

The Chinese AC Manufacturing Growth

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ABSTRACT: This paper shows the status and the development and the growth of Chinese AC manufacturing through the industry statistic.

KEY WORDS: room air conditioner central air conditioning system

Conspectus

After 20 years reform, The Chinese HVAC&R industry has developed from small scale to large scale. Over the past ten years, China's refrigeration and air conditioning industry witnessed significant development in the areas such as reform on operation mechanism, utilization of foreign investment, acquisition of technology and technology renovation, enhancement of product quality, expansion of product exportation. Nowadays, China's refrigeration and air conditioning industry is supported by a comprehensive and integral combination of products of all types including large, medium and small refrigeration and air conditioning products, with much higher quality, performance and technical standard as compared with those made previously. The technical gap between products made in China and other countries is being narrowed. China is now the third largest refrigeration and air conditioning equipment manufacturer in the world, immediately following the USA and Japan.

According to the annual report of the China Refrigeration and Air conditioning Industry Association (CRAA), there are about 415 membership including 11 large enterprises, 54 medium enterprises and the others small scale firms till now.

According to the '99 statistics from the main enterprises (not including room air conditioner and refrigerator), the total output value is 48.79 billion RMB, the total shipment value is 45.926 billion RMB.

The classify of product

Refer to the purpose there are two ways to distinguish. One is for home appliance, the other is for commerce and industry. This paper will say what is the newest information about the manufacturers growth in China.

1. The development situation of Chinese room air conditioner manufacturing

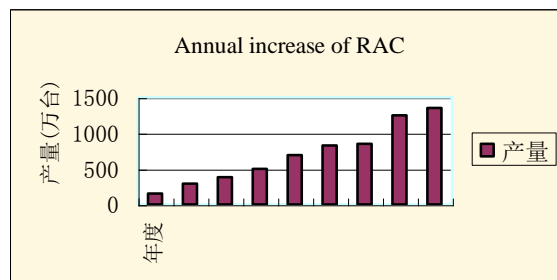
1.1 Annual production increase rapidly

The production of Chinese room air conditioner has been increased rapidly since 1990.

Table 1-1

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Production (ten thousand units)	152	292	382	500	690	826	850	1250	1350

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1.2 Efficiency of scale operation and exportation is obviously increased.

In 1999, the main RAC production and shipment are centralized at Zhuhai Geli Appliance Corp. Ltd., Haier Group Co., Guangdong Meide Group Corp. Ltd, Chunlan Appliance Co., Ltd. And Guangdong Kelong(Rongsheng) Group Co., Ltd. etc.. Meanwhile enterprises above mentioned are unceasing to expand international market. They have sold their product to Europe, America, Southeast Asia and South America. The shipment was about 1.2332 million units, increased about 140% comparing last year.

2. 1995-2000 General information of Chinese Central Air Conditioning System production

2.1 Quantity of Chinese Central Air Conditioning manufacturer and distributed by area

The total quantity of Chinese Central Air conditioning manufacturer is about 130(not including Hongkong Area, Marco and Taiwan Area), most of them are distributed in Yangtze river delta, Zhujiang delta, surrounding Bohai and Yangtze river coastal area. The details are as below table.

Table 2-1-1

Product	Quantity	Ratio (%)
LiBr absorption chiller	23	17
Centrifugal chiller	5	4

Screw chiller	15	11
Reciprocating chiller	15	11
Air source & heat pump chiller	17	13
Unitary package	18	13
Terminal equipment (air handle units, fan coil units)	42	31

2.2 The total production of Chinese Central Air conditioning

At present, the total enterprises of manufacturing central air conditioning equipments are nearly 132, among them there are about 20 large collectivize companies whose production account for 60 per cent of the total output of value.

Table 2-2-1

The total production of Chinese Central Air conditioning manufacturers (units)

Type	1995	1996	1997	1998	1999	2000
LiBr absorption chiller	2505	3049	3575	2780	2600	2860
Centrifugal chiller	236	351	241	246	220	260
Screw chiller	1166	616	491	1708	1826	2000
Reciprocating chiller	2963	3533	3473	3500	3560	3800
Air source & heat pump chiller	1195	1637	2150	4200	6500	7000
Unitary package	3050	4120	4478	5821	4931	5400

Note: According to specialist estimate

Finger 2-2-1

The analyse of the total production of Chinese Central Air conditioning manufacturers

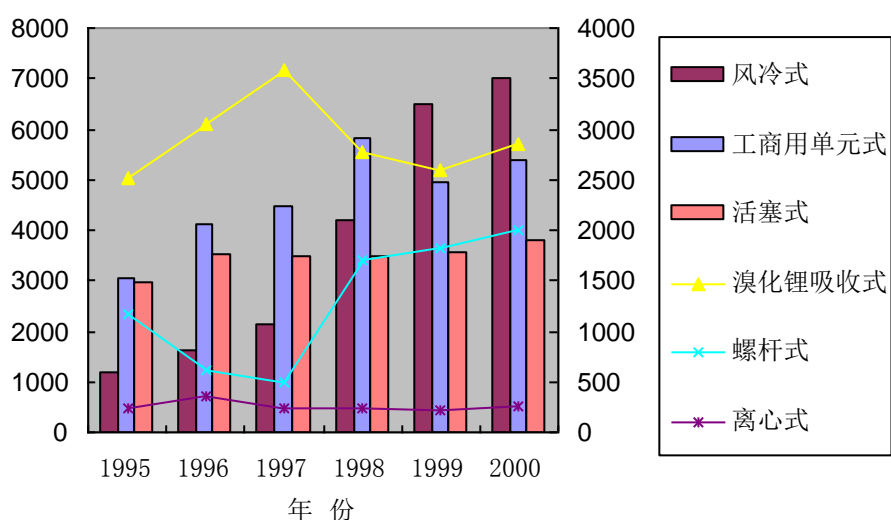
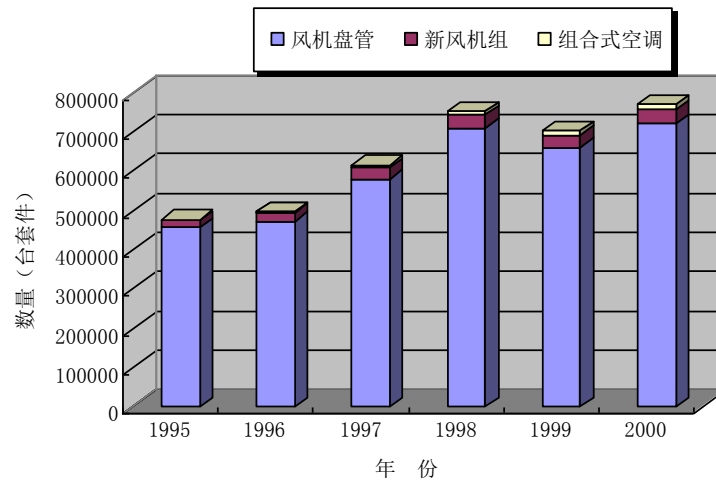


Table 2-2-2 The total production of the terminal equipment in China

Type	1995	1996	1997	1998	1999	2000
Fan coil units	455138	471423	580109	707700	658100	720000
Air handle units	18546	21798	27958	34558	32030	36000
Air handle units	3015	3702	5951	8935	11200	13400

Note: According to specialist estimate

Finger 2-2-2 The total output of terminal equipment



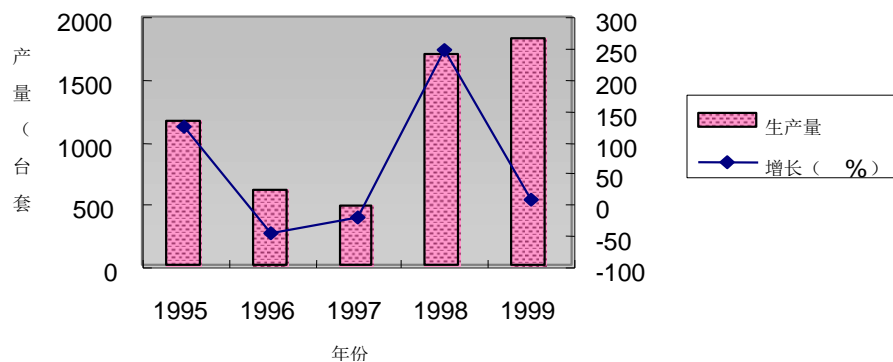
2.2.1The development of Chinese Screw chiller manufacture

Table 2-2-1-1 The development of Chinese Screw chiller manufacture

Year	1995	1996	1997	1998	1999	2000
Production	1166	616	491	1708	1826	3056
Increase (%)	125	-47	-20	248	7	

Note: Basis on the industry statistics over the yearsFinger

2-2-1-14The development of Chinese Screw chiller



2.2.2 The development of reciprocating compressor manufacturing

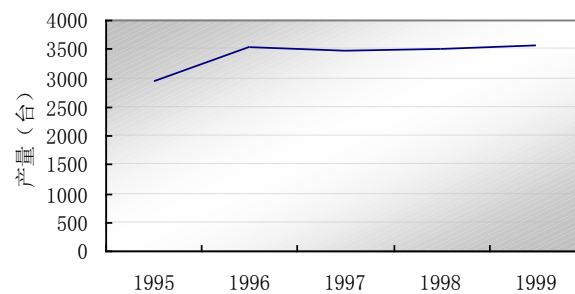
With more than 30 years development history, the total production of reciprocating compressor kept on 3000-3500 units per year from 1995 to 1999.

Table 2-2-2 The history of reciprocating compressor manufacture in China

Year	1995	1996	1997	1998	1999	2000
Production	2963	3533	3473	3500	3560	4000

Note: According to the industry statistics

Finger 2-2-1 The development trend of reciprocating compressor manufacture



2.2.3 The development of centrifugal chiller manufacturing

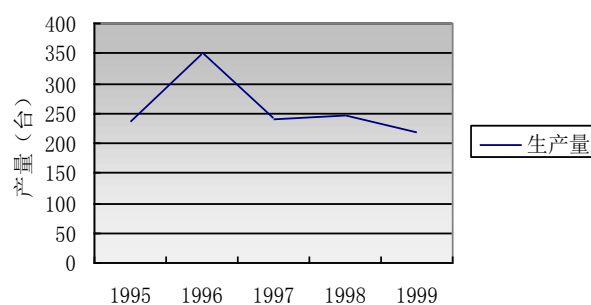
During the past five years, the total production of centrifugal chillers mainly centralized in 3-5 manufacturers was around 1200-1300 units. The annual production was about 250 units. The internal market has being pounding by importation. This situation will not be changed in the near future, however the two new manufacturers, Wuxi York and Jiangsu Trane, will grow rapidly and impact powerfully by making centrifugal chiller in China.

Table 2-2-3-1 The development of centrifugal chiller manufacturing

year	1995	1996	1997	1998	1999
output	236	351	241	246	220
ratio	-6.35	48.7	31.34	2.07	-10.57

Note: According to the industry statistics

Finger2-2-3-1 the trend of producing centrifugal chiller (1995-1999)



2.2.4 The development of Chinese LiBr absorption chiller

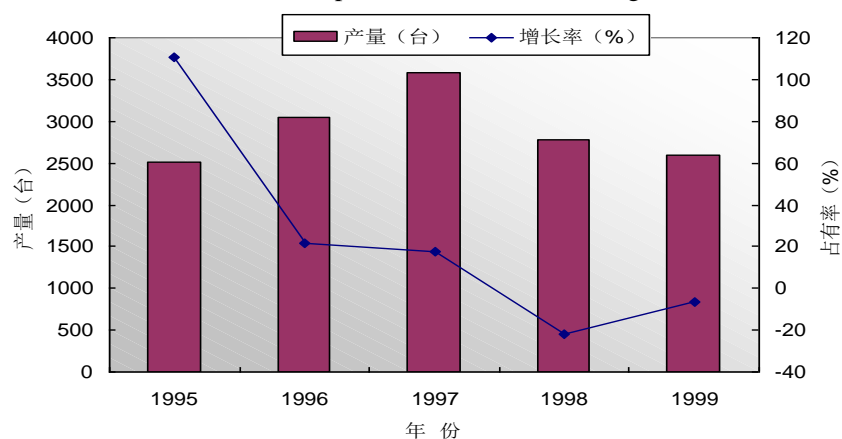
Under impacted by the National energy policy, the trend of LiBr absorption chiller manufacturing slides down yearly five years ago. However the highest record was 3537 units in 1997. At the end of 1999, the output was only 2600 untis.

Table 2-2-4-1 The trend of LiBr absorption chiller manufacturing

year	1995	1996	1997	1998	1999
output (unit)	2505	3049	3575	2780	2600
ratio (%)	110.7	21.72	17.25	-22.24	-6.47

Note: According to the industry statistics

Finger 2-2-4-1 The trend of LiBr absorption chiller manufacturing

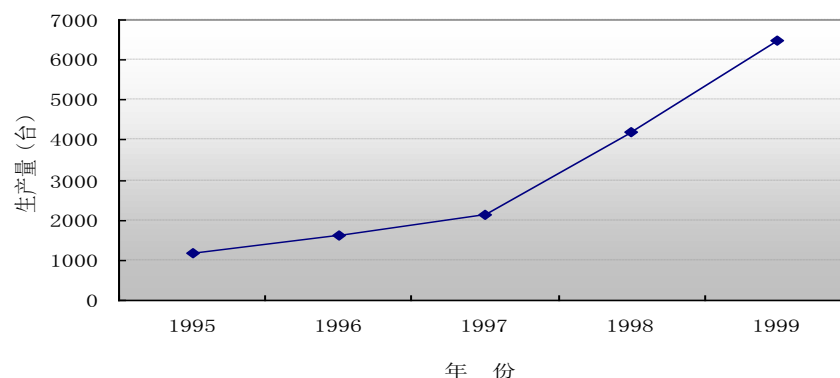


2.2.5 The development of Air source & heat pump chiller (1998-1999)

Table 2-2-5-1 The trend of Air source & heat pump chiller (1998-1999)

year	1995	1996	1997	1998	1999
output (unit)	1195	1637	2150	4200	6500
ratio (%)	—	36.99	31.34	95.35	54.76

Finger 2-2-5-1 The development of Air source & heat pump chiller (1998-1999)



Base on the development of Chinese central air conditioning equipment market, energy saving studying is one of most important task. The needs for heat pump air conditioning equipment are required by energy saving, environmental protection and market demand. So the trend of air source heat pump chiller manufacturing has been being increased yearly since the 1990's. Especially in 1998 the increase rate reached 95.3%.

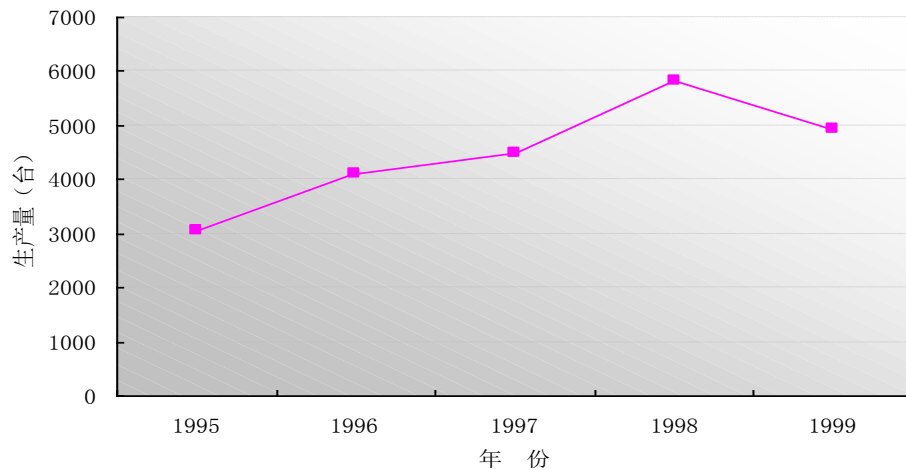
2.2.6 The development of Chinese Unitary units manufacturing

The market of commercial unitary units increased rapidly during 1993-1996, and increased wavelly during 1996-1999, with enhancing of social service, the telephone equipments rooms in computers and telecom will increase in near 3 to 5 years (main in old rooms rebuilding and rooms environment improving), with the hi-tech application in variable industry and technology coarctation enhancing in related industry, unitary units will be good potential market in China.

Table 2-2-6-1 The trend of Chinese Unitary unit manufacturing

year	1995	1996	1997	1998	1999
output	3050	4120	4478	5821	4931
rate (%)	6.6	35.1	8.6	30	-15.3

Finger 2-2-6-1 The trend of Chinese Unitary unit manufacturing



2.2.7 The development of Chinese Air handle units manufacturing

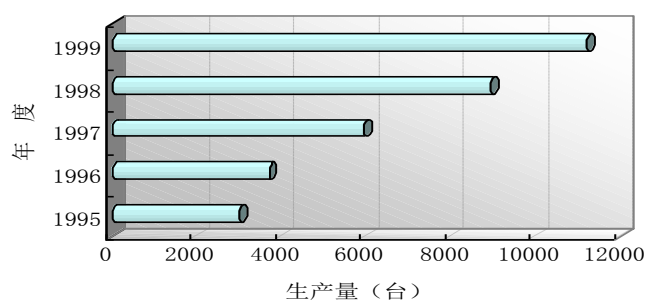
The total output of air handle units added up 29000-33000 units during the past five years. The record reached 11200 units in 1999.

Table 2-2-7-1 The trend of Chinese Air handle unit manufacturing

Year	1995	1996	1997	1998	1999
Output (unit)	3015	3702	5951	8935	11200
rate (%)	13.18	22.79	60.74	50.15	25.5

Note: According to the industry statistics

Finger 2-2-7-1 The trend of Chinese Air handle unit manufacturing



2.2.8 The course of flesh air packaged units in China

The output of flesh air packaged units summed to 130,000 to 140,000 in recent years, about 27,000-28,000 per year, it is up to about 34,000 per year in 1998 and 1999, to the top of five years.

The total output increased 80% comparing 1999 with 1995, increasing 15% per year. It

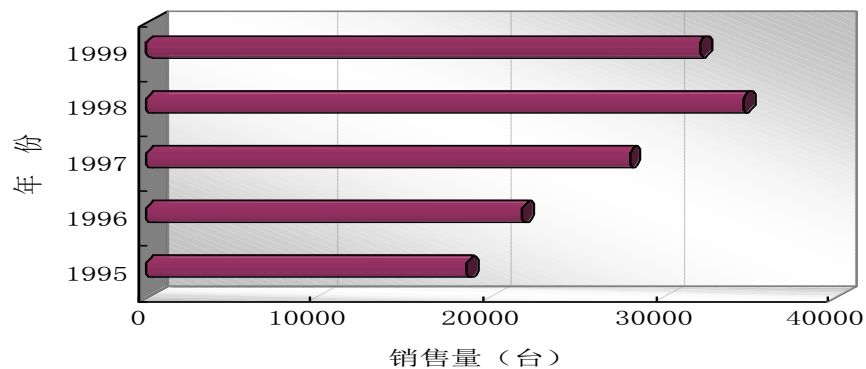
was up to the top in 1997, about 30%. It was increasing wavelly in 1995-1999, up and down in 20%, negative increasing in 1999, down 1.5% comparing with 1998, but the total output in 1999 was the same as 1998, it was said that it was adjusted in 1999 after 20% increasing in 1995-1999 and it was the balance between supply and need.

Table 2-2-8-1 the development of flesh air packaged units in 1995-1999

Year	1995	1996	1997	1998	1999
Output (units)	18546	21798	27958	34558	32030
Ratio (%)	24.57	17.53	28.26	23.61	-7.32

Note: According to the industry statistics

Finger 2-2-8-1 the development of flesh air packaged units in 1995-1999



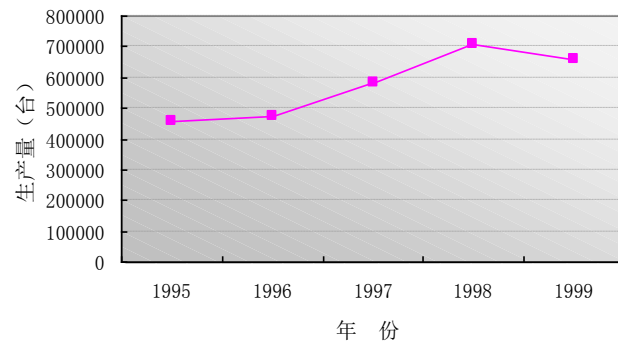
1. 2. 9 The development of Fan coil unit manufacturing(1995 –1999)

Table 2-2-9-1 The trend of Chinese Air handle unit manufacturing (1995-1999)

Year	1995	1996	1997	1998	1999
Output (unit)	455138	471423	580109	707700	658100
Rate (%)	42	4	23	22	-7

Note: According to the industry statistics

Finger 2-9-1 The trend of Chinese Air handle unit manufacturing



The development of heat pump technology will growth rapidly along with the energy policy adjustment and varity remand and friendly environment control. However the competition between brands will be serious.