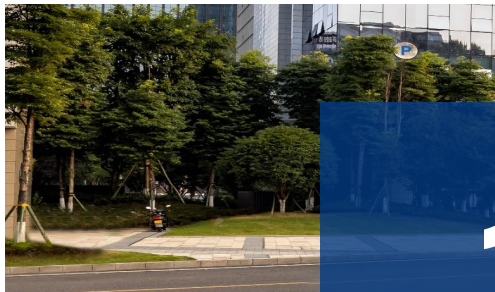
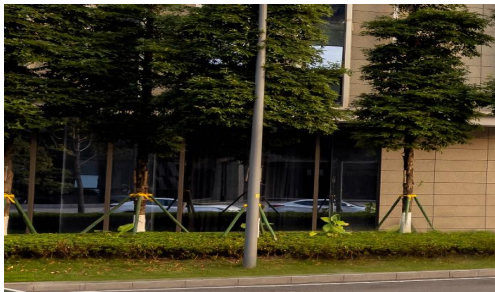
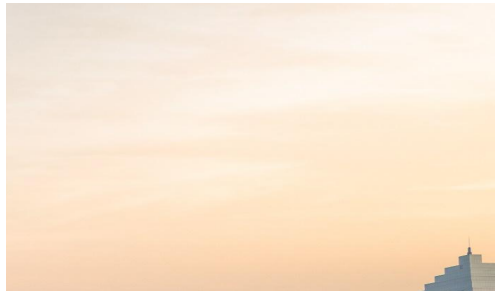
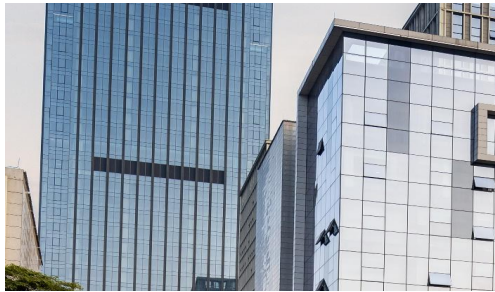
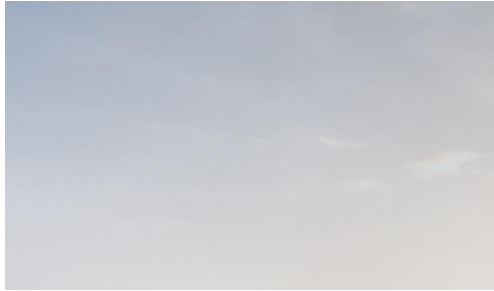
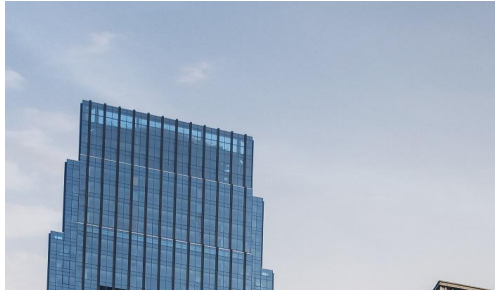




*Chongqing RATO Holding Group Co., Ltd.*

# **COMPANY PROFILE**

October 2020



# WHO WE ARE?

# >> ABOUT RATO

- Chongqing Rato Holding Group Co., Ltd. is a private company founded in 2007, with 5 main business divisions diversified in the industries of small gasoline engine and power equipment, motorcycle and ATV, diesel engines, mechanical components, smart equipment, financial service, etc.
- RATO group has about 10,000 employees and 2019 revenue reached 7.76 billion RMB. RATO products were sold to more than 80 countries or regions and the group company won awards of Top 500 Chinese Manufacturing Companies, Top 100 Chongqing Companies, Top 50 Profitable Chongqing Companies, Excellent Chongqing Private Company, Excellent Chongqing Industrial Company, etc.

12

12 Years

5

5 Divisions

80

Sell to 80  
Countries

77

7.7 Billions  
Revenue 2019

10000

10000 Employees

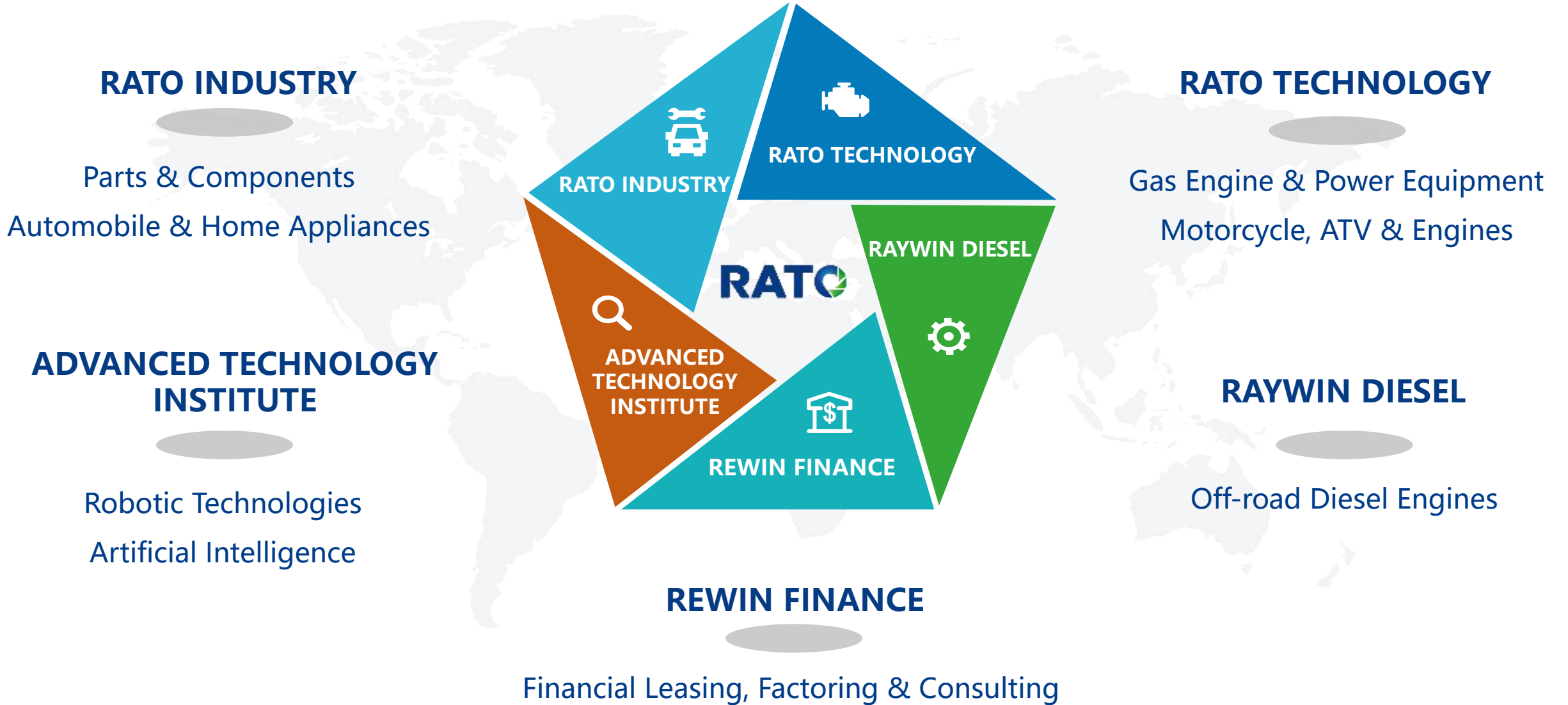
21

21<sup>st</sup> Private Co., of  
Chongqing





# BUSINESS DIVISIONS





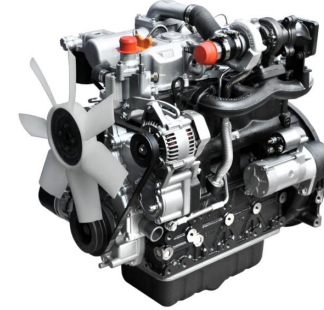
# MAIN PRODUCTS



**General Purpose Engine**



**Gasoline Power Equipment**



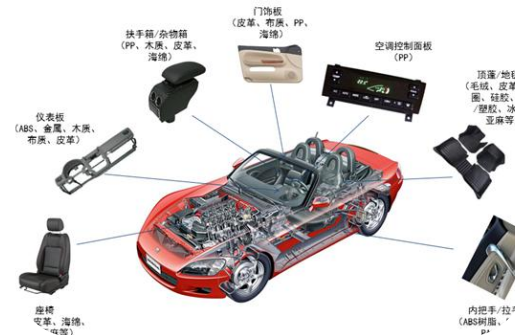
**Off-Road Diesel Engine**



**Motorcycle**



**All-Terrain Vehicle**



**Automobile Parts**



## OFFICES & FACILITIES-DOMESTIC



-  Headquarter, Chongqing
-  Shuangfu Plant, Chongqing
-  Yuzui Plant, Chongqing
-  Bishan Plant, Chongqing
-  Chengdu Plant, Sichuan
-  Changsha Plant, Hu'nan
-  Zhuzhou Plant, Hu'nan
-  Hefei Plant, Anhui
-  Zhengzhou Plant, He'nan
-  Langfang Plant, Hebei
-  Harbin Plant, Heilongjiang
-  Shenzhen Lab, Guangdong



# OFFICES & FACILITIES-OVERSEAS

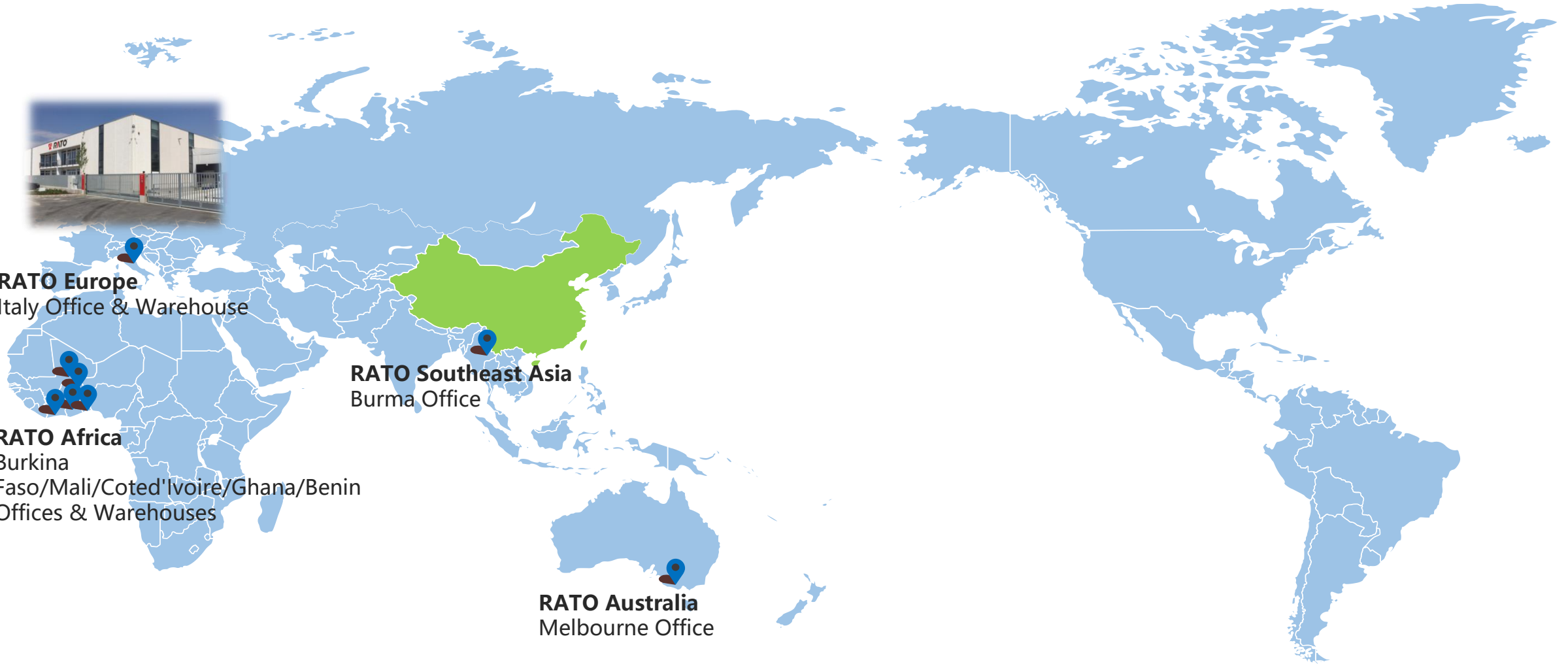


**RATO Europe**  
Italy Office & Warehouse

**RATO Africa**  
Burkina  
Faso/Mali/Coted'Ivoire/Ghana/Benin  
Offices & Warehouses

**RATO Southeast Asia**  
Burma Office

**RATO Australia**  
Melbourne Office





## MAIN CAPABILITIES



# R&D CAPABILITY

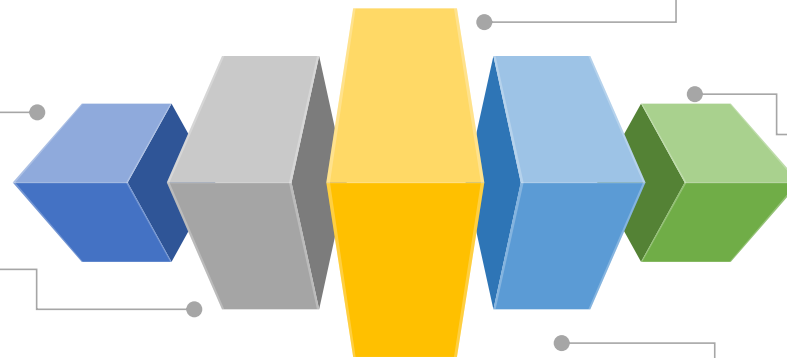
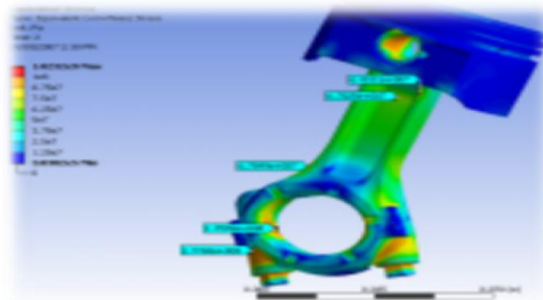


## Team & Experience

- More than 120 engineers and technicians;
- Japanese and European experts;
- Core staff with long term experience in the industry;
- More than 400 patents;

## Design Quality

- Product design & development process;
- DFMEA;
- CAD & CAE capability;
- Professional test plan and development procedures;
- R&D project management and PDM system;



## Facility & Instruments

- Top level lab in the industry with more than 30 million USD investment;
- Advanced test instruments specially for engine and power equipment

## Tech. Communication

- Projects with domestic universities and technological institutes;
- Work with foreign engineering companies & labs;

## Standard & Certification

- Full line engine certified by EPA/CARB/EU5;
- EPA & CARB bond (up to 10 million credit) ;
- Specialists work for legislation and standard issues;

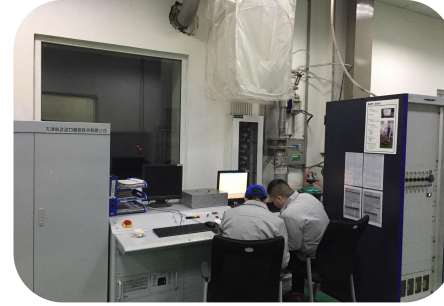




Hi-Lo Temp.



Vibration Test



Exhaust Emission



Evaporative Emission



Standard Environment



CO Emission

- Independent test building with more than 50 test cells;
- National level high-tech R&D lab;
- Leading R&D capabilities in the industry;
- Audit by main certification agencies and well-known customers.



# MANUFACTURING CAPABILITY



## LAND & FACTORY AREA

## PRODUCTION LINE

## PRODUCTION CAPACITY

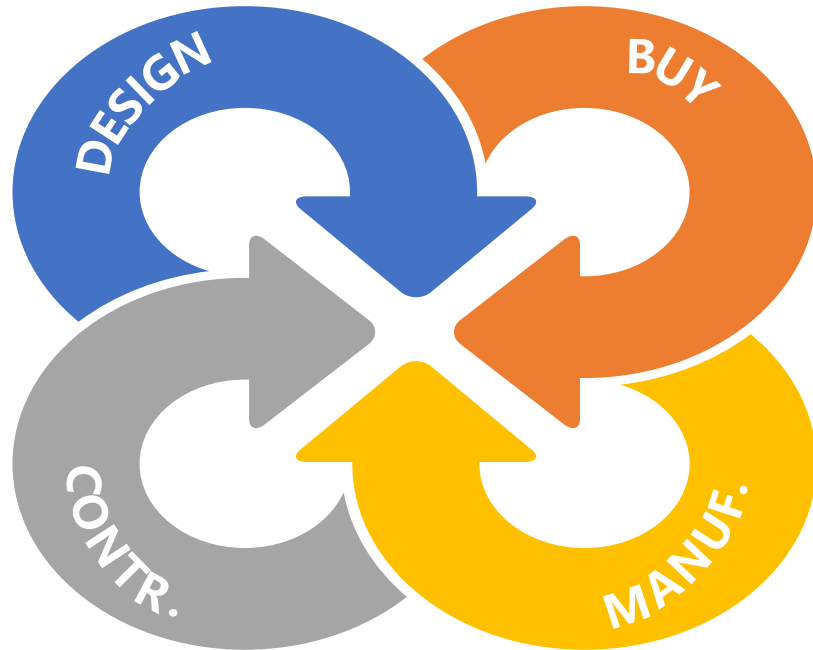
## COMPONENTS

- **Land area 105 acres;**
- Construction area 35 acres;
- Assembly workshop 16 acres;
- 6 general purpose engine assembly lines;
- 2 more engine lines coming soon;
- 3 generator & water pump assembly lines;
- 4 more generator lines in Vietnam coming soon;
- 2 tiller & OPE assembly lines;
- Machining, welding & painting lines in house;
- **200K engines per month** (8K per day);
- **80K generator & water pumps per month** (3K per day);
- 25K tillers & OPE per month (1K per day);
- More than 93% on time delivery for all orders;
- Additional 75K engines per month (3K more per day);
- Frames and plastic parts could build in house;
- Capabilities of machining, welding, coating, etc.
- With robotic welder & automatic E-coating line.





# QUALITY CONTROL CAPABILITY



- Experienced engineering design team for less failure and quality issues;
- Mature supplier quality management system and experienced SQE team;
- Strict components incoming inspection;
- Advanced physical and chemical inspection facilities and equipment;
- 100% production line test;
- Advanced equipment assistance and failure control mechanism at critical positions
- On-line and off-line QC inspection;
- Random check of performance and durability before shipment.

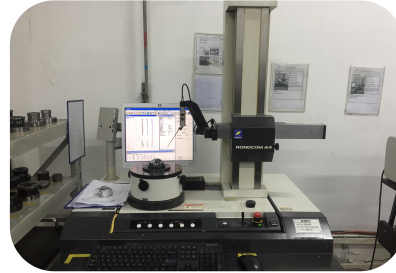




# QUALITY CONTROL CAPABILITY



3D Inspector



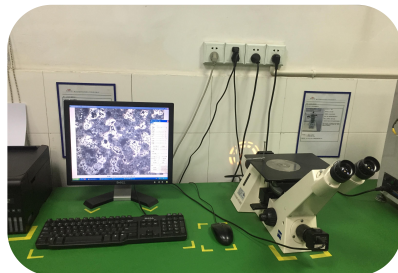
Roundness  
Inspector



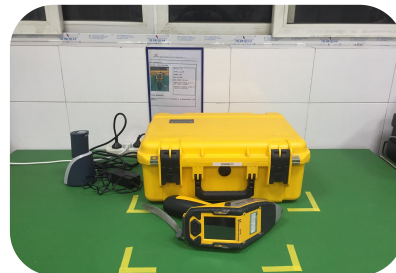
Rigidity  
Inspector



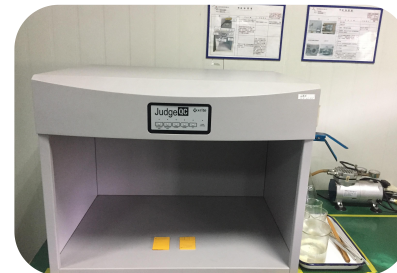
Chemical  
Analyzer



Physical  
Analyzer



Spectrograph  
(RoHs)



Color Difference  
Inspector



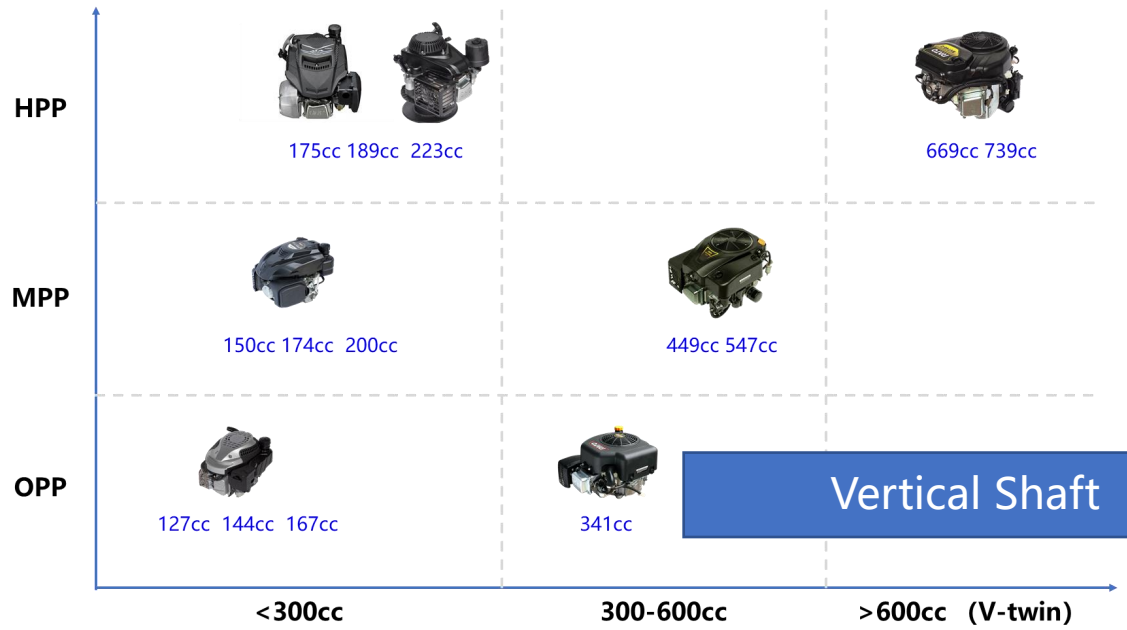
Salt Spray  
Chamber



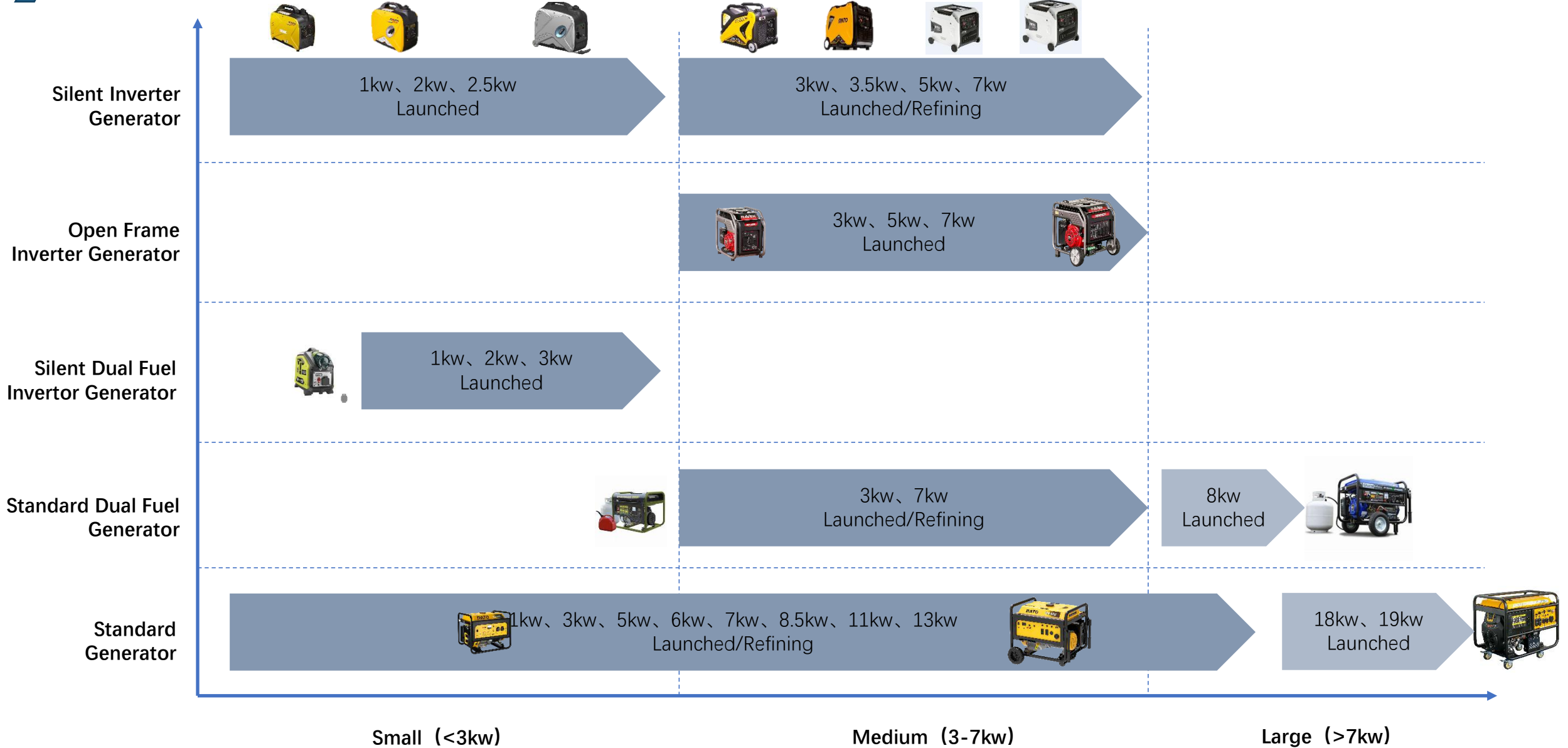
# GPE PRODUCTS INTRODUCTION



# GENERAL PURPOSE ENGINES



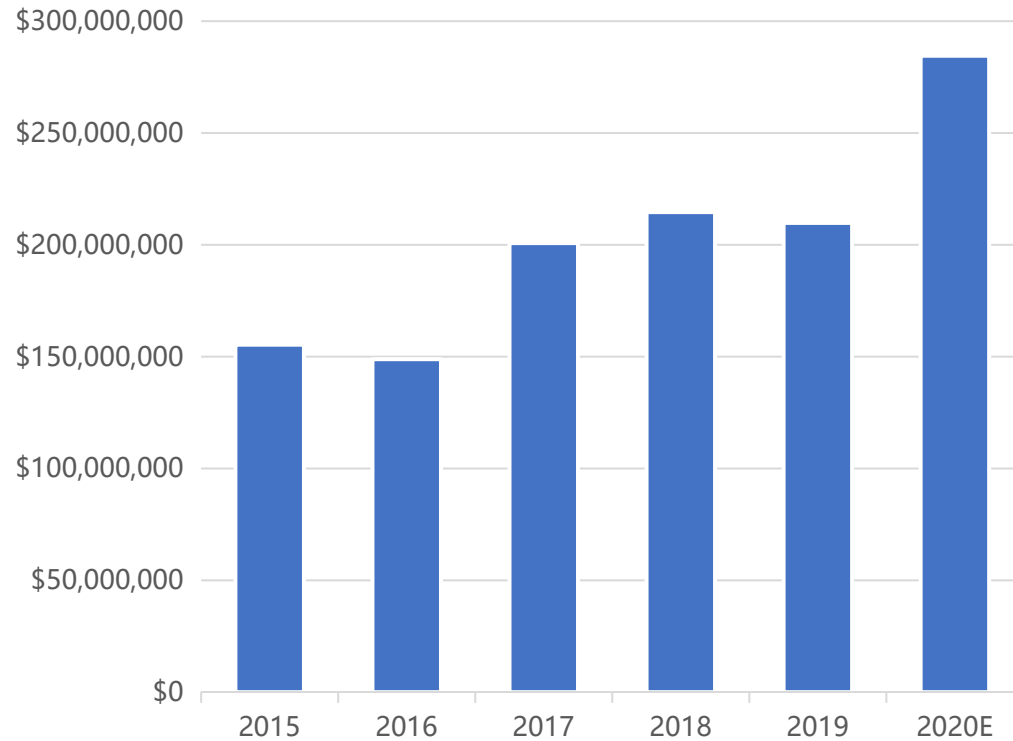
# GASOLINE GENERATORS



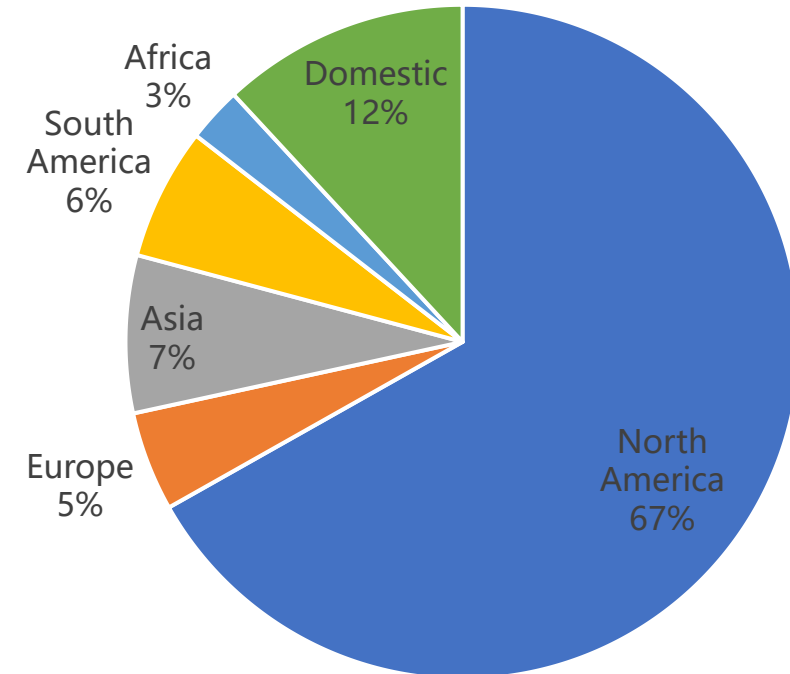


# SALES ACHIEVEMENTS-GPE PRODUCTS SALES

## Annual Sales of GPE Products



## Market Segments of GPE Sales



- Going to **286 million** USD revenue in 2020E;
- More than **2.65 million** engine and OPE sold to global market;
- North America is the largest market of RATO GPE sales.



# MARKET REPUTATION-GPE CUSTOMERS





# MARKET REPUTATION-GENERAL PURPOSE ENGINES



PoulanPro



Sabo (Deere)



Powerstroke



Homelite



Ryobi



Karcher



Mi-T-M



Earthquake



Powermate



DR (Generac)



Champion



# MARKET REPUTATION-PORTABLE GENERATORS



INV1250



INV2000



INV4000



RP3600



RP5500



RP6500



RP6500E



RP7500E



RP8000E



RP12000E



# MARKET REPUTATION-PORTABLE GENERATORS



2000i



3500i



3600M



6000M



8000M-E



3400i



3600



6000



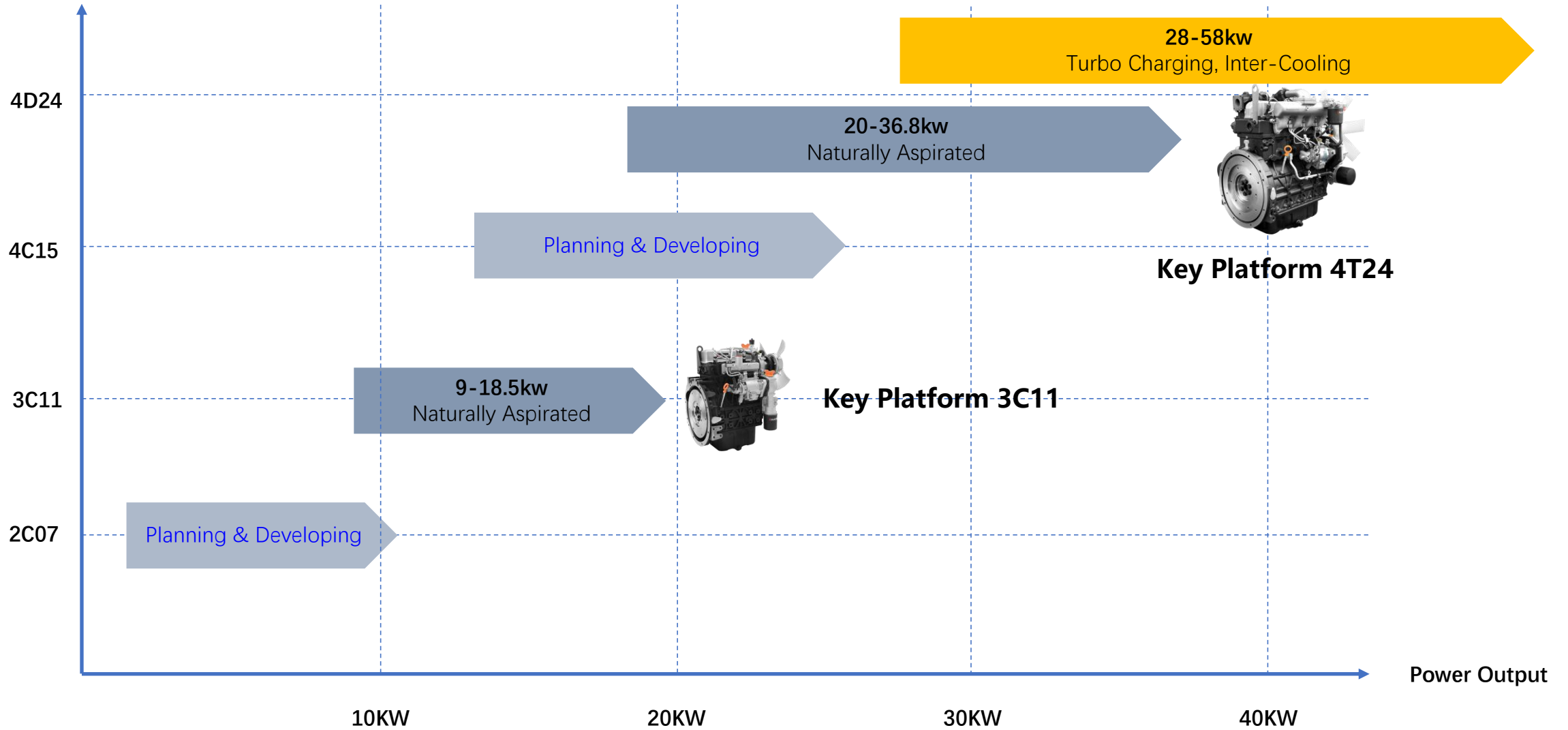
5000i



# DIESEL ENGINES INTRODUCTION

# DIESEL ENGINES LINEUP

Engine Platform





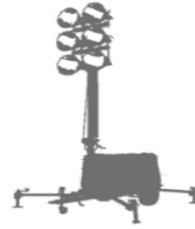
# DIESEL ENGINE APPLICATIONS



Marine



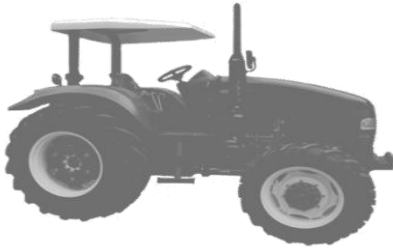
Gensets



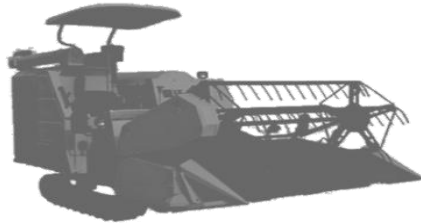
Light Tower



Air Compressor



Tractor



Harvester



Riding Mower



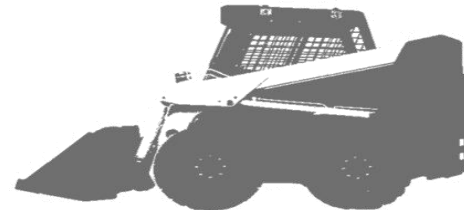
Aerial Cage



Excavator



Road Roller



Skid Steer Loader



Forklift



# DIESEL ENGINES SPECS



3C11



4D24



4D24T

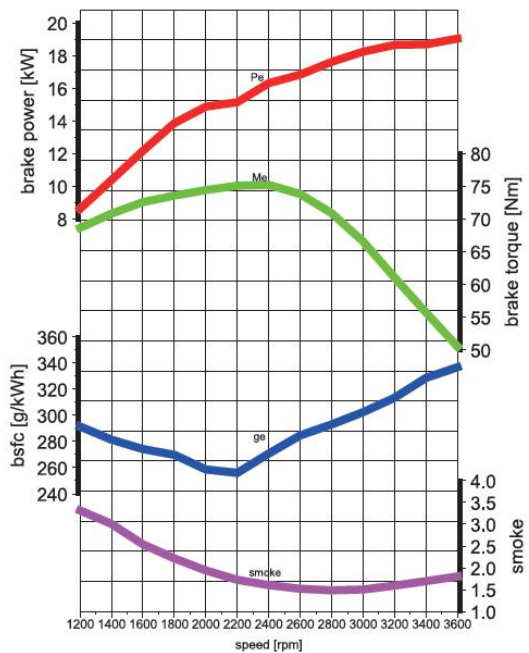
## 发动机基本技术参数

参数名称	3C11	4D24	4D24T
发动机式	直列、立式、水冷、四冲程		
燃烧系统	非直喷	直喷	
缸数	3	4	
缸径×行程 (mm × mm)	76×78.4	87×103	
排量 (L)	1.07	2.45	
压缩比	24 : 1	19 : 1	17.8 : 1
排放水平	非道路国III/EU Stage IIIA		
进气方式	自然吸气	自然吸气	增压
功率/转速 (kW/rpm)	18.5/3600	36.8/3000	48/2700
	16.3/2600	36.8/2600	44.5/2600
	15.8/2400	36.8/2400	44.5/2400
	14.6/2200	33/2200	42/2200
	14.4/2000	29.5/2000	39/2000
最大扭矩/转速(N.m/rpm)	72/1600±100	160/1600±100	210/1700±100

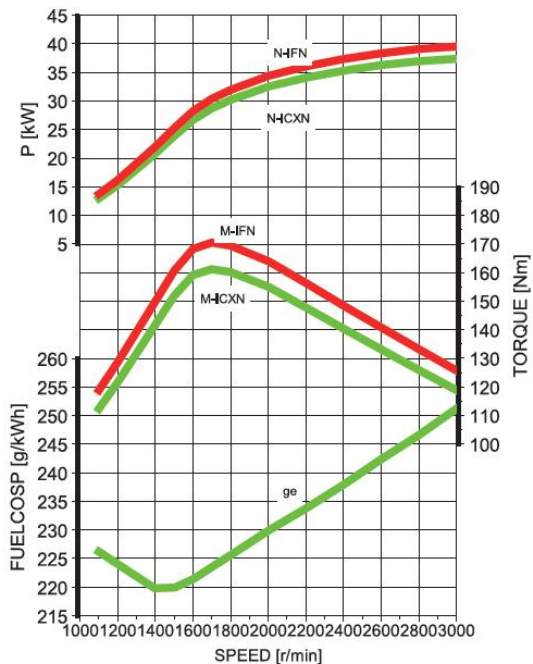


# DIESEL ENGINES PERFORMANCE

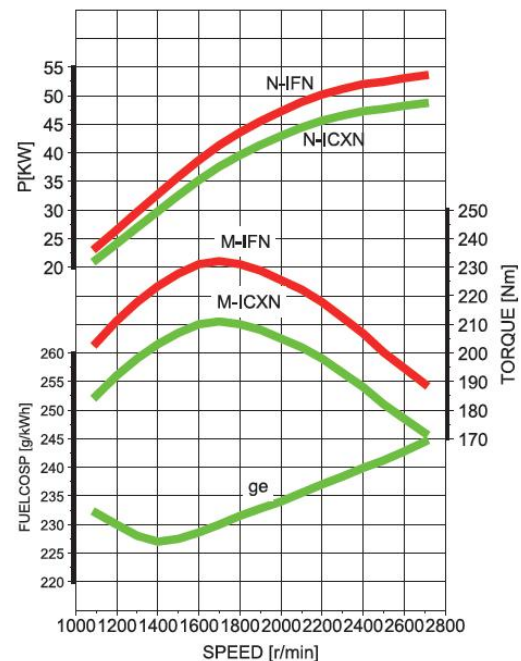
## 发动机性能曲线



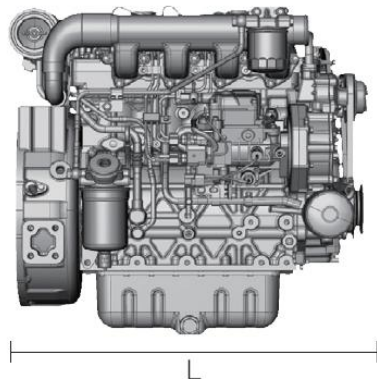
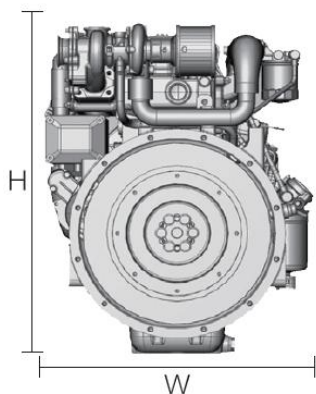
3C11性能曲线



4D24性能曲线



4D24T性能曲线



### 安装信息：发动机尺寸与重量

型号	重量 (kg)	尺寸 (L x W x H, mm)
3C11	89	498 × 396 × 609
4D24	195	690 × 495 × 715
4D24T	205	698 × 508 × 718



## MARKET REPUTATION-DOMESTIC CUSTOMERS



LOVOL



ZOOMLION  
中联重机

东风井关农业机械有限公司





# MARKET REPUTATION-DOMESTIC CUSTOMERS

## European Market:



CELEBRATING OUR FIRST 100 YEARS.  
GEARING UP FOR THE NEXT.



## Middle East Market:



## African Market:



## Southeast Asian Market:



# THANK YOU

Website  
[www.ratogh.com](http://www.ratogh.com)  
[www.raywinpower.com](http://www.raywinpower.com)

Contact  
[charlie@rato.cc](mailto:charlie@rato.cc)  
[nadia.y@rato.cc](mailto:nadia.y@rato.cc)

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