

# Structure of All AISIN

**AISIN SEIKI CO., LTD.**

**AISIN AW CO., LTD.**

**AISIN DEVELOPMENT CO., LTD.**

**AISIN CHEMICAL CO., LTD.**

**AISIN AW SEIMITSU CO., LTD.**

**ADVICS CO., LTD.**

**13 companies**

**AISIN SIN'EI CO., LTD.**

**AISIN AW INDUSTRIES CO., LTD.**

**139 subsidiary companies in total**

**AISIN AI CO., LTD.**

**AISIN SALES CO., LTD.**

**AISIN KEIKINZOKU CO., LTD.**

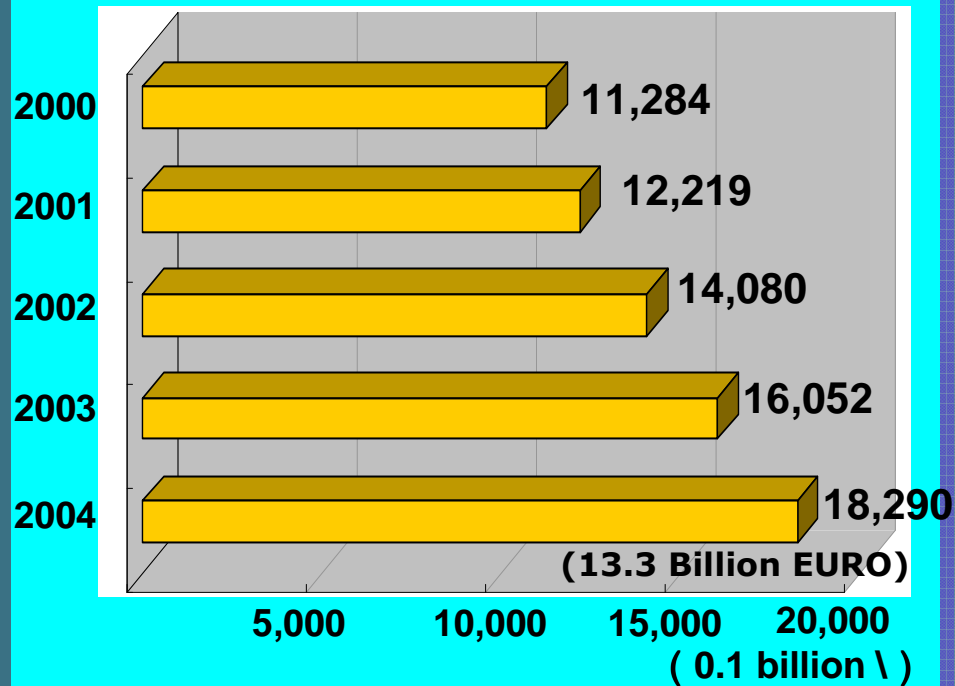
**AISIN KIKO CO., LTD.**

**AISIN SINWA CO., LTD.**

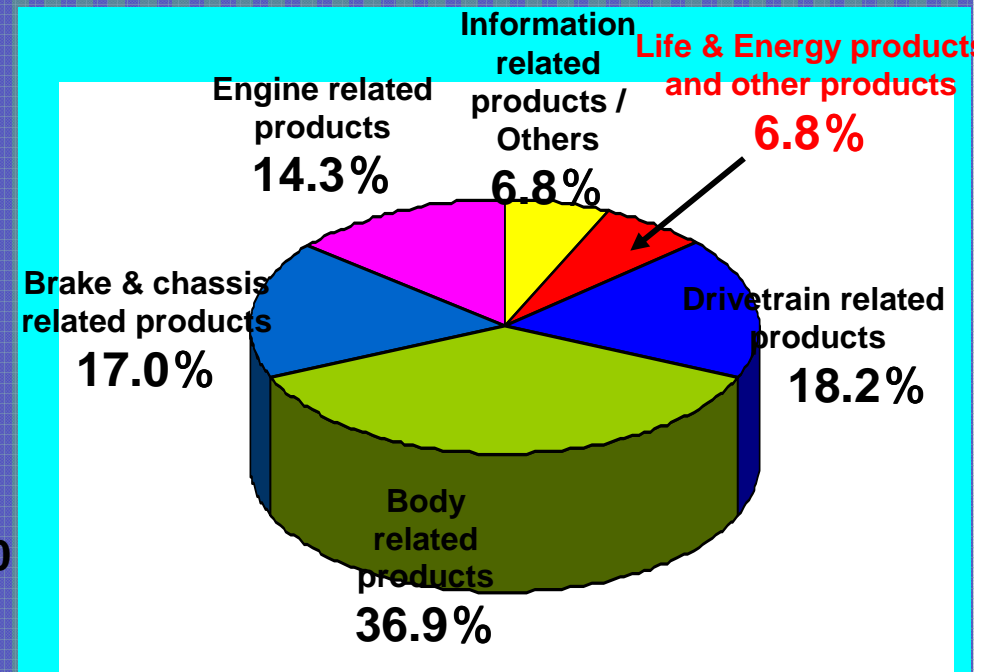
**AISIN TAKAOKA CO., LTD.**

# Consolidated Summery

## Consolidated Sales



## Sales by Products (2004Fiscal year)



# Main Products

## Automotive Parts

Drivetrain related

Brake & chassis related

Engine related

Body related

## Life & Energy

Living space

Fashion



**Energy.  
Environment  
related**

# Automotive part products

## Electronic



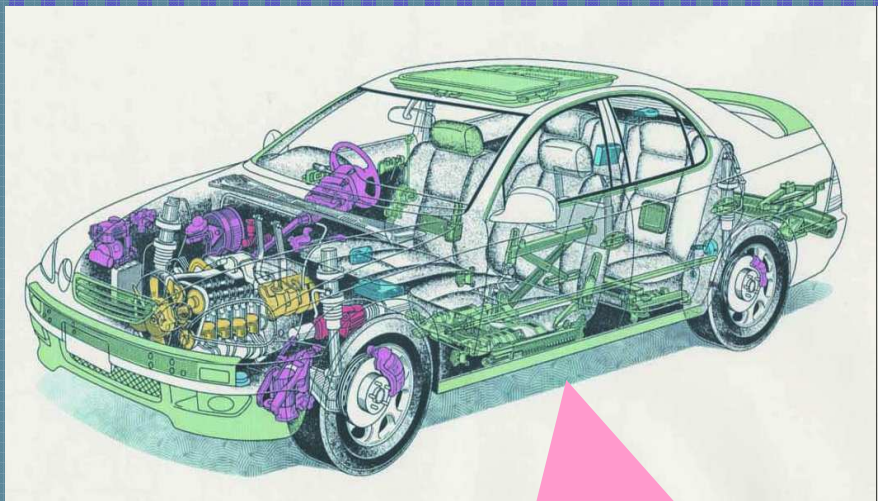
Computers

## Brake



ABS system

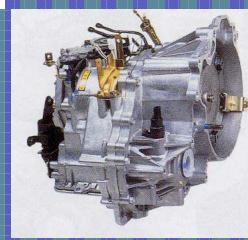
Disk Brake



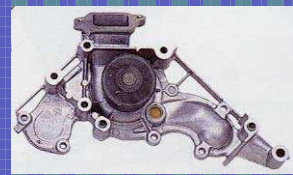
## Drivetrain



Automatic Transmission



## Engine



Water Pump

Piston



**AISIN manufactures approx. 10,000 items among 30,000 items of all automotive parts**

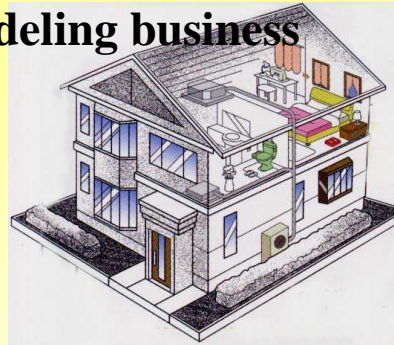
# Life & Amenity Products

## ★Living Space Products

○Bed



○Remodeling business



○Shower Toilet



○Sash



○Electric derive shutter



## ★Fashion Products



○Home-use sewing machine

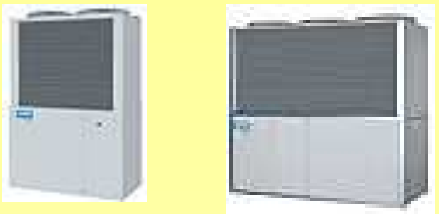


○Embroidery machine

# Energy related Products

## ★Air conditioning product

○Gas Heat Pump (GHP)



4・3・2方向吹出しカセットタイプ



2方向吹出しカセットタイプ



天井埋込高静圧ダクトタイプ

## ★Power generate

○6kW Co-generator (CHP)



## ★Vacuum and Ultra low temperature

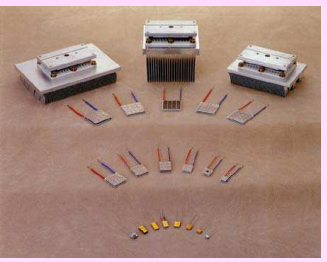
○Dry Pump



○Cryo Pump



○Peltier



○Pulse Tube Cryo Cooler (Sterling Type)



# Line up of GHP (Outdoor Unit)

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Package</p>	<p><b>For big space</b></p>			
	<p style="text-align: center;"><b>Renewal</b></p> <div style="text-align: center;">  <p><b>P280 single (10HP)</b></p> </div>	<p style="text-align: center;"><b>Renewal</b></p> <p style="text-align: right;"><u>2 types 6 models</u></p> <div style="text-align: right;">  <p><b>P560 single (20HP)</b></p> </div>		
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Multi</p>	<p><b>For individual space</b></p>			
	<p style="text-align: center;"><b>Renewal</b></p> <div style="text-align: center;">  <p><b>P140 Multi (5HP)</b></p> </div>	<p style="text-align: center;"><b>Renewal</b></p> <div style="text-align: center;">  <p><b>P180/P200 Multi (7.5HP)</b></p> </div>	<p style="text-align: center;"><b>Renewal</b></p> <div style="text-align: center;">  <p><b>P224 Multi (8 HP)</b></p> </div>	<p style="text-align: center;"><b>Renewal</b></p> <div style="text-align: center;">  <p><b>P280/P335 Multi (10/13HP)</b></p> </div>
<p>Refrigerant</p>	<p><b>R407C/ R410A (not for 5HP/7.5HP)</b></p>			

# Line up of GHP (Indoor Unit)

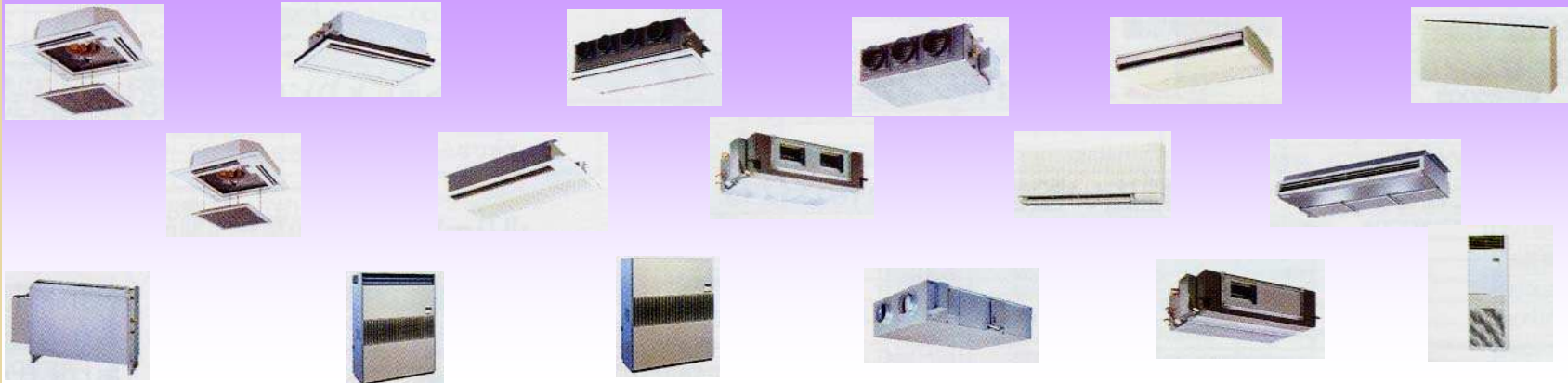
Package

12 types 19 models



Multi

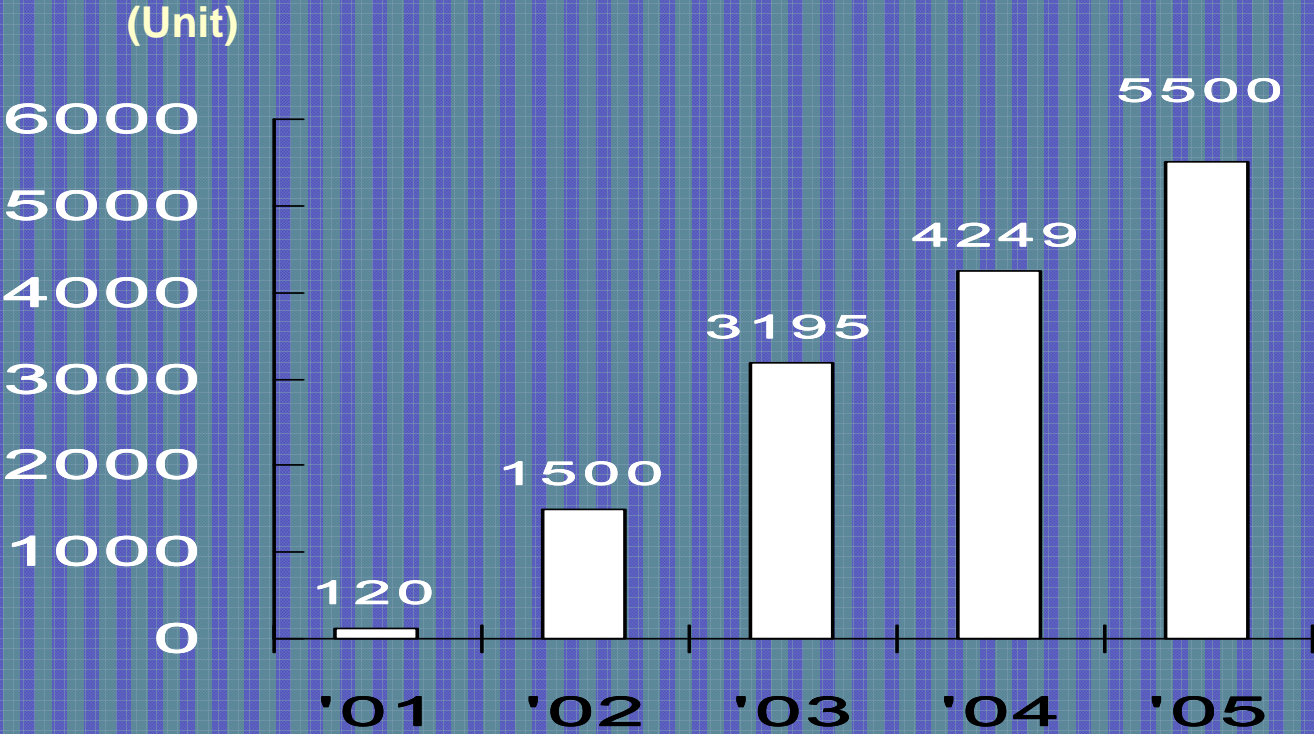
19 types 107 models





# KOREAN MARKET OF GHP

Total demand of GHP Outdoor Unit



Source : KRA

# Giant Church (SEOUL)

2128HP



# Shopping building (SEOUL)

4760HP



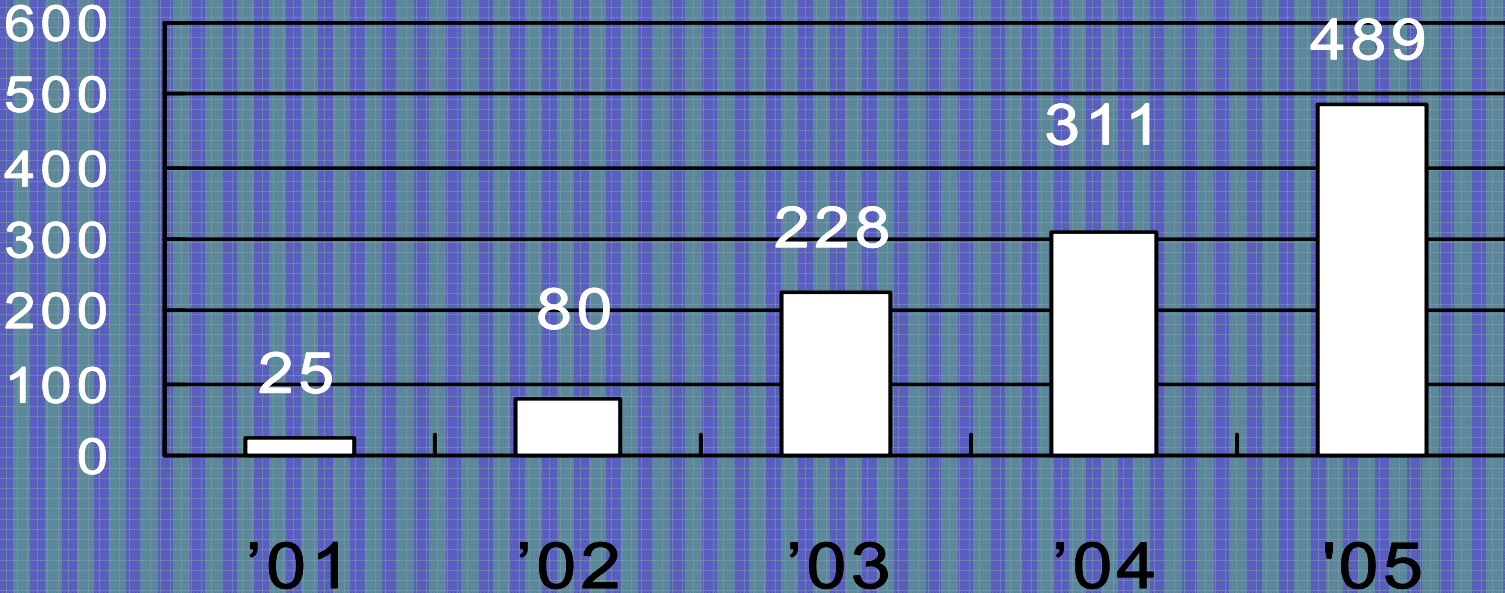
# LEXUS Dealer (SEOUL)

200HP



# EUROPEAN MARKET OF GHP

## Total Demand of GHP Outdoor Unit



Source : GHP consortium

**Gas Station (Italy)  
20HP(AWS)**



**HOTEL (Greece)  
60HP(AWS)**



# INSTALLATIONS

## GAS COMPANY

# 20HP

GERMANY



## GAS COMPANY

# 10HP + AWS

GERMANY



## GAS COMPANY

# 10HP + AWS

FERMO AP (ITALY)





## SERVICE STATION

# 20HP + AWS

ANCONA (ITALY)



## SERVICE STATION

**10HP**

CIVITANOVA MC (ITALY)



## SERVICE STATION

**20HP + AWS**

LUCIGNANO AR (ITALY)



## HOTEL

**3x20HP + AWS**

SALONICCO (GREECE)



## HOTEL

# 10x20HP

ATHENS (GREECE)



## HOTEL

**3x20HP + AWS**

PESCHIERA BORROMEO MI (ITALY)



## HOTEL

**10HP**

PORTO S. GIORGIO AP (ITALY)



## HOTEL

**3x5 HP**

MESTRE VE (ITALY)





## HOTEL

**20HP**

FLORENCE (ITALY)



## RESTAURANT

**20HP**

MORCONE BN (ITALY)



## RESTAURANT

**5HP**

MAZARA DEL VALLO TP (ITALY)



## AGRITURISM

13HP

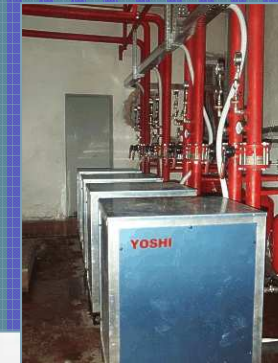
LORETO AN (ITALY)



## REGION BUILDING

**4x20HP**

PADOVA (ITALY)



## LAW COURT

**2x20HP + 2AWS**



AUSTRIA



**BANK**

**10HP**

**GERMANY**



**BANK**

**20HP**

**GERMANY**





## OLYMPIC VILLAGE

**5HP**

ATHENS (GREECE) 2004



**DANCING**

**7x20HP + 10HP**

FERMO AP (ITALY)



## DISCOTEQUE

**4x20HP**

PESCARA (ITALY)



## OFFICES

# 5HP

LUCREZIA PU (ITALY)



## OFFICES

**5HP**

CODROIPO UD (ITALY)



## OFFICES

**10HP**

URBISAGLIA MC (ITALY)



**HOME**

**5HP + AWS**

TURIN (ITALY)



**HOME**

**5HP + AWS**



**GERMANY**





## INDUSTRY

**2x20HP**

CHIARAVALLE AN (ITALY)



## INDUSTRY

**20HP**

PORTO S. ELPIDIO AP (ITALY)



## INDUSTRY

# 10HP

GERMANY



## SCHOOL

**5HP**

MAZARA DEL VALLO TP (ITALY)



**MOSQUE**

**5HP**

**GERMANY**



## CHURCH

**10HP**

FLORENCE (ITALY)



## SUPERMARKET

**3x20HP + 3AWS**

CODROIPO UD (ITALY)



## SUPERMARKET

# 10HP

VOGHERA VE (ITALY)





## SHOW ROOM

**5HP + 10HP**

SERRA DE' CONTI AN (ITALY)



## SHOW ROOM

**10HP**

PORTO RECANATI MC (ITALY)



## NURSING HOME

**6x20HP + 6AWS**

VASTO CH (ITALY)



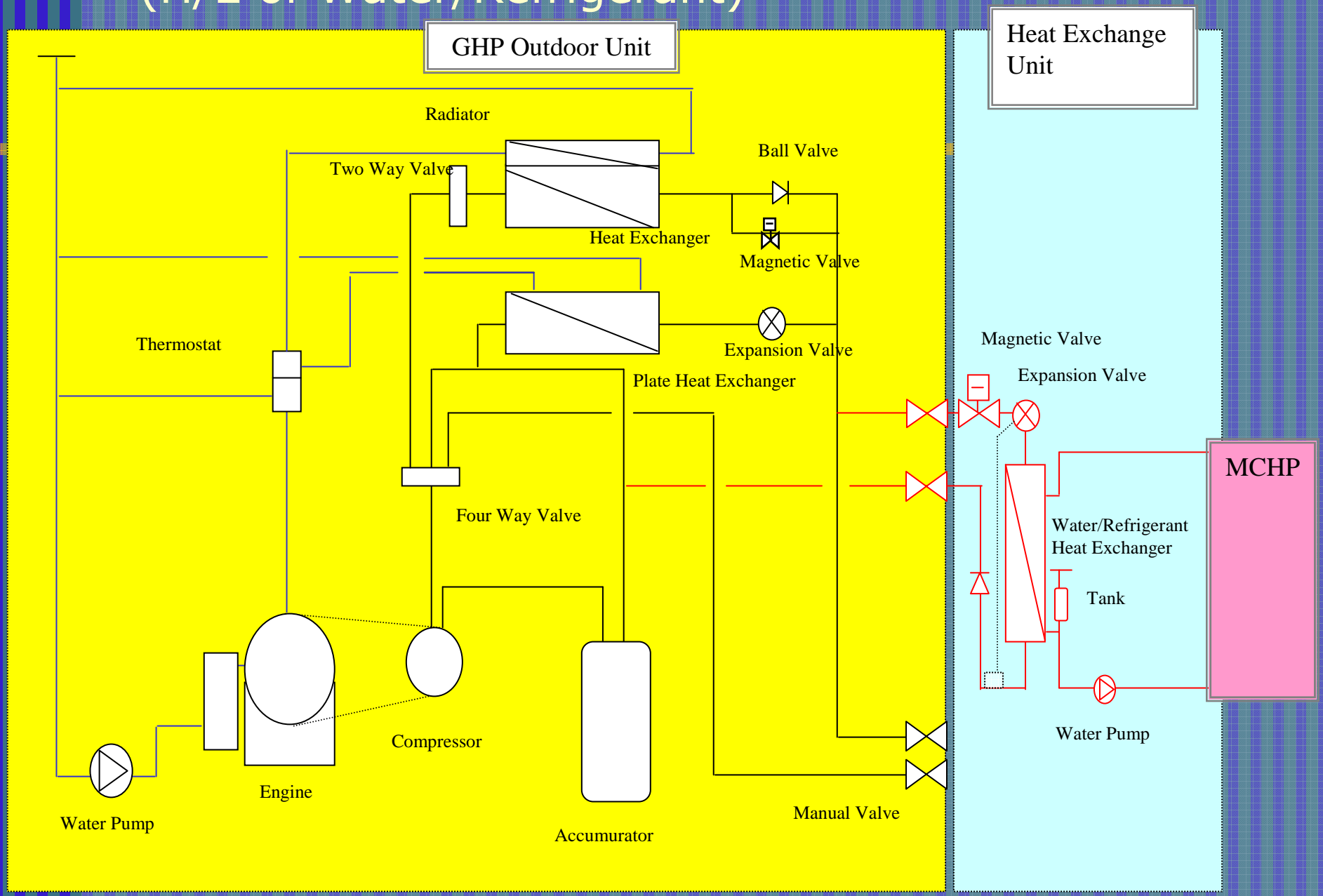
## REST HOME

**20HP**

CARPI MO (ITALY)

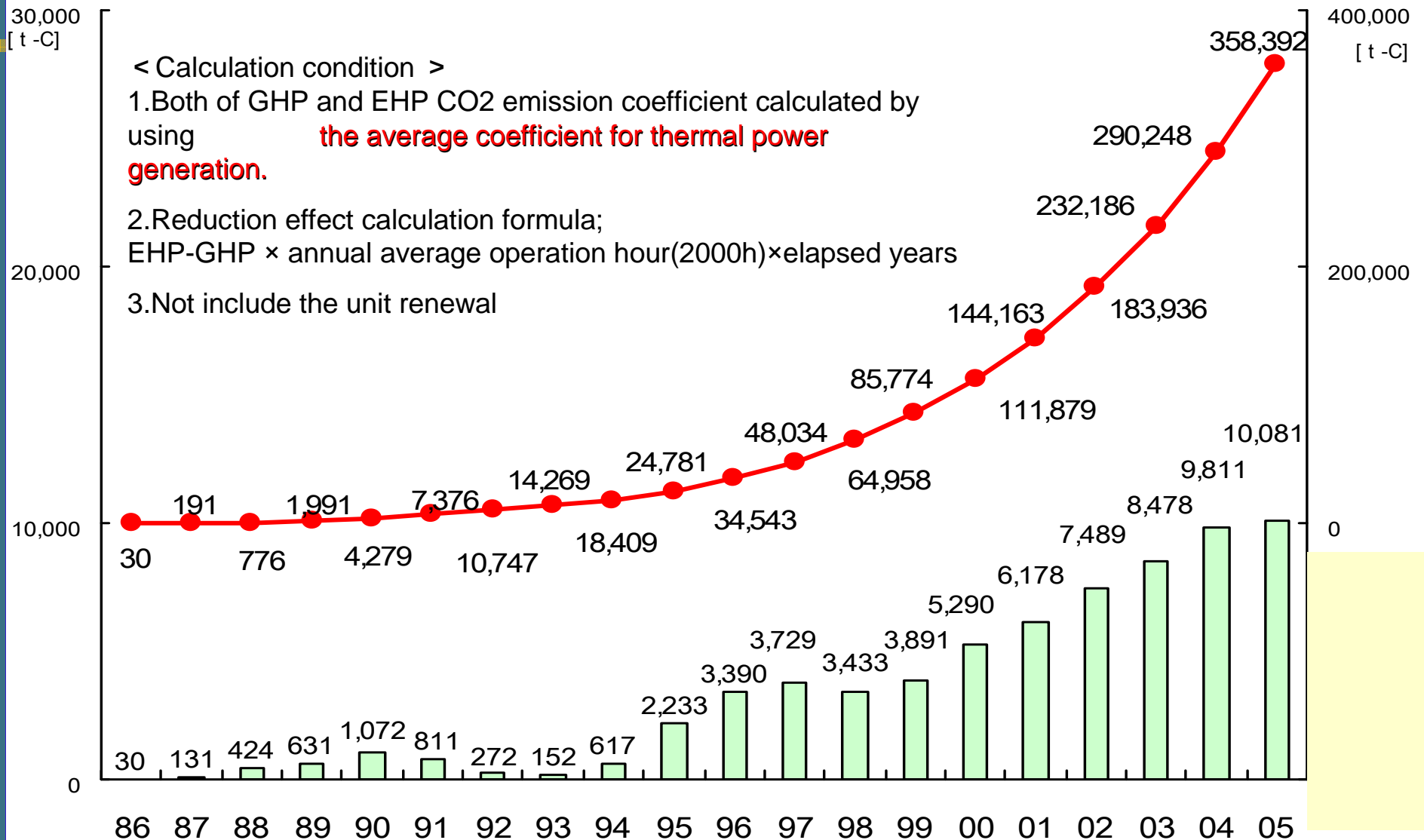


# GHP with reuse of thermal output of MCHP (H/E of Water/Refrigerant)



## Reduction Effect of CO2 Emission ( annual total / cumulative total )

- **The cumulative reduction effect is 358,392 t-C** as of the end of March, 2006 since its product had been launched in 1986

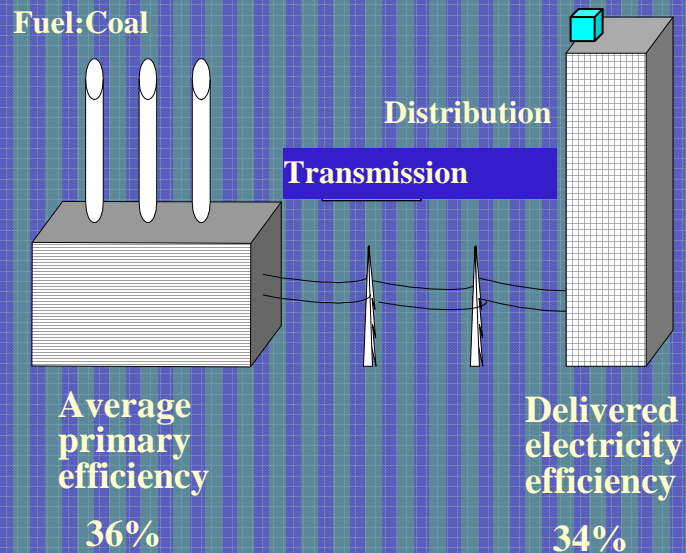


# Reduction of CO2 emission

CO2 emission can be reduced by 47% by GHP

## The case of EHP

Carbon gC/kWh of delivered electricity 263



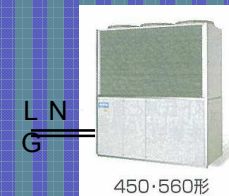
EHP EER=3.0

Carbon gC/kW of Air conditioning by EHP 87.7  
(=263/3=87.7)

VS

## The case of 56kW GHP

Capacity	
Cooling	56kW
Heating	67kW
Fuel Consumption	
Cooling	47.9kW
Heating	46.8kW
Power Consumption	
Cooling	1.49kW
Heating	1.55kW



LNG 50.2gC/kW

$$\text{Carbon} = (47.9+46.8)/2 \times 50.2 + (1.49+1.55)/2 \times 87.7$$

$$= 2376.9 + 133.3 = 2510.2 \text{gC}$$

Carbon gC/kW of Air conditioning by GHP 40.8  
(=2510.2/(56+67)/2=40.8)

# Expansion of gas consumption by GHP

