49	510	2.02	836	2.86	5.70
DLE6.5CN	102H4765	L/MBP	170	450	659	790			318	1.66	554	2.12	911	2.86	6.50
DLE7.5CN	102H4853	L/MBP	209	519	765	918			366	1.47	643	1.91	1055	2.56	7.48
NL7CN	105H6756	L/MBP	174	474	712	859			325	1.35	597	1.81			7.27
NL9CN	105H6856	L/MBP	205	548	815	979			380	1.39	684	1.80			8.35
NLE8.0CNT	105H6073	L/MBP	183	554	827	993			378	1.55	694	2.16	1140	3.13	7.96
NLE8.8CN	105H6880	L/MBP	238	617	902	1078	1512		435	1.65	759	2.08	1232	2.83	8.76
NLE10CN	105H6175	L/MBP	270	709	1048	1252	1739		491	1.54	881	1.99	1423	2.68	10.09
NLE10CNT	105H6179	L/MBP	274	748	1094				519	1.54	922	1.99			10.09
NLE11CNL	105H6174	LBP	300	778	1143				540	1.52	962	1.92			11.15
NLE11MN	105H6177	MBP		798	1171	1399	1947		564	1.66	985	2.11	1592	2.85	11.15
NLE12.6CNL	105H6378	LBP	353	867	1280				614	1.69	1074	2.10			12.55
NLE12.6MN	105H6377	MBP		862	1272	1525	2135		605	1.64	1069	2.08	1742	2.72	12.55
SC10CNX	104H8065	L/MBP	175	547	853	1042			358	1.27	711	1.79			10.29
SC10MNX	104H8075	MBP		575	921	1132			351	1.19	766	1.70	1329	2.57	10.29
SC12CNX	104H8265	L/MBP	227	711	1110	1372			475	1.31	923	1.79			12.87
SC12CNX.2	104H8266	LBP	230	742					491	1.20					12.87
SC12MNX	104H8275	MBP		757	1195	1461			474	1.13	995	1.77	1707	2.61	12.87
SC15CNX	104H8565	L/MBP	251	918	1415	1717			597	1.35	1183	1.83			15.28
SC15CNX.2	104H8566	LBP	345	928					624	1.32					15.28
SC15MNX	104H8575	MBP		967	1409	1679			680	1.51	1187	1.75	1907	2.40	15.28
SC18CNX	104H8865	L/MBP	315	1106	1684	2032			727	1.36	1410	1.74			17.69
SC18CNX.2	104H8866	LBP	342	1194					797	1.31					17.69
SC18MNX	104H8875	MBP		1109	1622	1943			777	1.31	1364	1.71	2237	2.33	17.69
SC21CNX.2	104H8166	LBP	462	1399					962	1.45					20.95
SCE21CNLX	104H8163	LBP	548	1387	2074				953	1.61	1741	2.04			20.95
SCE21MNX	104H8160	MBP		1443	2091	2492			1002	1.64	1762	2.11	2852	2.91	20.95

*** R290 is hydrocarbons. These refrigerants are flammable and are only allowed for use in appliances which fulfil the requirements laid down in the latest revision of EN/IEC 60335-2-24.

Do not use open fire near the refrigerant R290. The refrigeration systems must be opened with a tube cutter. In order to carry out service and repair on R290 system, the service personnel must be properly trained to be able to handle flammable refrigerants. This includes knowledge on tools, transportation of the compressor and refrigerant, and the relevant regulations and safety precautions when carrying out service and repair.