



# 2018

## 社会责任报告

Social Responsibility Report



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上海振华重工（集团）股份有限公司  
Shanghai Zhenhua Heavy Industries Co., Ltd.(ZPMC)





2017

社会责任报告

Social Responsibility Report

2018

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2019

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Social Responsibility Report

On this report

Scope

This report covers Shanghai Zhenhua Heavy Industries Co., Ltd., branches and subsidiaries with the brand of ZPMC. For the purpose of this report, Shanghai Zhenhua Heavy Industries Co., Ltd shall be referred to as “ZPMC” , “the Company” and “We” .

Period

This report is made annually from Jan 1<sup>st</sup> to Dec 31<sup>st</sup>, 2018, of which some parts may be beyond the abovementioned period.

Issuing

This report is the 11th annual social responsibility report since the first one in 2009.

Descriptions

This report shall have no false information or misleading statements and ZPMC shall be responsible for the truth, accuracy and integration of the contents.  
The financial data in this report shall be only for reference and those in the annual report of the year shall prevail. Unless otherwise expressed, the sum in the report shall be in RMB.  
All pictures of projects and equipment in this report are those of the projects completed by the Company, own equipment or products of the Company.

Reference standards

ZPMC prepares the main contents of this report in accordance with the requirements of GB/T36000-2015 Guidance on Social Responsibilities with consideration on expectation of related interested parties.

How to obtain this report

This report is issued in print and electronic version. The electronic version can be downloaded from [www.zpmc.com](http://www.zpmc.com). Please make contact with us in the followings if you are intended for the printed report or providing any suggestions or opinions on this report:  
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## Great Mission in Great Era

**2018** is the 40th anniversary of the reform and opening-up, the first year to put the spirits of the 19<sup>th</sup> National Congress of the Communist Party of China into operation and the 26<sup>th</sup> anniversary of the founding of ZPMC. All the staff of the Company has been struggling for the year, selling products to 101 countries and regions in the world and keeping the top port machinery market share for 20 consecutive years.

The history always provides the wisdom and strength to walk ahead in some particular periods. In 2018, we were so delighted to find that Hong Kong-Zhuhai-Macao Bridge with participation of ZPMC had been completed successfully, that Tiankun, Longyuan Zhenhua No. 3 and some other important equipment had been manufactured for the development of the marine power, that more and more equipment by ZPMC had been exported to countries along the route of the Belt and Road and that smart ports and cities had been improving the life of the people gradually.

We keep devoting ourselves to the work, winning the reputation for others naturally. ZPMC, as a famous heavy equipment manufacturer in the world, has achieved much with social support and help, winning their approval as well. We will struggle hard for expectations from interested parties. We will, adhering to the development idea of innovation, coordination, environment protection, opening and sharing, develop into a responsible corporation, bearing the historical responsibility to construct the industrial power.

**Innovative development** The innovation capacity of a corporation influences or even decides the fate of the corporation. The new science and industrial revolution is coming, with important and disruptive techniques springing up, speeding up transformation of science and technology achievements. The innovation means the development and promising future under such conditions. ZPMC continues to introduce new technology into the heavy equipment manufacturing with a series of innovative measures, showing primary achievements in major projects, including Hong Kong-Zhuhai-Macao Bridge, Shanghai Yangshan Phase IV automatic terminal and Tiankun. ZPMC will provide more important equipment for the manufacturing industry of China with the dream of setting a global record each year.

**Coordinative development** Coordinative development means to optimize the layout with

consideration on various factors. ZPMC will devote itself into the local coordinative development and focus on its own development coordination between benefits and spiritual civilization. To meet the new requirements of the coordinative development, ZPMC makes adjustment on the industrial arrangement to promote new products to Xiong'an New District, Changjiang River Delta, Guangdong-Hong Kong-Macao Greater Bay Area and Economic Zone on the West Side of the Straits, supporting the development of these areas. Besides creating benefits, ZPMC, adhering to socialist core values, has been focusing on the coordinative development of spiritual civilization and material civilization.

**Green development** A company must respect, conform to and protect the nature but doesn't damage it in the development. ZPMC, located along the Changjiang River and near East China Sea, has been influencing the ecological environment of the Changjiang River Basin. ZPMC has been abiding by the state policies on environment protection to develop the clean energy with increasing investment on the research and development of green products, sharing the environmental benefits with more interested parties.

**Opening-up development** The world is in the great development, reform and adjustment at present, featuring opening up, inclusiveness and multiple learning. To meet the requirements of users from 101 countries and regions in the world, ZPMC, together with 28 overseas branches, will continue opening-up for development. The Company signed contracts of 1.5 billion with 6 foreign partners at the first CIIE in 2018, showing the intension for opening-up development. In the future, ZPMC will continue to devote into the new inclusive international development access of seeking common ground while reserving differences, contributing to the community of shared future with the equipment manufacturing.

**Shared development** ZPMC will share the development achievements with the staff, interested parties and the society. We established the ZPMC Talent Tank and Academician Workstation in 2018 for mutual benefits and win-win cooperation with external wisdom. The Company also expanded the new civil fields with integration of the development with the urban construction. In the Company, we, adhering to the sharing on fair basis, have been collecting opinions of the staff to make sure the whole staff participating into the development and enjoying the sense of achievements. ZPMC will keep expanding new accesses for shared development and develop into a responsible corporation.

Great times means high development mission. The development strategy of establishing the flagship of national industry of China is inseparable from the growth of the Company, transformation and upgrading of products Made in Shanghai and Made in China as well as the people's expectation for a happy life. Only the persistent strugglers deserve the success. In the future, we will, together with interested parties, take the new mission in the new era to struggle for developing China into a modern power.

Party Secretary and Chairman of ZPMC







## 2018 List of ZPMC's Social Responsibility Activities



### Innovation

Undertaking 156 provincial research topics  
Applying for 1,323 patents  
Wining Shanghai Science and Technology Award  
Promoting the industry-university-research cooperation



### Community of shared future

Promoting products to 101 countries and regions in the world  
Making positive response to the Belt and Road Initiative  
Establishing the intelligent digital platform for the globe  
Holding the terminal intelligent solution forum



### Environment protection

Restructuring workshops  
Developing new energies  
Controlling pollution  
Developing environment-friendly products



### Shared development achievements

Promoting the construction of smart city  
Promoting civil welfare  
Promoting social services  
Sharing care  
Providing opportunities for healthy work and promotion



## Chapter 1

# ZPMC

Zheng Liangyu, a merchant with the ambition to save the nation by engaging in industry, established Gongmao Shipyard at the side of Changjiang River in 1885. After the development for more than 100 years, we are working to revitalize the Chinese nation with the real economy.



## Part 1

# About us



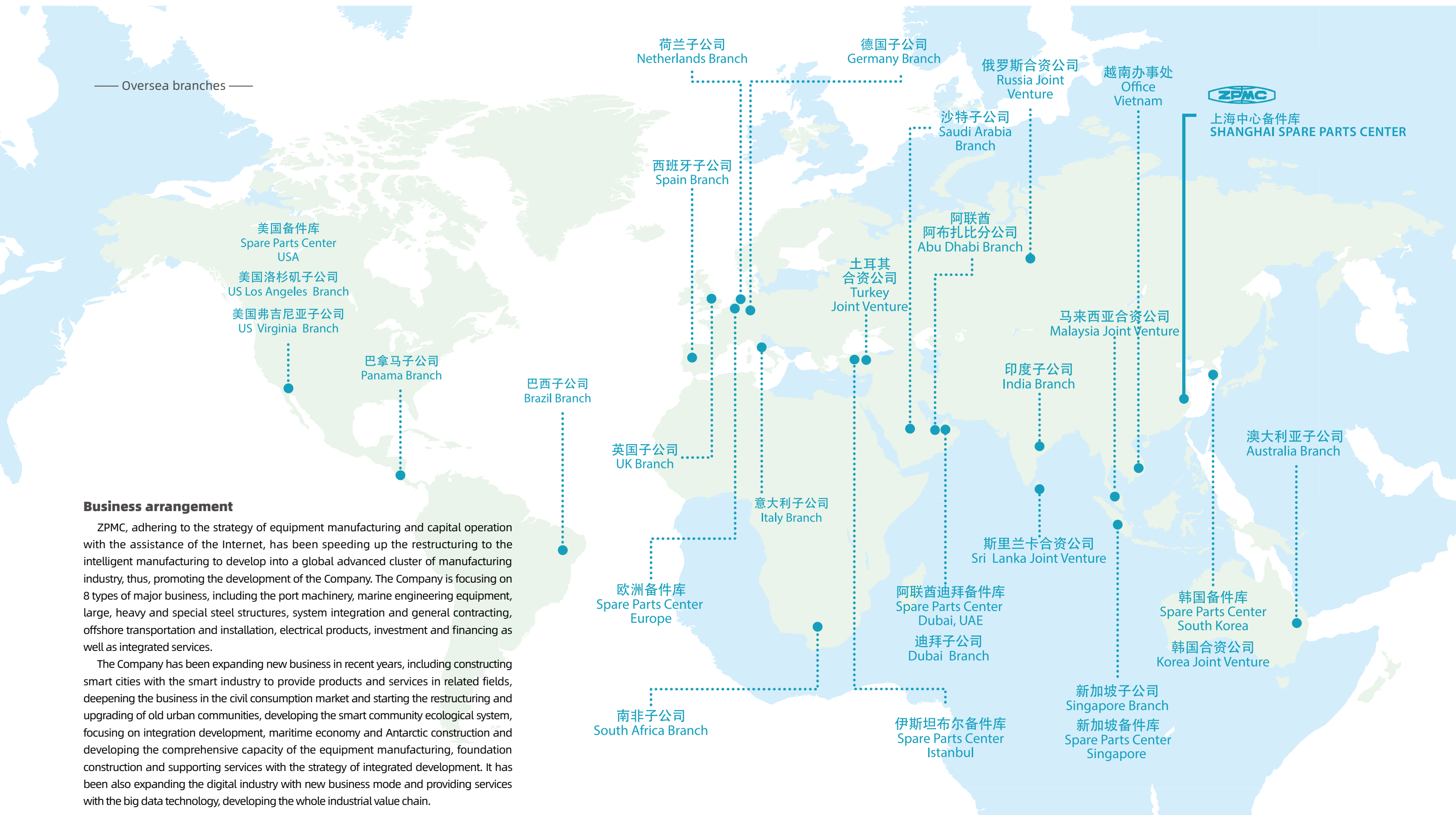
— Organization of ZPMC —

## Company profile

Shanghai Zhenhua Heavy Industries Co., Ltd. (hereinafter referred to as “ZPMC” or “the Company”) is leading in the heavy equipment manufacturing as one state-owned listed company of share A and B held by China Communications Construction Company Limited ( “CCCC” ), one of top 500 in the world. ZPMC was founded in 1992 on the basis of Gongmao Shipyard of 1885. The Company, with the headquarters in Shanghai, 10 bases in Shanghai and Jiangsu Province and 28 oversea branches in the whole globe, is one of the largest heavy equipment manufacturers in the world, whose products are sold out to about 300 terminals in 101 countries and regions of the world.

ZPMC has been developing into an excellent company with the international competence in the past 27 years, promoting the China’s brand to the world. The Company is developing into the flagship of the national industry with the business mode of the equipment manufacturing and capital operation with the assistance of the Internet.





### Business arrangement

ZPMC, adhering to the strategy of equipment manufacturing and capital operation with the assistance of the Internet, has been speeding up the restructuring to the intelligent manufacturing to develop into a global advanced cluster of manufacturing industry, thus, promoting the development of the Company. The Company is focusing on 8 types of major business, including the port machinery, marine engineering equipment, large, heavy and special steel structures, system integration and general contracting, offshore transportation and installation, electrical products, investment and financing as well as integrated services.

The Company has been expanding new business in recent years, including constructing smart cities with the smart industry to provide products and services in related fields, deepening the business in the civil consumption market and starting the restructuring and upgrading of old urban communities, developing the smart community ecological system, focusing on integration development, maritime economy and Antarctic construction and developing the comprehensive capacity of the equipment manufacturing, foundation construction and supporting services with the strategy of integrated development. It has been also expanding the digital industry with new business mode and providing services with the big data technology, developing the whole industrial value chain.

Industrial associations that ZPMC participates in

China Water Transportation Construction Association	Shanghai Association for Quality
China Ports and Harbors Association	Shanghai Federation of Economic Organizations (Shanghai Federation of Industrial Economics)
China Heavy Machinery Industry Association	
China Steel Structure Society	Shanghai Work Safety Association
China Dredging Association	Shanghai Institute of Navigation
China Shipowners' Association	All-China Environment Association
	.....

Major business data of 2018

Operation revenue on-operating income	21, 812, 389, 644
Total profit	537,005,887
Total assets	70, 598, 364, 627

Currency: RMB Unit: ¥  
(The data in the annual report shall prevail in case of any conflict between such table and those in the annual report)

Corporation culture

Corporation vision	Excellent company with international competence
Corporation mission	Promoting Chinese brand to the world
Corporation morality	Pursuing social virtues for positive development
Core values	Fair, tolerant, practical, innovative

ZPMC’s calendar

January	February	March learning from Leifeng	April	May	June work safety
July incorruption promotion	August	September quality assurance	October	November science and technology improvement	December

Branches of Party and League

ZPMC Party Committee is focusing on developing with the advanced theory of the Party as the guidance in 2018, the first year to carry out the spirits of the 19th National Congress of the Communist Party of China.

Foundation

ZPMC party committee has been making decisions after collective discussion in accordance with the requirements of the Party Constitution and regulations of democratic centralism.

Party organization of basic level The Company has been expanding and improving the Party organization of basic level, focusing on improving the organizing capacity. The Company sets up the responsibility area, model post and pioneer team of Party members to motivate the Party members to play a leading role in the work.

Education The Company motivates the Party members to learn the spirits of the thought of socialism with China’s characteristics by Xi Jinping and the 19<sup>th</sup> National Congress of the Party by the perfect plan and through regular activities, including the study of the central teams of the Party Committee, micro-course by the Party members and training classes, improving the quality of the Party members.

- 1 . Study on spirits of two Sessions by ZPMC central team.
- 2 . Study on spirits of two Sessions by ZPMC central team.
- 3 . Review of admission oath at Nanhu Revolution Education Base by ZPMC Party members.







1. ZPMC Party members copying Communist Manifesto.



2. ZPMC holding activities in memory of 200<sup>th</sup> birthday of Marx.

## Party activities in memory of 200<sup>th</sup> birthday of Marx

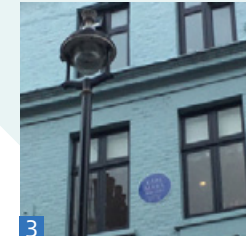
ZPMC Party Committee held serial activities in memory of 200<sup>th</sup> birthday of Marx in May, 2018, organizing the Party members watching the conference, all Party members, applicants for Party membership, League members and active mass representatives of more than 500 totally making review of the admission oath and copying the *Communist Manifesto* and *Constitution of the Communist Party of China*. The participating members shared the admiration and respect to the great man with Wechat messages among circles of friends.



1



2



3

1. Nameplate of apartment of Karl Marx.

2. Insides of Marx Memorial Library.

3. Marx Memorial Library.

The Party members in overseas branches also participated into the activities. ZPMC UK Branch organized the staff for one-day visit to the working and living places of Marx, including British Museum, Apartment No. 28 at Dean Street and Marx Memorial Library as well as Highgate Cemetery, promoting the overseas culture of the Company with various activities.

## Labor Union and League

ZPMC has been focusing on the work of Labor Union and League with concentrate efforts.

The Company promoted the members of Labor Union participating into democratic politics, economic and technical innovation, quality improvement, cares and self-improvement. The Labor Union of 2 different levels have participated into 37 labor protection inspections of the unit, urging the correction of all 92 arising problems.

The Company organized the League of different levels for deep learning of Xi Jinping's thought of socialism with China's characteristics in the new era and the spirits of the 19<sup>th</sup> National Congress of the Communist Party of China as well as various activities to promote the development and achievements of the young staff, including Challenge Cup Competition, Youth Forum, Youth English Show, Youth Reading and Youth Sports.



Voting of present representatives of 2018 League Conference.



2017 general meeting of shareholders by ZPMC on June 26<sup>th</sup>, 2018.

## Credit

ZPMC, a famous heavy equipment manufacturer in the world, is adhering to the core idea of abiding by the business morality, international protocols and related laws and regulations.

### Legal operation

ZPMC made the information disclosure of the listing company in accordance with the requirements of Shanghai Stock Exchange (SSE), Shanghai Securities Regulatory Bureau and China Securities Regulatory Commission, publishing 24 reports in 2018, including 20 regular reports and 4 interim ones. The Company held the general meeting of shareholders in time and received no questioning from related functional departments of SSE.

Besides the compliance trainings in China, ZPMC also organized oversea branches and offices for oversea compliance training to improve the awareness and effort on the legal operation and identification and prevention of different risks.

## Anti-corruption

ZPMC, adhering to the principle of credit operation and zero tolerance on corruption, required all the staff or third parties on behalf of the Company should abide by laws, regulations and credit rule of the local countries.

### Zero tolerance on corruption

ZPMC has been establishing the flow and system against corruption and commercial bribery to carry out the 8-rules on arising problems by the central government. The Company prepared and printed Opinions on Incorruption and Anti-corruption Assignment in 2018, making clear the emphasis of anti-corruption of the whole year. The Company also passed Procedures on Party Organization Department Requiring Opinions of Commission for Discipline Inspection before Leaders' Taking Office, making assessment on the corruption of related carders under the management of the Party committee of the Company, avoiding the illegal promotion of carders, thus, promoting the systematic, standard and regular supervision on related leaders of the Company.

To improve the incorruption, the office of the Commission for Discipline Inspection provided various means for the real time supervision and report from masses.

### List of anti-corruption achievements of ZPMC

Item	Quantity	Effect
Supervision and inspection on key nodes	52	Preventing arising problems effectively
"3 in 1" contact point	5	Reducing risk of corruption in procedures of the projects
Supervision suggestions	27	Reducing risk of corruption in the operation of the Company
Correction of management loophole	9	Reducing risk of corruption in the operation of the Company
Signing incorruption commitment and responsibility documents	338	Assigning the incorruption responsibility to specific posts
Setting up incorruption archives	29	Avoiding illegal promotion of carders
Issuing carder incorruption assessment certificates	77	Making fair and overall assessment on carders

### Culture of incorruption

ZPMC considers it quite important to develop the incorruption culture for promoting the anti-corruption. In July, 2018, ZPMC organized a series of activities on incorruption promotion for a month, including study and online test of regulations and constitution of the Party and newly modified disciplinary regulations, making the incorruption atmosphere.



ZPMC staff visiting anti-corruption education base.



## Focus

List of incorruption cultural activities of ZPMC in 2018

Item	Times
Special training on incorruption	119
Attendance of cultural activities	2,600
Slogans of incorruption culture	385
Incorruption documentary	83
Case learning	115
Related books	1,500 copies
Visiting anti-corruption education base	28

### Common voices on anti-corruption

To establish the sound incorruption cultural atmosphere, ZPMC collected related slogans from the whole staff of the Company in 2018, promoting the incorruption culture widely.

*We can normalize our activities, improve personal quality and make win-win cooperation with the sense of incorruption.*

--- ZPMC Xu Yongsai

*Figures showing efficiency of the terminals while corruption guaranteeing development of the Company.*

--- ZPMC Yucan

*Incorruption for the dream of CCCC while diligence for the member of ZPMC.*

--- 2<sup>nd</sup> Branch of ZPMC Party Committee

*Fulfill the work with original aspiration.*

--- ZPMC Miao Chengming

*Incorruption for common life and work.*

--- ZPMC Helei



Seminar on incorruption by ZPMC.

### Seminar on incorruption

ZPMC held the seminar on incorruption --- preventing work-related crime in the perspective of psychology on Sep 13<sup>th</sup>, 2018. The seminar started with related laws and psychological solutions on work-related crimes, providing a quite new prospective for the whole Company on the psychological solutions to prevent work-related crimes on the basis of detailed descriptions of such laws. A person, as an individual, must be determined to keep respect on rules and get rid of the fluke mind from the deep heart. Thus, it can improve the target education, standard system and effective control.



### Company in 2018

With the elapse of time, our hard work in spring is amply rewarded with a good harvest in autumn. Looking back, we can say proudly that we have made the most fruitful use of every day, every hour and every minute of the year 2018.

### Leaders concern

#### Primer Li Keqiang's inspection to ZPMC

Premier Li Keqiang inspected ZPMC during his visit to Shanghai Free Trade Port on April 10<sup>th</sup>, 2018. Li encouraged ZPMC, the famous heavy equipment manufacturer and the manufacturer and supplier of automatic terminal equipment and system with highest competence in the world, to produce the leading China equipment of high quality and to provide China services of the first class as well as to revitalize China with the equipment.





#### **Liqiang, Secretary of Shanghai, visiting ZPMC**

Liqiang, Secretary of Shanghai, visited the Company on June 6<sup>th</sup> and Guang Tongxian, previous president of the Company and Huang Qingfeng, President and Vice-secretary of ZPMC welcomed Liqiang, et al. Liqiang visited Changxing Base and inspected the intelligent welding workshop and fitting-out terminals to learn about the business of the Company.



#### **Li Xiaopeng, Minister of (MOT), visiting ZPMC**

Li Xiaopeng, Minister of Ministry of Transport (MOT), visited Changxing Base on July 12th, inspecting on the intelligent manufacturing workshop, site manufacturing port machinery and No. 0 fitting-out terminal and going aboard on Dehe, a 5,000t lifting salvage barge for Yantai Salvage Bureau. Li expressed appreciation on long term contribution on the construction of transport power and wished the Company to make positive R&D on more core marine engineering equipment, contributing more to the development of the social modern power.



#### **Xu Fushun, Vice-director of SASAC, visiting ZPMC**

Xu Fushun, Vice-director of State-owned Assets Supervision and Administration Commission (SASAC) of the State Council, visited the Company on August 14th. Xu expressed that the Company, as the representative of the heavy equipment manufacturer of China and one of the core equipment manufacturers, should deepen the reform on the state strategic positioning with determination and innovative mechanism and system.

#### **Haopeng, Secretary of SASAC visiting ZPMC**

Haopeng, Secretary of SASAC, visited the Company on December 4<sup>th</sup>, including the steel box girder intelligent manufacturing workshop of Changxing Base, Chuangli, a 4,500t floating crane and the vertical bus parking garage developed independently by the Company. He expressed full agreement on the development ideas and achievements on optimizing traditional business and rapid expansion on emerging business on the basis of own advantages on technical research and development.



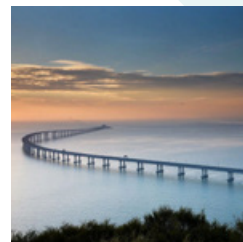
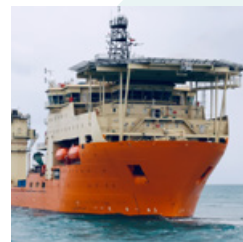
*(in the order of arriving time of leaders)*





## Honors

- Best Project Award of the World for Hong Kong-Zhuhai-Macao Bridge and Port of Mombassa-Nairobi Railway that the Company participated in
- Title of Star-site by MOT for Shanghai Yangshan Phase IV Automatic Terminal that the Company participated in
- Single Manufacturing Championship by the Ministry of Industry and Information Technology
- 1<sup>st</sup> prize for Management Innovation Achievement of the State-level Corporation
- Quality and Technical Award by China Association for Quality
- Award for China Brand Innovation Achievement
- Quality and Technical Award by China Association for Quality
- Certification of "Shanghai Brand"
- 1<sup>st</sup> prize for Shanghai Science and Technical Improvement
- Award for Shanghai Key Product Quality
- Shanghai Quality Technical Award
- Special Award for Social Responsibility and Science and Technological Innovation of Shanghai Corporation
- Top 100 Corporations of Shanghai
- Leading corporation of independent innovation
- Annual top 10 transformation pioneers of 2018T-TDGE Awards by TMT Post



## Key projects

### Yangshan Phase IV Automatic Terminal

The Terminal was constructed by SIPG and ZPMC jointly with the predicted handling capacity of 630TEU, the largest single automatic terminal in the world and the brand project of "Made in Shanghai" .

ZPMC provided the wholly automatic equipment for Yangshan Phase IV, of which the dual-container automatic RMGs were put into the global market for the first time. The edging-cut technology in the world was used on the self-guided carriers. The Terminal is the only one with "China chips" in China, of which the software system consisting of TOS system by SIPG and ECS by ZPMC works as the "Brain" and "Heart" of the whole terminal.

The completion and operation of the Project shows the upgrading and major reform in the operation mode and technology of the ports in China, providing the new force for the Port of Shanghai to maintain the top cargo handling capacity in the world and the leading global shipping center.

*Remarks: The automatic intelligent terminal by ZPMC is popular in the world with efforts of countless participants. The young talents of ZPMC will create more wonders on intelligent terminals of the world.*

--- People's Daily June 12<sup>th</sup>, 2018





**New unmanned straddle carrier ZPMC AI-Strad**

ZPMC developed the new unmanned straddle carrier, ZPMC AI-Strad, in 2018, which was equipped with the latest-designed hybrid power meeting EU IV emission standards and could be upgraded to higher EU V emission standard, if necessary. The power of the diesel engine reduced from 350KW to 150KW after using the hybrid power and each equipment could consume only 10L/h (20L/h for diesel engine) on average, making sure low emission, noise and energy consumption as well as high fuel efficiency. ZPMC initialized the unmanned driving system for the port equipment in the world, making sure the unmanned driving of vehicles. ZPMC AI-Strad on the basis of artificial intelligence can operate automatically in all weathers, sites and the whole flow in the future.



*Remarks: ZPMC promotes a new intelligent container truck solution, a brand new automatic horizontal transportation solution with the least cost and impact for the automatic and intelligent upgrading of ports.*

---China Water Transport, Nov 12<sup>th</sup>, 2018



*Remarks: Tiankun, a 6,600KW self-propelled cutter suction dredger by your company was delivered successfully after much efforts of leaders of different departments and all members of the project team, wining the high recognition from the whole dredging industry. The dredger won the title of the important equipment of the power with application of various high and new techniques. China Classification Society (CCS) participated into the certification and all members of the project group felt proud. We' d like to express our sincere appreciation and respect to peers of ZPMC.*

--- Letter of thanks to ZPMC from CCS  
Tiankun Project Group

*Remarks: It took as much as 8 years for the development and manufacturing of Tiankun from very beginning, leading in the world as an important dredging equipment. ZPMC, adhering to the spirit of craftsman of great power, solved much difficulty in the manufacturing, making sure index of Tiankun meeting the requirements of the technical specifications. Some parameters of dredging equipment, technology of vessel structure manufacturing, accuracy control, welding and shaping are well above the industrial standards.*

--- Letter of thanks to ZPMC from CCCC Tianjin Dredging Co., Ltd. Tiankun Manufacturing Group

**Tiankun, a cutter suction dredger with top capacity in Asia**

Tiankun, a heavy self--propelled cutter suction dredger with the cutter of 6,600KW, by ZPMC, is the first such dredger with the full intellectual property on the design and manufacturing in China. It is one of top 10 ships in the world and considered as the island maker and map editor and one of 10 pieces of key important equipment of China, together with the giant aircraft and aircraft carrier. Tiankun is developed and manufactured independently in China, with the cutter capacity at the top in Asia and leading technology and complicated structure of the same vessels in the world. It fills the blanks in China with various leading processes and technology in the world, including the upper structure pneumatic damping system construction principle and process, crane structure system construction and movement process as well as 3-rope positioning system installation process.

Tiankun was manufactured on March 28<sup>th</sup>, 2016, launched on Nov 3rd, 2017 and delivered on Sep 26<sup>th</sup>, 2018 after the trial voyage starting on June 8<sup>th</sup>, 2018.



**Longyuan Zhenhua No. 3, largest wind power installation platform in the world**

The Platform, delivered on May 18<sup>th</sup>, 2018, is the largest self-lifting wind power installation platform developed independently by ZPMC. The Platform is the offshore giant in the field of offshore wind power at present with integrated functions of lifting large equipment, piling and installation, which has the lifting capacity of 2,000t with more than 10 innovative techniques adopted on it.

The DPI system on the Platform can make sure the Platform moving itself within the wind power plant with accurate and effective positioning without the assistance of the positioning windlass, improving the work efficiency greatly. The 2,000t wholly-swing crane can lift the offshore wind power foundation of 8MW and turn the foundation in the air without the pile turner. The Platform has the life quarter for 108 people and loading area of 3,000m2, providing the living and working space on the sea for the construction team.

Remarks: ZPMC is the globally famous equipment manufacturer for its strong technical development capacity and mature construction experience and most importantly a diligent and devoted project team. We'd like to express appreciation to your project team and members of 2,000t Quality Assurance Department, who we have been working together with. We are deeply impressed with their devotion and hard work in the project.

--- Letter of thanks to ZPMC from CCS Longyuan Zhenhua No. 3 Project Group



Remarks: Fuzhou expands the cooperation with ZPMC in more scopes and wider fields on the present basis, greatly promoting Fuzhou implementing the strategy of rural revitalization with stronger marine economy.

--- Yan Keshi Deputy-mayor of Fuzhou

**Zhenbao No. 1, far and deep sea abalone cultivation platform**

Zhenbao No. 1, the far and deep sea abalone cultivation platform developed independently by ZPMC was put into operation in Lianjiang County, Fuzhou in October, 2018, indicating the abalone cultivation transforming from traditional manual lifting mode to mechanical lifting mode.

The abalone cultivation in Lianjiang is developing to the far sea at present, requiring new cultivation equipment urgently. ZPMC, taking the opportunity to meet civil requirements, developed the abalone cultivation platform Zhenbao No. 1 independently, expanding the cultivation area from 200m to 3km away from the coastline. It was predicted to produce the abalone of 12t on each platform every year. The monitoring system was established with the intelligent and data restructuring for the real time monitoring on the parameters of abalone cultivation and adjacent conditions, changing the present conditions of the abalone cultivation without the fishery insurance. Besides, ZPMC also introduced the wind generating system to provide the environment-friendly power for the abalone cultivation.





Remarks: The 35<sup>th</sup> Antarctic Scientific Expedition Team left the port of Shanghai on Nov 2<sup>nd</sup>, 2018 and arrived at the Antarctic successfully after passing the scorching equator, violent westerlies and complicated ice route, for which the strong support and help of your company are inseparable. We shall, under the guidance of the spirit of the 19th National Congress of the Party, make scientific learning, utilization and protection on the Antarctic, contributing to the development of the marine power.

--- Congratulatory message on New Year's Day of 2019 to ZPMC from 35<sup>th</sup> Antarctic Scientific Expedition Team

### Developing sledges for Antarctic Scientific Expedition

ZPMC completed the project of 16 sledges for Antarctic Scientific Expedition in October, 2018, indicating ZPMC expanding the business to the new field of polar scientific expedition.

The Antarctic area had the deep development potential and strategic significance, requiring more and more transportation equipment as the result of increasing inland investigation in the Antarctic. ZPMC took the opportunity of the development and delivered the first batch of sledges successfully in October, 2018, of which the large sledges and flexible tank sledges were the new snow transportation equipment developed independently by ZPMC, filling in the blank of such products in China.

ZPMC will continue the related technical R&D for the construction of Antarctic, together with the Polar Research Institute of China in future, contributing to the protection, reasonable development and utilization of resources of the Antarctic as well as China's development into a polar construction power.

### ZPMC's records

- PSA international terminal project delivery ahead of time without any correction
- Unmanned straddle carrier initialized in the world
- New RTG development leading in the world
- Largest self-lifting rubble leveling platform in the world
- Closure of Hainan Puqian Bridge, the first crossing the seismic fault in China
- First entry of semi-submersible vessels into EU market
- Winning contract of first EPC offshore wind power project in China
- Initial 3D technology to solve the problem of offshore wind power construction in the world
- Delivering Longyuan Zhenhua No. 3, largest wind power installation platform in the world
- Largest hydraulic pile hammer in the world
- Shipping largest tension windlass in China
- Completion of TBM driving system with largest power in China
- Initial far and deep sea abalone cultivation platform in China
- Largest vertical bus parking garage in the world





## Part 2

# Social responsibility management

ZPMC is developing the business, facing challenges and taking opportunities with interested parties and contributing to the sustainable development of China.

## Social responsibility management

ZPMC is carrying out the 13th Five-Year-Plan Enterprise Culture Construction Plan, making the top design on the social responsibility management and promoting the integration of social responsibility into the routine management. The Company is perfecting the organization structure, improving the management system, providing the training of different levels and improving the awareness of the staff, thus, making overall improvement on the management and implementation of social responsibility.

### Ideas of social responsibility

The ideas of social responsibility, as an important part of the management ideas, have been integrated into the governance, different systems and value chains of the Company. ZPMC will form the unique ideas of social responsibility to improve the quality of products, make scientific and technical innovation, maintain the rights and interests of the staff, improve the utilization efficiency of the energy and solve the key environment challenges.

### ZPMC's ideas of social responsibility

To create wealth for society ---- **Responsibility for society**

To provide products of high quality for customers ---- **Responsibility for customers**

To create benefits for shareholders ---- **Responsibility for shareholders**

To create a happy life for the staff ---- **Responsibility for the staff**

ZPMC has published Social Responsibility Report for consecutive 11 years since 2009 in print, electronic version and H5, to make communication with interested parties on the core subjects of social responsibility.

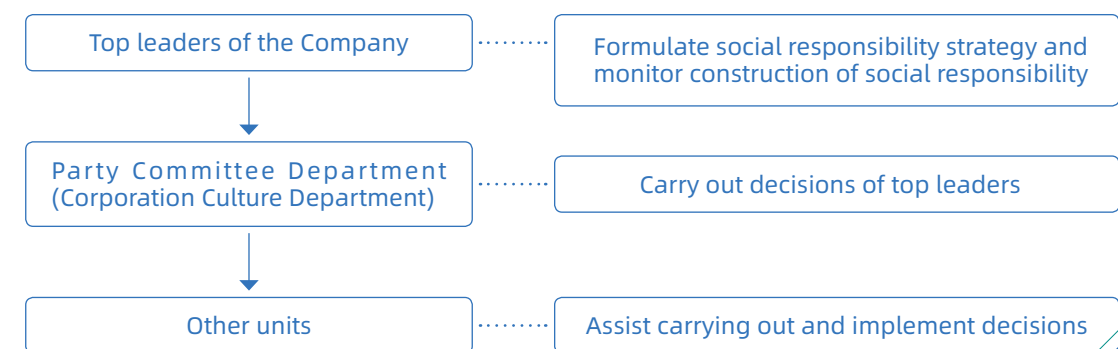
### Analysis on substantive issues

The substantive issues management can help us to identify the fields to improve, thus, improving the construction of social responsibility. ZPMC makes clear various substantive issues firstly, including issues impacting the business operation and those under concern of interested parties. ZPMC, after communication with interested parties, makes analysis on all issues and ranking in the order of importance.

### System of social responsibility management

ZPMC makes effective management in the organization structure of 6 centers and 6+N groups. We are focusing on improving the awareness of the staff on social responsibility, organizing appointed persons for social responsibility training and promoting the staff carrying out such ideas in the routine work.

#### ZPMC's system of social responsibility management



## Focus

### ZPMC first appearance at China Industry Enterprise Social Responsibility Report Issuing Conference

ZPMC was present at 2018 China Industry Enterprise Social Responsibility Report Issuing Conference with the theme of improving China manufacturing innovatively to fight against the global challenges effectively on June 28<sup>th</sup>, 2018, which was presided by Xiongmeng, Executive Vice-chairman and Secretary-general of China Federation of Industrial Economics. The Conference has been held for 10 years since 2009. ZPMC attended the Conference of the state level for the first time in 2018 after preparing the annual report for consecutive 10 years. Rong Jianying, Executive Vice-chairman of China Federation of Industrial Economics awarded the certificate to ZPMC on the Conference.



ZPMC first appearance at China Industry Enterprise Social Responsibility Report Issuing Conference.



Participation of interested parties

ZPMC, a large state-owned enterprise, has been focusing on the communication with interested parties, receiving requirements from related parties through effective modes, improving decisions and deciding the main direction of business development and social responsibility on such basis.

Communication modes between ZPMC and interested parties

Interested party	Communication mode and content
 Customers	<p>Sending latest messages of the Company on website and Wechat in time; Top leaders' regular visiting customers to obtain suggestions on the development of the Company; Issuing the annual report and social responsibility report regularly to spread messages of the Company; Attending exhibitions and holding large activities to show the strength and development achievements of the Company.</p>
 Partners	<p>Developing multi-purpose business platform --- Terminexus to exchange information in time; Issuing the annual report and social responsibility report regularly to spread messages of the Company; Sending latest messages of the Company on website and Wechat in time; Attending important industrial forums regularly to share the development achievements; Completing the supply chain.</p>
 Government	<p>Sending latest messages of the Company on website and Wechat in time; Receiving various surveys from different sectors of the government and signing the cooperation memorandum.</p>
 Staff	<p>Holding department meetings regularly for internal communication and exchange; Holding the general meeting of representatives of the staff each year with group discussion to collect opinions of representatives on the production, operation, governance and cultural construction of the Company; Publishing minutes of important work meetings on OA system in time, providing latest messages to the staff; Perfecting feedback mechanism with suggestion boxes at appointed positions to collect the staff's ideas; Responsibility departments making regular surveys on different issues to the bottom level to collect ideas and preparing the survey report; Equipping special telephones and suggestion boxes at offices of Labor Union and Discipline Inspection Commission to collect various suggestions from the staff in time.</p>
 Education institute	<p>Promoting the industry-university-research cooperation; Receiving surveys of universities and scholars; Founding the experiment bases with universities.</p>
 Community	<p>Holding various cultural and sport activities with the community; Organizing public activities in the community; Inviting the representatives from the community to the Company for their suggestions on the Company.</p>
 Public and media	<p>Perfecting the information disclosure mechanism for regular disclosure of related information; Perfecting the information issuing platforms of the Company; Perfecting related systems to receive social media; Perfecting public opinion handling mechanism.</p>

Focus

Smart Terminal Soutlion

2018 Terminal Intelligent Solution Forum was held by ZPMC in Bangkok Thailand on Nov 7th, 2018 and 200 people from 80 terminal operators in the world were present at the Forum. ZPMC listened to the expectations on the Company from interested parties during the Forum and made exchange with partners on the AI terminal solution for the development of ports in the future.



ZPMC promoting new techniques at 2018 Terminal Intelligent Solution Forum.

We predict that the AI will enable each field of ports as a new engine to promote the global smart port construction. For such purpose, ZPMC will, together with related parties, provide Zhenhua Solution and industrial intelligence for the problems in the development of the global terminals with new techniques of Internet of Things, big data, cloud platform and AI.

Flag of national industry  
ZPMC entering forum of Tsinghua University

Zhu Lianyu, Party Secretary and Chairman of ZPMC and Guan Tongxian, Founder and previous President of ZPMC, were invited to Tsinghua University as the guest speakers of China Business Leaders- Tsinghua Forum on March 1<sup>st</sup>, 2018, where they talked about the development, summarized and shared successful experience of the Company. The Forum is a high-end one held jointly by Tsinghua University and Oversea Chinese Affairs Office of the State Council, which is the 12<sup>th</sup> in the past 10 years of founding and the first to invite the persons in charge of state-owned enterprise for speech.

Guan Tongxian, previous President of ZPMC, sharing startup experience with students and teachers of Tsinghua University.



ZPMC in China Business Leaders · Tsinghua Forum.





## Chapter 2

# ZPMC in action

Journey of a thousand miles starts with a single step. We have been working for customers' products of high quality, shareholders' benefits, staff's values and harmonious society.



## Part 1

# Innovative development

The development depends on talents and the spirit of innovation. ZPMC believes each slight innovative idea can be the supporting point to change the world.

## Innovation system

The perfect innovation system can promote the development of innovative work. ZPMC has been promoting the innovative work with innovation organization and technician training.

### Innovation organization

ZPMC Institute, as a core of scientific and technical innovation, makes integration of scientific resources of the Company on the basis of the development and market requirements for the central target of developing into the leading corporation with international competence in the world. It is leading in the scientific and technical innovation development of the Company.

ZPMC's institutes	Onshore Institute
	Offshore Institute
	Electrical Institute
	Innovation Process Institute
	Marine Engineering Services Institute
	International Group Institute
	Smart Group Institute

### New scientific projects in 2018

Subject	Type	Department in charge
Port Outside Trackless Navigation Heavy Load AGV system and Application		Science and Technology Department
Study and Test of Port Container Crane Remote Fault Mode Identification and Predictive Maintenance Standards		Industry and Information Department
R&D and Application Model of Large Port Machinery Main Structure Intelligent Painting System	Key project	Science and Technology Commission of Shanghai
Development of Automatic Container Terminal Intelligent Simulation Decision Key Technology and Capacity Platform	Key project	Science Commission of Shanghai
Study on Base Offshore Wind Power Installation Platform Key Technology	Key project	Science Commission of Shanghai
Lifting Equipment Remote Monitoring System Solution	Special project on general integration and contracting	Shanghai Economy and Information Commission
9,300t Space Launch Movable Platform Key Techniques and Instrument Development	Key project	CCCC
Self-driving Unmanned Container Straddle Carrier and Fleet System	Key project	CCCC
Development and Application of Smart Port Simulation Platform	Key project	CCCC

ZPMC Institute strengthened the research and development by providing major support for projects with strategic, edge-cutting and overall important and key techniques as well as applied for key projects of the national and provincial levels in 2018.



ZPMC receiving Science and Technology Award by Shanghai Government.

ZPMC won Shanghai Science and Technology Award in 2018.

### Technician training

ZPMC has been adhering to the strategy of talent-driving innovation, establishing the high-end talent training mechanism and commending advanced individuals and teams, thus, inspiring the motivation and creation of scientific workers and making use of the support and leading role of scientific and technical innovation. The Company provided the key members training and skill improvement in 2018 to assist the staff to be experts in the field.

## Focus

## Establishing talent tank and academician workstation

ZPMC talent tank and academician workstation were founded in December, 2018 and Lin Zhongqin, academician of Chinese Academy of Engineering and Chu Junhao, academician of Chinese Academy of Sciences as well as famous experts and scholars, including Tan Jianfeng, Wang Feiyue, Fan Deshang, Lu Hongjun, Zhao Zhanbo and Tan Debin attended the opening ceremony and the forum. ZPMC will attract more industrial experts and leading talents and establish the industry-university-research cooperation with the help of various experts. Academicians, experts and attendants on the Forum shared on network security, informatization, intelligent technology, talent introduction, big data and innovative business mode.



Opening ceremony of ZPMC Talent Tank, Academicians and Experts Forum.





ZPMC Science and Technology Month.

### Innovation culture

ZPMC has been focusing on the innovation culture. The Company held a series of activities in Science and Technology Month with the theme of science and innovation for promising future in November 2018, including electing technical model and giving science management outstanding achievement award, holding scientific and technical forum and other exchange and training with unique characteristics as well as innovation system reform. It showed quantities of scientific and technical innovation achievements and promoted the science spirit and idea of scientific and technical innovation.



ZPMC's young inventors receiving awards on the youth forum.

### Assessment on "Five-littles" innovation achievements by the young

ZPMC made assessment on the young's innovation achievements on little invention, reform, restructuring, design and suggestion in the design, production, operation, management and services. The expert team of the Company selected 3 gold awards, 6 silver awards and 11 bronze awards from 52 applied projects after assessment and provided prizes to them in 2018.

### 2<sup>nd</sup> Youth Challenge Cup by ZPMC

ZPMC Labor Union and League Committee held the 2<sup>nd</sup> Youth Challenge Cup road show finals of 10 innovation projects in January 2018. STS QR Code Management System of Electrical Division of Onshore Institute and other 4 projects won the gold key award while RTG Electrical Room Enclosing Shed Manufacturing Flow and Process Optimization by Process Department of Project Control Center and Shanghai Port Machinery Heavy Industry of Smart Group and other 4 projects won the silver key award. The projects winning the gold key award will get the capital support from the Labor Union of the Company.

The projects in the first Youth Challenge Cup has obtained rich achievements after 1-year operation, including 3 invention patents, 3 utility model patents, 2 research theses and 1 set of software.



ZPMC young staff explaining his innovation project on the site of Challenge Cup.

### Innovation exchange with Sino-German Intelligence Doctoral Institute

The experts of Sino-Germany Intelligence Doctoral Institute came to the Company for innovation exchange on Nov 20<sup>th</sup>, 2018. The experts visited the intelligent manufacturing production lines and production shorelines of Changxing Base, learning about the development of intelligent manufacturing. Academician Kuhn expressed that the layout of ZPMC was fit for the development of modern research and ZPMC might require more teams and experts for the development, for which the Institute could provide support. Fang Dianjun, the Dean of the Institute made further explanations on the four core ideas of the Institute. ZPMC hoped to have opportunity of academic exchange with the Institute and more opportunities for technical cooperation.

### Innovation platform

ZPMC has been encouraging the innovation within the Company, providing support, assurance and stimulation for excellent self-management innovation teams. To make sure the successful incubation of innovation projects, ZPMC founded the expert tank of 59 experts of and beyond the Company for the first term to provide the guidance on the technology, operation and investment for the innovation teams. The external investment funds and exchange with financing institutions provided rich external capital for the innovation projects to plan the future capital operation assess in advance. Twenty innovation projects have been recorded in the Company in 2018.



ZPMC innovation platform experts assessment.



Industry-university-research cooperation

The Company, deciding the development of the industry-university-research cooperation, has made close cooperation with the governmental sectors, universities, science institutes and accessory suppliers in undertaking and leading key science research projects of the state and municipal levels, developing into the industry-university-research strategic alliances for collaborative utilization of property rights.

ZPMC's some science and technology development and cooperation alliances

University	Shanghai Jiaotong University
	Tongji University
	Shanghai Maritime University
	Shanghai University
	Zhejiang University
	Harbin University of Science and Technology
	Wuhan University of Technology
Institute	Jiangsu University of Science and Technology
	China Ship Scientific Research Center
	SDARI
Foreign company	Shanghai Ship and Shipping Research Institute
	US Lifteck
	US Mc kay

Focus

Establishing port machinery special gear shaft fine processing intelligent production line joint with Tongji University



Port machinery special gear shaft fine processing intelligent production line by ZPMC and Tongji University jointly.

The project was the industry-university-research project jointly by ZPMC and Tongji University to meet the requirements on different types and variable batch quantity of gear shaft in the market. It was the deep integration of the automation system and information system of the Company and upgrading to the intelligent processing of the gear shaft. The port machinery hot rear gear shaft fine processing intelligent production line of the project was intended for improving the system integration development capacity on the port machinery intelligent production line, making foundation for ZPMC 4.0 Plan.

Part 2

Coordinative development

The coordination makes sure the sustainable development. However, there is much unbalance and insufficient development at different regions, between town and countryside, economy and society, material and spiritual civilization in China at present. ZPMC has been providing the support for coordinative development on the basis of the heavy equipment.

Regional coordinative development

ZPMC, focusing on key regions of Beijing-Tianjin-Hebei, Xiong'an New District, Guangdong-Hong Kong-Macao Greater Bay Area, Changjiang River Delta and west coast of Taiwan Strait, supports the regional coordinative development with the heavy equipment, obtaining sound achievements in the regional development.

In 2018, ZPMC signed the strategic cooperation agreement with Fuzhou government for overall and deep cooperation on CCCC port, CCCC Industrial Park, rail traffic infrastructures and urban public facilities. The 30-minute life circle of Guangdong, Hong Kong and Macao is around the corner with the Hong Kong-Zhuhai-Macao Bridge opening to the traffic. The Company constructed Shanghai Yangshan Phase IV and Port of Zhoushan in Ningbo, promoting the economic development of Changjiang River Delta.

ZPMC and Maritime Fuzhou

ZPMC attended 21<sup>st</sup> Century Maritime Silk Road and 20<sup>th</sup> Cross-Strait Fair for Economy and Trade on May 18<sup>th</sup>, 2018 and signed the strategic cooperation agreement on maritime economy with Fuzhou government. ZPMC will introduce the core technology and R&D strength of maritime equipment on the basis of comprehensive capacity of design, manufacturing, transportation and after-sales services, promoting the development of the maritime economy, winning the high praise and appreciation from the government of Fuzhou.

Maritime Fuzhou is the strategic decision made by Xi Jinping, General Secretary, which is not only vitally important for the economic development in Fuzhou but for expanding opening-up and union of the Country as well. ZPMC and Fuzhou government will promote the rapid development of the local economy on the basis of respective advantages.

Remarks: Fuzhou has been developing the harbor industry, offshore fishing and mari-culture with sound development prospect and wide space. ZPMC, as the leading company in the maritime equipment manufacturing in China, has rich technical strength and advanced management. We hope that both parties can make win-win cooperation in the deep sea cultivation, equipment manufacturing, offshore security, digital economy and integration development on the basis of respective advantages.

--- Wangning Vice-secretary of Fujian Province



## Focus

# ZPMC in Hong Kong-Zhuhai-Macao Bridge

The Hong Kong-Zhuhai-Macao Bridge was open to traffic in October 2018, which is the longest bridge with largest scale, highest standards and most advanced technology. ZPMC started to participate into the construction of such super project in 2011, supporting the century project open to traffic with strong science equipment and excellent process.

ZPMC in Hong Kong-Zhuhai-Macao Bridge.

## Steel cylinder manufacturing and transportation

ZPMC manufactured all of 120 large steel cylinders for the east and west man-made islands of Hong Kong-Zhuhai-Macao Bridge, weighing 28,658t totally. The steel cylinders were shipped for 26,000km by ZPMC.



Steel cylinders for Hong Kong-Zhuhai-Macao Bridge shipped from terminal of ZPMC Changxing Base.



Zhenfu No. 8 of ZPMC lifting steel cylinders.

## Vibration sinking of steel cylinders

ZPMC completed the vibration sinking of 61 steel cylinders at the west man-made island within as short as 4 months after the cylinders arriving at the site. Zhenfu No. 8 set the historical records of 2 cylinders/day and 3 cylinders/day of the operation in Yangtze River.

## Manufacturing special engineering vessels

To make sure successful construction of the immersed tube tunnel of Hong Kong-Zhuhai-Macao Bridge, ZPMC manufactured the rubble leveling barge Jinping No. 1 and tube section laying barges Jin'an No. 2 and No. 3, leading in the world, on the basis of actual conditions of the Project.



12,000t floating crane Zhenhua No. 30 lifting final joints.

## Immersed tube tunnel desilter

The silting on the foundation excavation in the operation of the tunnel caused the tube section failing to sink. ZPMC designed the desilter within as short as 20 days, solving the global problem in the desilting field.

## First taper dimming cover in China

ZPMC designed and manufactured the first taper dimming cover in China, a landscape of Hong Kong-Zhuhai-Macao Bridge, which can reduce the drivers' discomfort effectively when entering or leaving the tunnel.

Jinping No. 1, rubble leveling barge by ZPMC in operation.



## Lifting and welding of final joints

Zhenhua No. 30, 12,000t self-propelled wholly-swing floating crane by ZPMC, the largest in the world, completed lifting the final joints of undersea tunnel of Hong Kong-Zhuhai-Macao Bridge. The welding team of ZPMC completed welding the double layers on both sides after the joints were placed in the position.

## Tunnel fitting out

The fitting-out team of ZPMC manufactured the end steel shell for each tube section, making sure no water leakage in the deep sea and shortening the fitting-out time from 90 days to 35 days.



减光罩正在吊装。





Intelligent paving robot by ZPMC for Xiong'an New District.

## Promoting construction of Xiong'an New District with intelligent equipment

Xiong'an New district is a newly-founded district of the state level, requiring quite a lot of temporary roads and sites. It will take a long time at a high cost to pave and disassemble such roads and sites, which is not environment friendly. Therefore, ZPMC organized the research and manufacturing of automatic assembled road paving robot.

ZPMC can expand the business of the Company by taking the opportunity of the state strategy on the development of Xiong'an New District. The development and application of the paving robot can bring about huge economic overflow effect and change of infrastructure concept to meet the requirements on energy saving, environment protection, green intelligence of Xiong'an with practical action and effect. It will provide environment friendly, detachable and temporary roads for the construction of new districts in different cities, solving problems of time and material waste as well as environment pollution arising out of road digging, asphalt pouring and concrete construction.

## Coordinative development of upstream and downstream companies

The sustainable development is the strategic target of a company and the company should also focus on the partners' important influence on the strategic target. ZPMC keeps close attention on the compliance and sustainability of the supply chain, promoting the innovative development of the supply chain.

### Management on suppliers

ZPMC has perfect material assessment and management system with the Material Purchasing Department as the leader and support from different departments. The Company formulates the red-yellow card system and the black list of suppliers to decide the list of suppliers needing key concern, to identify risks and to assist the suppliers for improvement and correction. ZPMC focuses on the influence of the purchasing quantity, batches and delivery punctuality on the supply chain, making the general assessment on the performance of suppliers in the past year with the effective achievement assessment system. ZPMC made assessment on 915 suppliers on the basis of the abovementioned standards and provided targeted improvement and correction suggestions in 2018.

### ZPMC's suppliers achievement assessment standards

Assessment department	Type of assessment	Items of assessment
Technical department	Technology	Order technical response
		Material compliance
		Technical support
Project Management Department	Production	Installation and debugging
		Supply and operation schedule
		Services
Quality, Environment and Safety Control Department	QHSE	Level of quality
		Services
		Certificates and documents
		HSE effect
		Trade safety
Products and Services Department	Quality service	Conditions of products
		Services
Material Purchasing Department	Procurement	Technical clarifications
		Price
		Contract
		Delivery period
		Quality
		Service improvement



### Supply chain financial service platform

ZPMC, making positive response to the state policy to support small and medium enterprises, worked together with ICBC, China Bohai Bank and CCCC Xingyu Technology Co., Ltd. for the supply chain financial service platform to solve financing difficulty, high costs, troublesome procedures and much time in traditional financial industry. The Company provides assistance to suppliers for accounts receivable and assets, improves the cash flow efficiency and supports the suppliers for much growth and mutual development with ZPMC.

28 units had completed the financing registration with the assistance of the industry chain data provided by ZPMC in 2018, with financing amount of 72million on the supply chain financing platform, an important breakthrough for signing banks' financing on the platform.

### Coordinative development of material and spiritual civilization

ZPMC has been focusing on the coordinative development of material and spiritual civilization, practicing the socialist core values and improving ethics, sense of state, law and social responsibility and spirit of science and traditional virtues of China.

#### Practicing socialist core values

ZPMC has been practicing the socialist core values to train the staff of confidence, virtues, devotion, action and ambition.



ZPMC's staff visiting Road of Innovation Exhibition by Bao Qifan.

Youth Learning by ZPMC.



#### Theme education

ZPMC held various theme education activities to practice the socialist core values in routine work in 2018. The Company participated into the selection of the National Model Worker and Model of Central Enterprises positively and held a serial of speeches on Backbone of Power and the activity to learn from Zhang Liming, Model of the Times, making a positive atmosphere.

## Focus

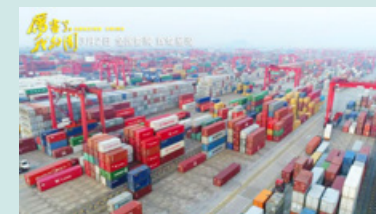
### Amazing China and amazing ZPMC

The large documentary Amazing China was shown in various large theatres around China in March, 2018. Many super projects with participation of ZPMC were shown in the film. ZPMC organized the Party members to watch the film and held a serial of study activities to promote the staff work with the new mission.



Members of a branch of ZPMC Party Committee watching film Amazing China.

#### ZPMC in Amazing China



Shanghai Yangshan Phase IV Automatic Terminal, largest single automatic and intelligent terminal of highest automation level in the world, was designed and constructed by CCCC, for which ZPMC provided all terminal equipment and equipment control system (ECS).



12,000t wholly-swing floating crane, the largest in the world by ZPMC, is working for the construction of Hong Kong-Zhuhai-Macao Bridge, largest sea-crossing bridge in the world, and the final closure of the island and tunnel.



The space launching platform turning instrument by ZPMC played an important part in transferring the rocket before launching.

#### ZPMC's staff remarks after watching film

*Amazing China! In the film, pictures, important equipment and stories bring back my mind such an unforgettable period on Yangtze River.*

--- ZPMC Weijie

*I'm impressed deeply with Zhenhua No. 30 appearing after national flags at the beginning of the film, which is the core equipment for the construction of island and tunnel of Hong Kong-Zhuhai-Macao Bridge. We adopted all core equipment and appointed top welders for such project, making sure the prefect completion of the project. I have the pride beyond any words from my deep heart while watching the film for I'm one of them.*

--- ZPMC Zhangjie



## Focus



Young staff recording audio book ZPMC FM.

### Liangjiahe Village on New Media

Wechat and Internet are popular among the present young people. ZPMC created a new column ZPMC FM on the official Wechat platform in 2018, the first time to promote the study on socialist core values in the mode of Wechat push+audio books.

ZPMC FM was recorded by ZPMC Party Committee Department (Corporation Culture Department) with the staff volunteers for reading. The first program was made about Liangjiahe Village. The audio books were all read and recorded by the staff. In the reading, the staff could learn about the experience of Xi Jinping, General Secretary, in Liangjiahe and the spirit of struggling ahead with hard work.

### Promoting civilization

ZPMC has been focusing on the civilization and strengthening the sense of civilization with serial activities. The Company held the activity of civilized production month and organized the assessment team to select the civilized production model shift and team. The Company also provided the training on business etiquette to improve the business reception capacity of the staff. The Company awarded the titles of Women Pace-setter, Ethic Model, Model Worker and May 1st Medal to excellent individuals. The Company also held the activities with the theme of standing in queue as a habit, encouraging the staff take elevator in order.



ZPMC volunteers showing staff to take elevator in order.

## Focus



ZPMC volunteers suggesting pedestrians following traffic rules.

### ZPMC and traffic civilization

ZPMC organized 20 volunteers to participate in the activity of Traffic Week to remind the drivers driving against traffic, the pedestrians walking beyond the sidewalk or disobeying traffic lights, providing assistance to keep the traffic in order.





## Traditional culture of China

To promote the valuable traditional culture of China, ZPMC encourages the staff to read classic books and learn about traditional arts. The Company always holds different activities to celebrate traditional festivals every year. The Company paid a visit to more than 220 young families during the Spring Festival of 2018 and organized traditional activities, including sharing yuanxiao (sweet dumplings) and lantern riddle solving. The Company also held various activities during the Mid-Autumn Festival.



- 1 . ZPMC holding lantern riddle solving in Lantern Festival.
- 2 . ZPMC providing Yuanxiao for the staff during Lantern Festival.
- 3 . ZPMC' s staff writing couplets.
- 4 . ZPMC' s staff learning traditional art of tea-making.

## Part of works by ZPMC's staff



Paper cutting: Steed by ZPMC Ruan Chanjuan



Painting: Grape Vines by ZPMC Peng Qingfu



Painting: Bamboo by ZPMC Peng Qingfu



Calligraphy: Diligent roosters and loyal dogs promising safe life in strong power by ZPMC Hushuang



Calligraphy: Creating quality projects with craftsman spirit by ZPMC Maozhi



Painting: Fruits by ZPMC Peng Qingfu



## Focus

### My ZPMC and My Dream lecture in Chung Yeung Festival



ZPMC held a lecture of My ZPMC and My Dream in Chung Yeung Festival in 2018, inviting Guan Tongxian, founding president aged 85, to share the development experience of the Company. Guan thought that ZPMC developed from a little company into a famous one in the world as a result of the good development conditions in the market and efforts of the Company. The Company has been contributing to the development of China and the world with advantages of talents, technology and shipping.

In the speech, Guan advised the young staff to keep study and work hard at the valuable prime time for the development of the Company and the individual growth as well. Guan also exchanged ideas with the audience and accepted the gifts for Chung Yeung Festival by the Company.

### Colorful life of staff

ZPMC has the library, reading room and sport room for the staff working hard to enjoy the life.

The Company encourages the staff to read books at free time and provides good reading facilities, including the staff electronic reading room with reading times of 113,895. ZPMC held more than 10 activities of ZPMC Youth Reading Conference, with over 500 people participating for exchange in 2018.



ZPMC Youth Reading Conference.

ZPMC held various activities for the staff to enjoy the life: including organizing 35 young representatives to attend the large exhibition with the theme of leading in the development in memory of 40 anniversaries of reform and opening up in Shanghai to learn about the strength of Shanghai manufacturing, orienteering, Heli Cup swimming race, Huoli Cup basketball, badminton and table tennis match, staff sports meeting, founding ZPMC ROBOTICS LAB, POWER DANCE, Originality Handcraft Club and ZPMC Parkour. All these activities provided opportunities for the staff to show their talents in hobbies.

### Staff in activities



1 . ZPMC Ivli Cup Tag-of-War.

2 . 3<sup>rd</sup> ZPMC Youth Forum.

3 . 3<sup>rd</sup> ZPMC Youth Forum.





1 . Flower arranging by ZPMC Originality Handcraft Club.

2 . ZPMC Youth Riding Race.

3 . ZPMC young staff sharing on Youth Open Class.

## 4<sup>th</sup> ZPMC Youth English Show

The final competition of the 4th ZPMC Youth English Show was held in the headquarters of the Company on Oct 10th, 2018, present at which were 11 players winning in the primary competition.

The Competition consists of the speech, answering questions of judges and answering random questions, to test the players' capacity to express in English, to make business promotion as well as professional knowledge and flexibility. The Company is intended to encourage the staff work hard with open mind and improve English as well.



ZPMC Youth English Show.

## Part 3

# Green development

With the increasing development of science and technology, the environment protection has been the core concern in the human development. ZPMC has been focusing on the innovation in green products, developing each new product with consideration on the environment protection.

## Green products

ZPMC, adhering to the idea of environment protection in the whole life of R&D, manufacturing, delivery and operation maintenance, produces all products meeting the state and industrial requirements on environment protection. Meanwhile, we are keeping innovation in green products, improving the achievements in environment protection jointly with the users.



Green RTG by ZPMC.

## Mechanical optimization of RTGs

RTGs, important to transfer containers in terminals, are widely used in most ports in the world at present, however, causing the environment pollution due to the emission of much tail gas in frequent transferring. ZPMC keeps close attention on the profound impact of the mechanical operation on the environment. ZPMC made optimization on the diesel of RTGs in 2018, replacing the original diesel with the variable-speed diesel, LNG unit or small power diesel unit or commercial power (industrial frequency AC) to provide power for RTGs, making sure the energy saving and emission reduction.

ZPMC adopted the new RTGs in projects of Zhuhai International, Shanghai Yidong, Xiamen Haixiang and Zhanjiang International successfully in 2018. The operation data showed that the average diesel consumption of each new RTG was only 0.374L/TEU, saving by more than 60%.



## Green energy

With serious environment pollution and energy shortage of the globe at present, the alternative of the oil is becoming the top concern. ZPMC starts to consider new energies, including solar energy and wind energy, under such serious conditions.

### Focus

### Development of solar energy

The solar energy is nearly unlimited and the photovoltaic power generation has low emission, no noise and light pollution basically. Therefore, it's an ideal environment friendly and clean energy.

ZPMC invested RMB ¥200 million for the photovoltaic power generation in 2018. The total installed gross capacity of ten investment projects reached as much as 35.86MW and annual average energy output of 34.39millionkwh, equivalent to saving 11,003t standard coal, reducing the emission of Carbon dust of 9,352t, Carbon dioxide of 34,281t, sulfur dioxide of 1,031t and Oxynitride of 516t. The projects are in sound operation, making green power generation continuously and contributing to energy saving and emission reduction as well.



Roof photovoltaic power plant by ZPMC.



Photovoltaic shed by ZPMC.

## Energy saving and emission reduction

To promote the energy saving and emission, ZPMC develops new products to reduce the energy consumption of the equipment. Meanwhile, the Company promotes the energy saving in the offices by appealing the staff to save electricity, water and paper with the idea of energy saving, low carbon and green manufacturing. In the national energy saving promotion week in 2018, the Company held 2018 Energy Saving and Emission Reduction Knowledge Contest on the network platform of CCCC Tune, with 1,626 people participating totally.

### Vessel restructuring to reduce oil consumption

ZPMC owns the leading whole equipment transportation technology and heavy and large equipment offshore deck fleet of the largest scale in the world. However, the energy consumption of such large a fleet can't be ignored. ZPMC equipped the commercial power receivers to Zhenhua No. 31 and 32 of the fleet as a try to save energy and reduce energy consumption in 2018. The high-end marine engineering paint was used for partial transportation vessels to save energy by reducing the traveling resistance. The oil consumption of vessels with high-end marine engineering paint during the voyage at constant speed could be reduced by 20kg each sea mile, totally 1,500t in 2018.

The new voyage courses were selected for partial transportation vessels to save energy in 2018. The vessels of ZPMC traveling to ports at east coastline of America and those of countries near Panama in the Atlantic Ocean usually returned from the Cape of Good Hope. The vessels can return by Panama Canal after the new canal opening to traffic, of which each return voyage can save the oil of 480t, compared with the original course of the Cape of Good Hope.



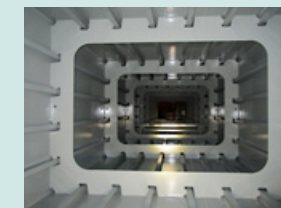
Zhenhua No. 32 with commercial power receiver, loaded with STSs, leaving terminal of Changxing Base.

### We're responsible for air protection

The heavy equipment corporations are facing great pressure of carbon emission reduction for the heavy anti-corrosion paints can cause the air pollution due to quantities of VOCs and PM2.5. To solve such air pollution, ZPMC introduced the water-based painting technology.

The new paint has extremely low emission of VOCs with more than 90% of emission reduction efficiency. Meanwhile, the paint is nontoxic without pungent smells or any risks of explosion and burning. The workers can make painting in the box for a long time with less related PPE, thus, reducing much injury arising out of working in limited space.

In 2018, ZPMC used the water-based environment friendly paints as much as 262,000L on 185 port machineries, 1.6 times as much as that of the whole year of 2017. It reduced VOCs by more than 200,000kg. The products with the environment friendly water-based paints were exported to 37 countries and regions in the world.



Products with water-based paints.



## Pollution control

The human life is in close relation with the environment. ZPMC, as the heavy equipment manufacturer, has been focusing on the environment protection, adhering to the principles of comprehensive control of protection and precaution and bearing responsibility for possible arising damages, will contribute to the sustainable development.

### Control on water pollution

The water is the source of life. ZPMC, constructed along Changjiang River with major products of port machinery, has been focusing on the local water pollution control. In 2018, the Company, on the basis of existing water pollution control facilities, added the waste water outlets and installed the waste water online monitoring system and upgraded the waste water outlet isolation system, reducing the water pressure and outflow of waste water.

### Control on air pollution

The air is closely related with the climate environment on the Earth. With the global warming, ZPMC continues to promote the emission reduction at the source, control in the middle and treatment at the end of the air pollution, thus, making sure emission reduction. The Company newly established and restructured the flow line for structure indoor painting, promoting the end treatment at the painting workshop, thus, improving the treatment efficiency of painting waste gases and reducing the emission.



Painting flow line after restructuring.

### Control on other pollutions

Besides the control on water and air pollution, ZPMC also promoted the control on noise and solid waste pollution. The Company made restructuring on the field trolleys and alarm devices of the equipment, lowering the alarming volume on premise of meeting the safety requirements. The air compressors with large noise were moved into rooms with isolation instrument, reducing the possible noise. The Company also built and restructured temporary storage sites for dangerous wastes, sorting different solid wastes and recycling waste welding slag, paper and steel materials.

## Focus

### ZPMC listed in cases of central enterprises energy saving and emission reduction by SASAC

Shanghai Yangshan Phase IV Automatic Terminal by ZPMC, an environment friendly project, was listed in cases of central enterprises energy saving and emission reduction by SASAC in 2018. The Company promoted Intelligent Port Large Equipment Green Supply Chain Standard System Establishment and Model Application Project Implementation Program by Shanghai Economy and Information Commission to monitor pollutants of benzene series, NO<sub>2</sub> and SO<sub>2</sub> and held special seminars to control the green manufacturing for the green supply chain gradually.

## Part 4

## Opening development

The year of 2018 is 40<sup>th</sup> anniversary of the reform and opening-up. Each change happening in China in the past 40 years proves the necessity of the opening-up and development. ZPMC, as an outward state-owned corporation, has been promoting the cooperation on international capacity and equipment manufacturing, contributing to the new overall opening-up with onshore and offshore integration.

### ZPMC in 40 years of reform and opening up

The history always inspires the people to walk on at particular time. The reform and opening-up started in 1978 while we witnessed great changes in China at the year of 2018. ZPMC has been contributing to the products Made in China in the period of reform and opening-up with the development of national industry in mind since founding.



ZPMC top leaders of Party Committee and carders of middle level watching ceremony of 40<sup>th</sup> anniversary of reform and opening up.



Staff of ZPMC headquarters watching ceremony of 40<sup>th</sup> anniversary of reform and opening up.



## Focus

# ZPMC in 40 years since reform and opening up



1<sup>st</sup> and 1,000<sup>th</sup> STS by ZPMC standing on Port of Vancouver Canada.

## Hello Vancouver

ZPMC was founded in 1992, when the global market of port machinery was under monopoly of corporations of Germany, Korea and Japan and the domestic ports were not willing to adopt the port machinery made in China. However, ZPMC won the first order from Port of Vancouver Canada with excellent quality and responsible attitude. The good reputation of the first delivery brought about more orders from different countries.

The Port of Vancouver signed the contract to purchase the 1,000<sup>th</sup> STS from ZPMC in 2006, who signed the first contract for the 1st STS. The Company, to show deep appreciation, decided to sell the 1,000th STS at the price of that 14 years ago, which was cheaper by \$2million than that at the market.

## Lifting crane breaking records

In 2005, ZPMC with excellent achievements on port machinery expanded to the offshore business. The Company manufactured Huatianlong, a 4,000t lifting crane with the largest lifting capacity in Asia, in 2006, which made great contribution in salvaging the ancient sunken ship of Song Dynasty, Nanhai No. 1.

In 2008, ZPMC manufactured Lanjing, a 7,500t wholly-swing self-propelled lifting crane with the top lifting capacity in Asia at the year, breaking the record by Huatianlong.

ZPMC designed, manufactured and delivered Zhenhua No. 30, the 12,000t wholly-swing self-propelled lifting crane with the top lifting capacity in the world at present, in 2016, breaking another record.



Lanjing in operation.



Zhenhua No. 30, largest floating crane in the world designed and manufactured by ZPMC.



Huatianlong in salvage of ancient sunken ship Nanhai No. 1.

## Dual 40' containers double-trolley STS

ZPMC developed dual 40' container STS independently in 2003, which, compared with the traditional STS, could pick up two containers at one attempt, thus, improving the efficiency by one time. The new STS inspired a trend of upgrading of port equipment in the world.

To meet the rapid unloading requirements of large vessels, ZPMC developed dual 40' double-trolley STS on the basis of dual 40' container STS, improving the average speed to 90-100units/h.



Dual 40' container double trolley STS by ZPMC.

## US San Francisco-Oakland Bay Bridge

The ship loaded with all steel structures by ZPMC for US San Francisco-Oakland Bay Bridge started the voyage from the terminal of ZPMC Changxing Base in 2011, heading for the remote west coastline of USA. Such steel structures would be used on San Francisco-Oakland Bay Bridge, the largest single tower self-anchoring, seismic resistance suspension steel structure bridge. The Bridge was designed with the top difficulty in the world, on which the reports were made after the completion by more than 30 leading media, including New York Times, Associated Press, CNN TV and Xinhua News Agency, People's Daily, CCTV and Phoenix TV.

To express appreciation to ZPMC's outstanding contributions in the Project, San Francisco named July 11<sup>th</sup>, 2011 as Day of Li Jianghua, who was the general commander of the Project.



Francisco-Oakland Bay Bridge with all steel structures provided by ZPMC.

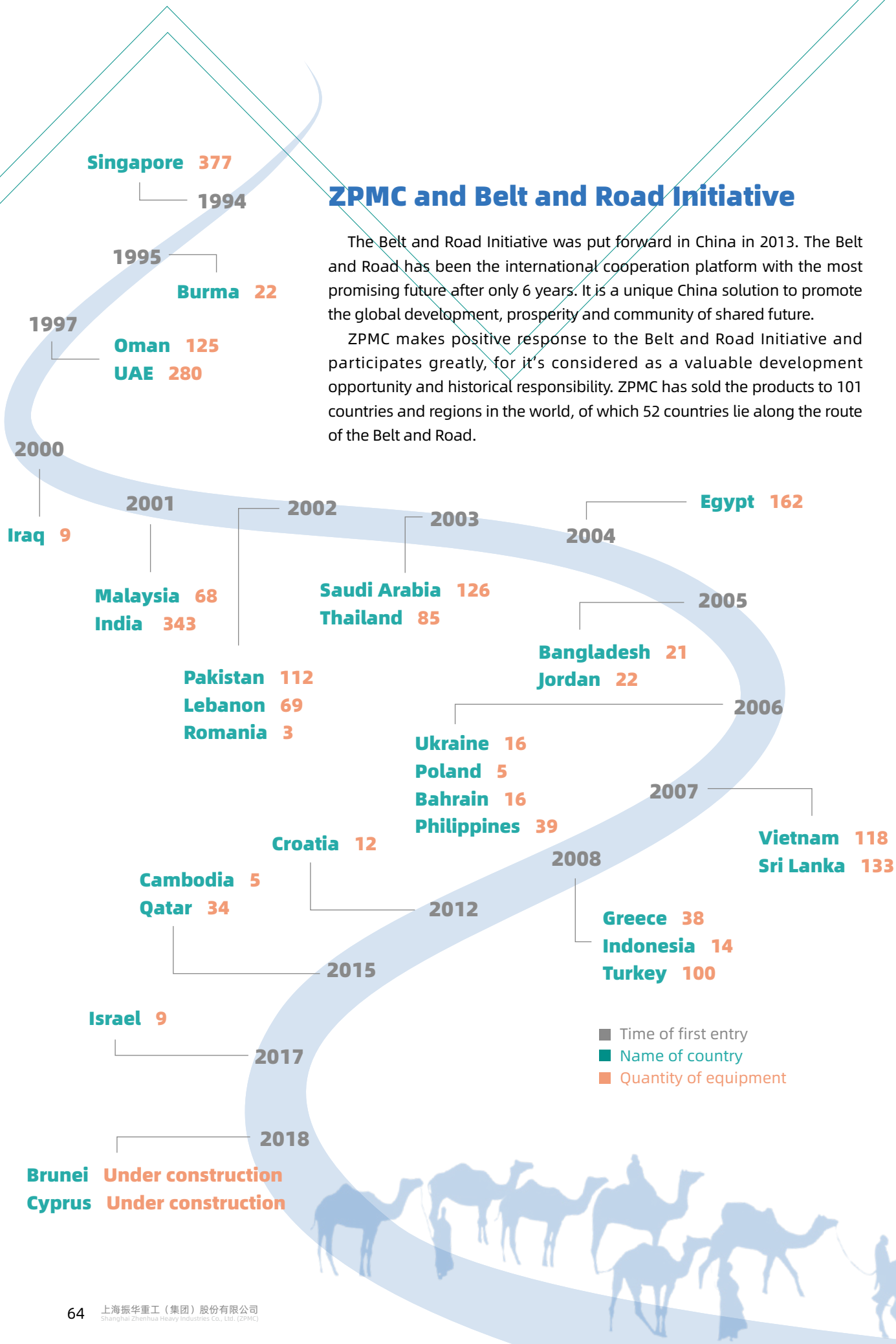
## ZPMC's step in 101<sup>st</sup> country

Cyprus is an island country at the junction of Europe and Asia, east of Mediterranean. The Country keeps amicable relation with China and it's quite possible to be one of supporting countries along the route of the Belt and Road. ZPMC signed with Cyprus Multimarine Shipyards Ltd. the contract on 2 electric floating cranes on April 4<sup>th</sup>, 2018. It indicated the products of the Company entering the 101<sup>st</sup> country or region in the world.



ZPMC manufacturing port machinery for Cyprus.





## Focus

### ZPMC's equipment for Port of Piraeus

The Port, located in the southeast of Greece, is the largest port in the Country and an important hub of 21<sup>st</sup> Century Maritime Silk Road in the region of Mediterranean. With the support of ZPMC's STSs, the Port in Greece is one of the container ports developing fastest in the globe.

China COSCO Group signed Memorandum on Completion of Transaction of Major Equity of Port of Piraeus Authority with Hellenic Republic Asset Development Fund (HRADF) on Aug 10<sup>th</sup>, 2013, indicating the official completion of share delivery and custody and COSCO Shipping (Hong Kong) taking over the Port officially, which was the first time for China to take over the foreign port authority.

On June 20<sup>th</sup>, 2014, Premier Li Keqiang made the speech under STSs of ZPMC with Samaras, the Prime Minister of Greece during Li's visiting Port of Piraeus. Li also encouraged ZPMC continue to promote products made in China.



Zhenhua No. 25 loaded with STSs arriving at Port of Piraeus.

### Localization management

The South Asia, where Sri Lanka is located, is one of the most active container transportation markets in the world. No port machinery from any other countries has entered such market since ZPMC's entering the port machinery market in Sri Lanka in 2007. ZPMC has been focusing on the localization management on talent training. The Sri Lanka Branch has the local employees of 130 while only 5 of China at present. ZPMC doesn't sell the products only but provides work opportunities for the local people.

ZPMC pays special attention to the establishment of soft environment in development under the Belt and Road Initiative. In 2016, two members' homes of the local staff were struck with floods and the Branch paid the comfort money as soon as possible.

Photo of staff of ZPMC Sri Lanka under STS by ZPMC.



Remarks: We are overseas representatives of the image of China. We will establish the influence of the brand with credit for the long development. We are the business partners in the local countries and we also provide training for the local talents. We participate in the social activities as volunteers and make rescue in case of emergency.

--- ZPMC Zhang Zhiyong



Global digital port circle

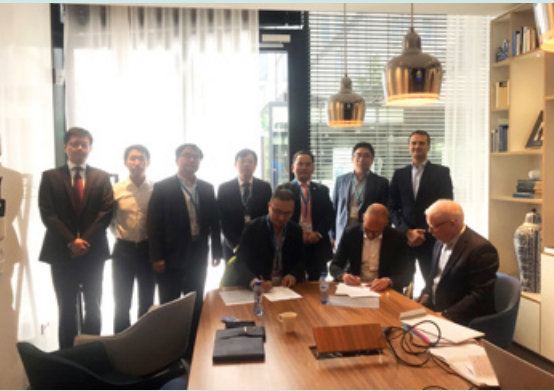
At present, the global ports have too many stocks in post-market with a quite long delivery period, causing high costs. ZPMC provides the digital supply chain solution for the post-market of ports on the basis of requirements of port users and expectations from interested parties.

Terminexus intelligent digital platform is the special solution provided by ZPMC for problems in post-market of ports.

ZPMC put forward a new mode of spare parts supply chain--- Terminexus VMI at the Terminal Intelligent Solution Forum in Nov 7th, 2017, a new mode for spare parts service management on the basis of information and Internet of Things to reduce the costs of storage and logistics of terminals. We have set up the online spare parts purchasing data platform on the basis of Terminexus to provide customized spare parts data for terminal users, simplifying the terminal spare parts purchasing flow and improving the supply efficiency and reducing the purchasing costs as well. It really solves the problem of users on spare parts management.

Major business of Terminexus intelligent digital platform

Major business of Terminexus intelligent digital platform	New retailing and VMI
	Intelligent maintenance
	Equipment and materials trade platform
	Professional consultation
	Digital cloud platform
	Vessel supply



ZPMC Terminexus signing contract with Maersk.

Port giant Maersk registering on Terminexus

Maasvlakte Phase II Terminal of Port of Rotterdam under Maersk signed the VMI contract with ZPMC Terminexus Company during 2018 European Terminal Operators Conference (TOC).

The Platform will provide the one-stop spare parts solution for Maasvlakte Phase II Terminal, reducing the operation costs and risks of stop as well as improving the work efficiency. Maersk registering on Terminexus shows the service ideas of ZPMC winning the approval of the main terminal operators in the world.

Multilateral trades

In 2018, the 18<sup>th</sup> anniversary of China's entry of WTO, ZPMC has been supporting the multilateral trade system, participating in the global economy governance with the wisdom of ZPMC as the positive participator, strong supporter and important contributor of multilateral trade system.



ZPMC signing contract at the first CIIE.

Winning orders of 1.5billion in CIIE

ZPMC signed purchasing contracts of nearly RMB ¥1.5billion with ABB Group Switzerland, BUBENZER Germany, BROMMA Sweden, Phoenix US, SKF Sweden and Igus Germany on electrical control system, brake and coupling, spreader and light of port cranes, bearing and towing chain on the first China International Import Expo (CIIE) on Nov 9<sup>th</sup>, 2018.

ZPMC has the registered qualified import suppliers of more than 300 at present and has led more than 160 domestic companies going abroad with advantages of the platform and brand of the Company. Besides, ZPMC also strengthened the introduction, with annual average purchasing amount of more than RMB ¥6billion for the past 5 years, covering more than 60% of total purchasing amount.





## Cultural exchanges

Considering going abroad involves not only the products and services but the culture as well, ZPMC, besides the construction of foreign projects, has been emphasizing on the cultural exchange with local countries as a bridge.

### Focus



USA Los Angeles awarding honorary certificate to ZPMC.



Young representatives from Los Angeles visiting ZPMC Changxing Base.

Remarks: I appreciate ZPMC for such valuable visiting opportunity greatly and I'm shocked with the operation of Yangshan Automatic Terminal.  
--- Dalton from USA

## American youth visiting China

In 2018, ZPMC North America Branch sponsored the American youth visiting China by Los Angeles Branch of USA China General Chamber of Commerce and Los Angeles Twin City Office. The American young representatives from Los Angeles visited the headquarters of ZPMC on August 2nd. They were members of Jazz band of Hamilton High School. They brought the amicable feelings of American people, especially that of the young to the people of China.

To show appreciation for the support of ZPMC, the government of Los Angeles awarded the honorary certificate to the Company, with signatures of the Mayor and 14 members of parliament.

## Part 5

## Shared development

The major social contradiction in the new era of socialism with China's Characteristics is between the increasing life requirements of the people and unbalanced and insufficient development. ZPMC will share the achievements of development with the whole country, taking the expectations of the people on the good life as the work direction of the Company.

## Products of high quality

ZPMC, in the development of 26 years since selling products to foreign countries for the first time, has been taking the quality of products as the core of the quality culture with characteristics of the Company.

### Quality management mode of no quality problem to next procedure

It is an important reform in the service mode of ZPMC and a change in the quality management system, which means no cargos by the Company with the quality problem are allowed for shipping. Meanwhile, the problem responsibility of different levels are made clear, keeping the cargos with the quality problem from going to next procedures, making the quality management system of everyone being responsible for the delivery and to customers. The management mode of no quality problem to next procedure won China Quality Award in 2016, the top one in the quality by China government.



ZPMC management mode of no quality problem to next procedure winning China Quality Award.

## ZPMC in first Sino-America Quality Summit

Sino-America Quality Summit of 2018 World Conference on Quality and Improvement (WCQI) was held in Seattle on April 30<sup>th</sup>, 2018 (local time). The first Sino-America Quality Summit by AQSIQ and ASQ jointly was held during WCQI of the year. ZPMC attended the Conference at the invitation, made the speech on improving the intelligent manufacturing capacity of port machinery on the basis of requirements of Internet of Things and also made exchange with representatives of enterprises and academies of both countries.



ZPMC participating in Sino-America Quality Summit.



## 聚焦



ZPMC quality inspectors taking an oath before the national flag.

### Culture of quality

September 2018 is the 41<sup>st</sup> Quality Month of China and ZPMC made positive response, including promoting on Wechat, LED screen and posters to publish the quality announcement of the Company. Different units of the Company held the flag-raising ceremony and signature activity to improve the sense of quality, making a solid foundation for the sustainable development of high quality of the Company as the flagship of China's national industry.

## 聚焦

### Quality knowledge contest

ZPMC held the first Quality Knowledge Contest in Sep 17th, 2018 to improve the quality management for better reputation of the Company. The Contest covered main contents of the state laws and regulations on quality, quality management system and knowledge as well as the quality management system of the Company. The Contest was made up of the online question answering and offline contest. The statistics showed that more than 3,000 people participated in the online question answering and finally 28 teams entered the offline contest successfully. The Contest was intended to test the quality theoretic knowledge and promote the culture of quality as well.

ZPMC holding Quality Knowledge Contest during Quality Month.



### Quality in mind



The management staff should not have ambiguous and misleading words in face of the quality problem. For example, "try to do it well" ; "it' s good enough" and "almost" . The management staff should participate in person with the positive attitude in case of any quality problem. Only in this way, can the staff make corresponding change and work hard under the influence.

--- ZPMC Wang Hongtao

We should always bear the sense of quality in mind, regardless of what posts and titles, which may have good or bad influence on the quality. So we should perform the duties before, during and after the event.

--- ZPMC Sun Zhangchen

What is the quality in your mind?

The quality means each crane meeting the requirements of standards, each assembled part meeting the process requirements, each cable and conduit are correct in electrical cabling and each function after debugging can meet the safety requirements of the bidding documents.

--- ZPMC Liuyang

Fault finding should not be considered as a negative word. However, we need such attitude in the work. Otherwise, a little fault in the work may result in a big problem.

--- ZPMC Xu Weixun

It' s not enough to meet the quality requirements in the bidding documents. It' s only the basic requirements. Only the unlimited innovation for customers is our target. Not all customers realize what they require. Therefore, we have to make innovation continuously to attract them with higher satisfaction.

--- ZPMC Guoxiao

The design quality is decided on the designer and the standardization is the quickest way to improve the design quality. The standard principles should be formulated in the design, the standard systems should be implemented in the management and the effect of Standard + should be made best use of in the work, leading and supporting the quality improvement with standards.

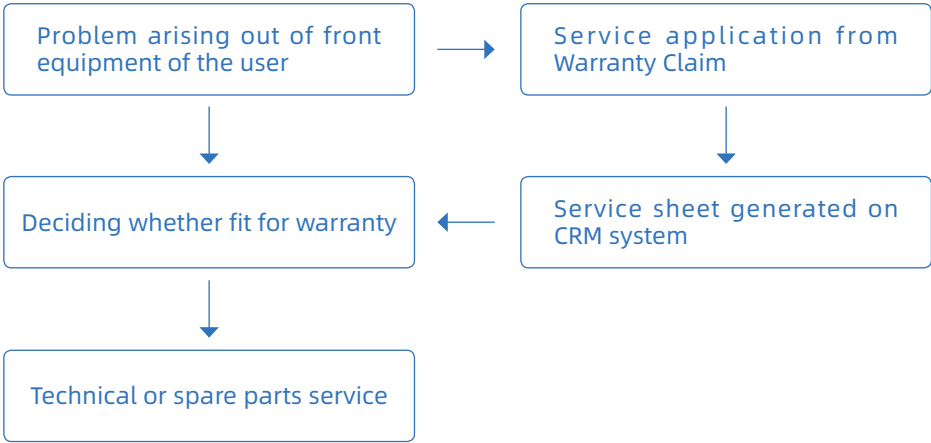
--- ZPMC Wangjie



Quality services system

ZPMC, considering the quality services are equally important with the excellent products, can receive the service application from customers at any time with the customer service system of overall coverage and rapid response. The customers can make responsibility application with the Quality Accident Feedback Sheet to the Company in case of any large losses and also can urge related responsible departments for timely improvement to avoid such similar losses in the future.

ZPMC customers services flow chart



Customers can submit the opinions or suggestions to related person in charge with Emails or official documents and can also make complaints to the staff on the site or director of customers services. ZPMC is willing to hear instructive opinions.

ZPMC made the after-sales customers' satisfaction assessment on the manufactured and sold port machinery and maritime engineering products in 2018, obtaining the general satisfaction of 88.96% from customers at home and abroad in 2018 after the subject weighting. There was no negative report on products or services of the Company for the whole year of 2018.

2018 ZPMC's customers' satisfaction



Care for staff's growth

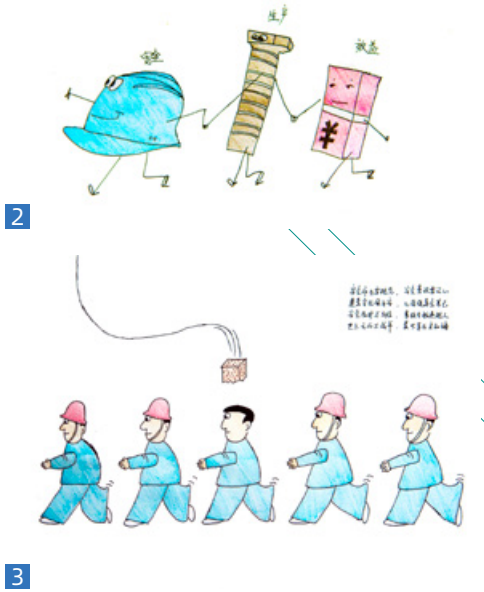
The talent is vital to the nature and development of a company. ZPMC, adhering to the people oriented principle, provides the opportunities for the staff promotion and share the development achievements with them.

Healthy body and mind

Safe work

To keep safety of life and property of the staff is the top priority. ZPMC, adhering to the principle of safety first, precaution foremost and general treatment, continues to modify and improve the accident response program and perfect the safety management network. The leaders of ZPMC signed the safety commitment and the Company made regular safety inspection to urge the related departments to perform the safety responsibilities. The Company also made various safety practices and training to promote the laws and regulations on the safe work and to guide the operators using the personal protective equipment correctly. The Company held various activities to promote the culture of safety, including the five-year safety cooperation with APM Terminals of Maersk to improve the safety management mutually.

ZPMC had no safety responsibility accidents of large or above level or no occupational disease accidents in 2018, guaranteeing the safety of life and property effectively.



1 . ZPMC emergency training on typhoon or floods.  
2 . Cartoon on safety work by ZPMC's staff (Painter: Xu Jinxin).  
3 . Cartoon on safety work by ZPMC's staff (Painter: Majing).



## Focus



### Large water construction vessels general emergency training

In June 2018, ZPMC held CCCC large water construction vessels general emergency training, including collision of vessels, people falling into water, oil leakage, firefighting and emergent rescue in limited space. Totally, 11 different vessels participated the training, emphasizing the emergency handling, commanding and reporting, testing the program, making familiar the emergency procedures, training the team, running in the rescue mechanism and providing watching and learning opportunity.



1. Vessels for emergency training in tour voyage.
2. Emergency training team ready for action.
3. People falling into water in training being saved and sent for medical treatment.
4. Representatives from different departments watching the training.

### Occupational health

ZPMC, bearing the staff occupational health in mind, formulates the system of regular physical examination each year and special physical examination for the staff of particular and hazardous professions. The Company handed out the personal protective equipment and high temperature subsidy and provided special facilities on the basis of construction sites to make overall protection on the staff.

### Occupational health safety achievements



Occupational health promotion

48



Involving staff

12505



Occupational disease control brochures

4436

The Company is equipped with the clinic with the medical insurance network, providing medicines and primary diagnosis on common diseases. The clinic has the chronic diseases team to make the ladder management on the patients of such diseases of the Company. There were 31 hypertensives at the beginning of the team. However, the number of patients meeting the standards increased to 58.06% at the end of the year. The patients of 6.45% got out of the very high risk group or high risk group, with the stable blood pressure. There were 3 diabetics at the beginning of the team. However, they controlled the FBG less than 7mmol/L at the end of the year, meeting the related requirements.



ZPMC clinic wallpaper.



ZPMC holding speech on health care in summer.



ZPMC implements the requirements of Shanghai Regulations on Smoking Control in Public Places and the staff is forbidden to smoke in buildings. Meanwhile, the Company makes positive promotion to the staff on the harm of smoking to the health, encouraging the staff to reduce or stop smoking.

ZPMC made various health speeches on point-fiber insertion technology, health care in hot summer, control of tuberculosis, massage on cervical spondylosis and female climacteric in 2018. The Company promoted correct and professional medical health knowledge and increased the awareness of the staff.



Doctor showing massage skills to staff in speech.

## Focus

### Micro doctor in company

Office workers are at high risk of sub-health due to stressed work and life at present. To improve the awareness of self-health care and physical conditions of the staff, ZPMC clinic founded the Wechat Zenhua Health to publish various health care tips and balanced diets in time.

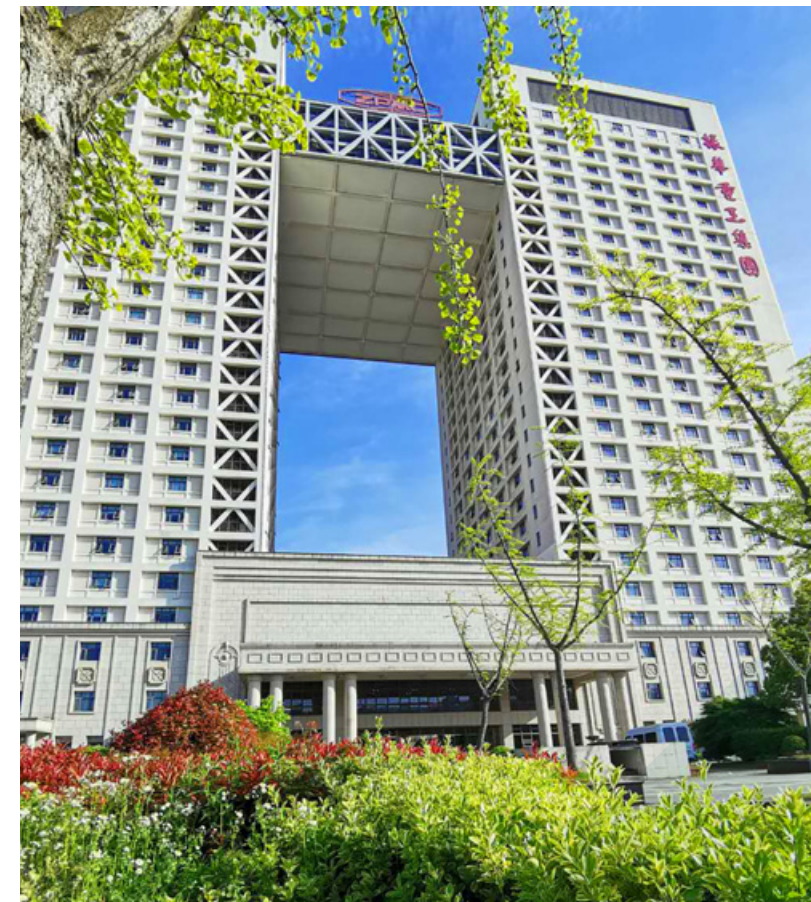
Zenhua Health published related information in time on the basis of various health care activities by ZPMC. It published notes before and after blood donation during the blood donation period to guide the staff for correct blood donation, making sure the staff's health and blood donation as well. It also published messages of how to understand liver function test report and urinalysis report during the physical examination by the Company, providing guidance on reading and understanding physical examination reports.

Official account of Zenhua Health.



### Comfortable office conditions

ZPMC considers the comfortable and clear office conditions can inspire the creation, improve the work efficiency and physical and psychological health of the staff. The Company has the green area of more than 10,000m2, making unique green landscape.



Green plants before ZPMC office building.

ZPMC promoting idea of waste sorting to staff on posters.



ZPMC formulated the perfect internal sanitary management system to strengthen the development of no smoking condition. The Company put up the waste sorting postures at the crowded positions of the office building to promote the idea of waste sorting, keeping the clean and clear office conditions.



Mutual growth

The development of a company depends on the growth of the staff. ZPMC has been providing the perfect assurance system and various growth platforms for the staff, making sure the mutual growth of the staff and the Company.

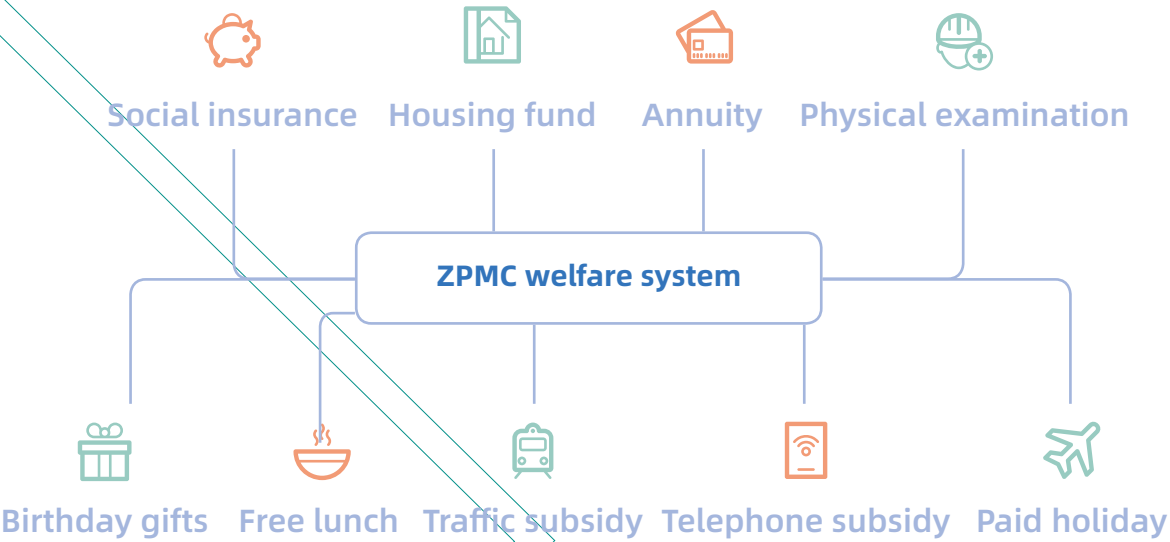
Fair employment and just management

ZPMC formulates the employment system in accordance with the state laws, regulations and policies to make sure open, just, competitive and preferential recruitment without any discrimination on the nationality, gender, age, race, religion, pregnancy and disability. All the staff is treated equally and the children of less than 16 years old are forbidden to recruit. The Company also increases the local recruitment to reduce the local unemployment rate and to improve the local life as well, making win-win cooperation. ZPMC treats the formal staff and dispatched workers equally, making sure the same salary of the same post with the formal staff in accordance with the requirements of new state polices on the labor dispatching.

Perfect remuneration and welfare

ZPMC has the perfect remuneration system on the basis of the market and the performance assessment system on the basis of the performance, post responsibility and achievements of the staff. The Company signs the *Salary Collective Agreement with the Labor Union to agree* on the minimum salary each year. However, there was no one to get the minimum salary in 2018 and the staff all signed the labor contract.

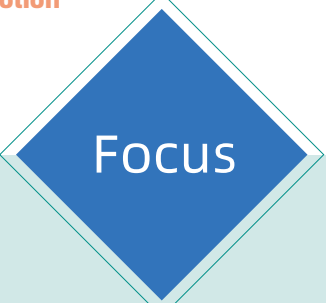
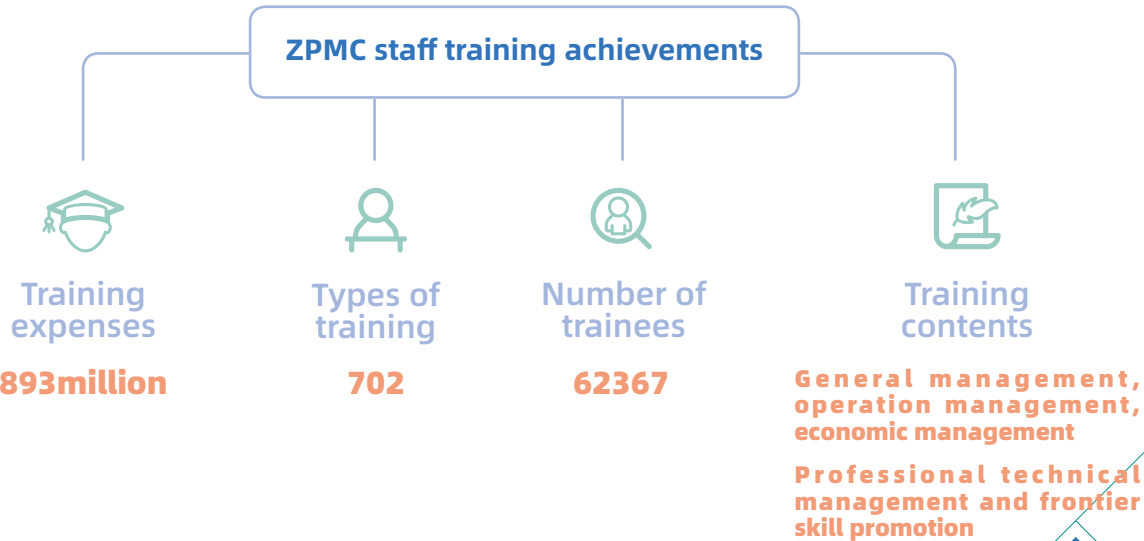
ZPMC provides the perfect welfare for each of the staff.



ZPMC respects the eating habits of the local staff, especially of ethnic minority and provides the paid holiday for the staff of Islam to spend the Lasser Bairam. To make sure the foreign staff working steadily, ZPMC covers the social insurance or commercial insurance for them, guaranteeing the legal rights of them and attracting and stimulating foreign talents effectively.

Training on staff

ZPMC, as a famous heavy equipment manufacturer in the world, recruits talents of different fields with the principle of openness and inclusiveness. The Company provides innovative training modes and mechanism for the staff as well as different promotion and occupational development opportunities, making sure the mutual development of the staff and the Company.



ZPMC training on standardization engineers

To develop standardization compound talents, ZPMC organized the internal training on standardization engineers in October 2018, whose main contents involved the transformation and upgrading of manufacturing under the digital wave, laws and regulations on standardization, international standards, modification procedures of international/national/industrial standards as well as corporation standard system, standard formulation methods and corporation standard preparing procedures, standardization in production, monitoring and inspection on standard implementation and data standardization. Totally, there were 138 people participating the training and passing the test, winning the certificate of corporation standardization engineer.



ZPMC standardization engineer training.



Sharing care

“Serve the staff of bottom level” is a typical activity of ZPMC. In 2018, ZPMC covered the mutual insurance by Shanghai Federation of Trade Union for the whole staff with RMB ¥820,000, and spent RMB ¥510,000 for birthday cakes and RMB ¥290,000 for film tickets for the staff of the Headquarters. The Company also spent RMB ¥290,000 for 266 sick or retired employees and RMB ¥170,000 for the staff of blood donation.

Handing out high temperature materials for staff in work.



Focus

High temperature subsidy

A large number of the staff still works outdoors in high temperature of July and August each year due to the particular work of the heavy equipment manufacturer. ZPMC organized a series of activities for such staff to show the care of the Company. The Company and the Labor Unions of the branches collected the high temperature subsidy and materials of RMB ¥1.293million for 67 projects and work sites, involving the staff of 21,242, including the migrant workers of 6,503. The Company also set up 41 cooling stations (service points) and urged to pay the high temperature subsidy of RMB ¥4.098million.

Focus



- 1 . Children learning calligraphy in summer classes by ZPMC.
- 2 . Tutoring children in summer classes by ZPMC.
- 3 . Leaves stickers by children.

Happy family

The staff of ZPMC, an international heavy equipment manufacturer, always has to go on business trips, failing to take care of the family. To express the appreciation to the staff, ZPMC organizes a series of parents-children campaigns. ZPMC organizes the summer classes to take care of the children of busy staff, leaving a good memory in the children.





Parents and children cooking pizza.

In the Children's Day of 2018, ZPMC organized various parents-children activities to provide opportunities for the busy staff playing with the children.

The children learnt how to cook pizza in the activity, learning about the value of the food as well as enjoying the delicious pizza by themselves and they also understood the parents' hard work in cooking.

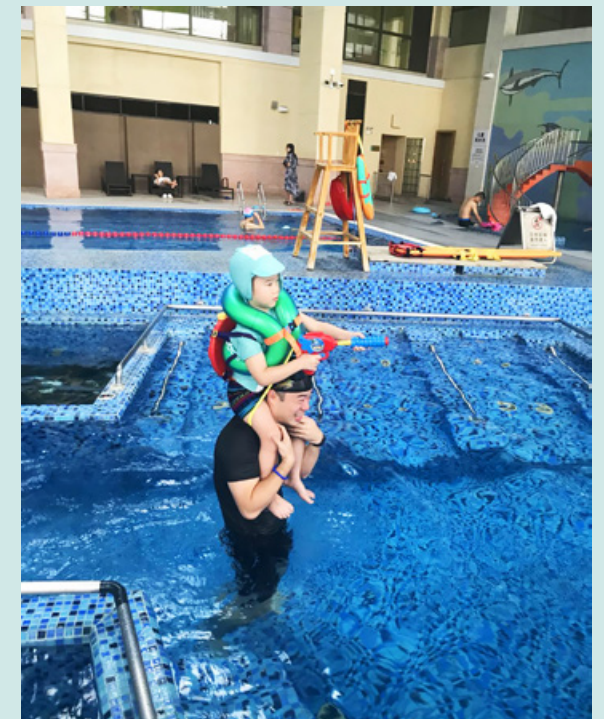
The Company also organized 120 people from 41 families to visit Shanghai Zoo and also presented children a gift box for the Children's Day.



ZPMC staff and families in parents-children activity.



ZPMC's staff and children making pottery in "Dad at home" club.



ZPMC's staff and children making challenge in "Dad at home" club.

The electrical engineers of ZPMC organized a parents-children club called "Dad at home". The electrical engineers of ZPMC are always on business trips every year and the Club can improve the happiness of the staff and the families. A happy family is an important support to the staff.





ZPMC awarding excellent female staff of 2017 in Women's Day of 2018.

#### Care for female staff

ZPMC, adhering to the gender equality, has been always providing equal work and promotion opportunities for female staff, encouraging them to create values and realize their dreams on the posts. ZPMC awarded the title of 2017 Women Pace-setter of the Company to 10 female employees in 2018. Many female employees won the titles of 2017-2018 Shanghai Traffic Construction Women Pace-setter Groups, Women Pace-setters, Advanced Women Individual and Good Mummy of Nantong Economic Development Zone.

ZPMC signed the special protection contract with female staff to protect their rights and provided special fund for serial activities of female staff, including speeches on female health. The Company also improved the Mummy's Room to provide support for female staff in lactation.

Mummy's Room for female staff in pregnancy and lactation by ZPMC.



## Focus



ZPMC's female employees making potting.

### Thanks to "Half of the Sky" of ZPMC

During the Women's Day of 2018, ZPMC and branches held colorful activities to express holiday blessings to the female staff for their contribution.

On March 7<sup>th</sup>, ZPMC Labor Union held Moss Potting DIY, with nearly 60 female employees participating in the activity.



Female representatives of ZPMC Changxing Base going to Zhujiajiao for spring outing.

More than 30 female representatives from different departments of ZPMC Changxing Base took bus for ancient town--- Zhujiajiao for spring outing at the noon of March 8<sup>th</sup>.



## Focus

Many different departments held conversations, films, yoga and make-up classes for the female staff with the holiday blessings.



Yoga class for female staff by ZPMC.

## Speech on female health

ZPMC organized two speeches on female health on Sep 26<sup>th</sup>, 2018, where the invited doctors introduced different contraception and birth control knowledge, knowledge on female climacterium and how to live a more elegant and healthier senior life. The vivid speeches with rich contents improved the understanding of the female staff on their health.



Speech on female health by ZPMC.

## Harmonious society

The responsible corporation can not only create the benefits but harmonious society as well. ZPMC will integrate the company development in the social development, contributing to the establishment of harmonious society.

## Brand of Made in Shanghai

The brand is not only the image of the corporation but an important sign of comprehensive strength and core competence and a name card of a city as well. ZPMC, as a famous heavy equipment manufacturer in the world, makes positive response to the establishment of the brand Made in Shanghai and contributes to the brand with key core technology, high-end industry cluster and high quality of products.



ZPMC at ceremony of first batch of corporations winning Shanghai Brand certificate.

## No. 0001 certificate of Shanghai Brand to ZPMC

The certificate conference of Shanghai Brand and the world certification day promotion ceremony was held in the small hall in Jinjiang Shanghai in June 2018. 53 Shanghai corporations won the certificates of Shanghai Brand on the Conference and ZPMC won the certificate No. 0001.

It was an important measure by Shanghai Municipal Party Committee and Municipal Government to implement the specific requirements on the quality improvement by the State Council to establish four brands of Shanghai Services, Made in Shanghai, Shanghai Shopping and Shanghai Culture as well as Shanghai Standard. ZPMC applied for the first batch of Shanghai Brand certificate officially in August 2017 and won the certificate, together with 52 other corporations of Lao Fengxiang, Double Happiness, Bright Diary and Shanghai Airport, in 2018.



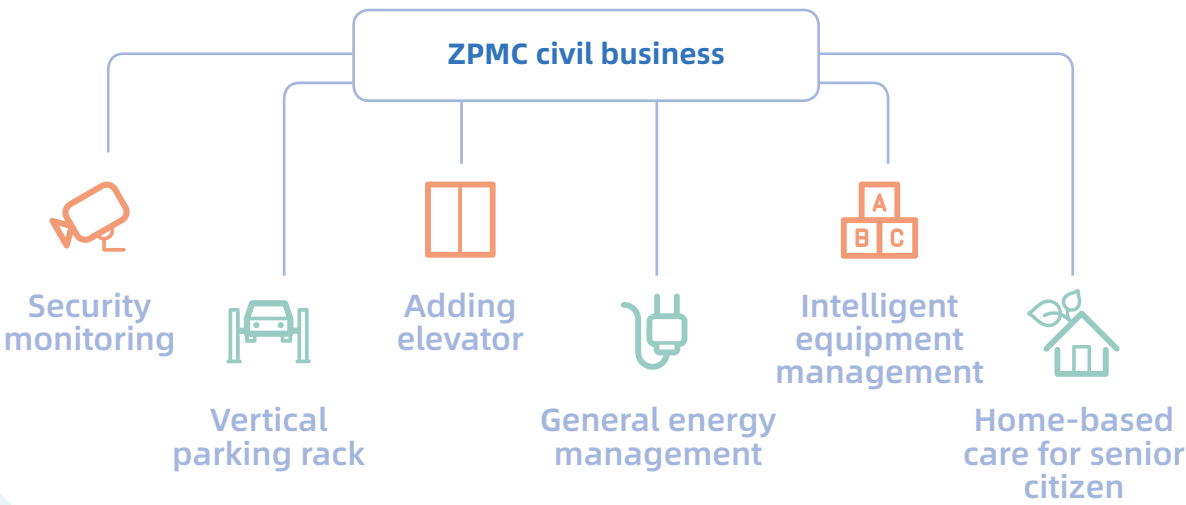
Certificate of Shanghai Brand.

## Focus



Civil services on smart industry

To meet the requirements of the development and the people, ZPMC establishes the smart community industrial ecological system with integration of the manufacturing and civil industry, providing general services for the nation and struggling to be the core company in the new era.



The Company established the cloud platform of smart community, integrating six businesses with the technology of Internet of Things, sensor network and Internet, to provide standard ports, data integration and analysis to the community and the data support and application bearing capacity to the public services and application services of the community. The Company also provided effective, visual and manageable community services for the families in the community, operation corporations, governmental institutes, third parties and property management corporations.



ZPMC smart community system.

Local development

Any corporation, however its size, can promote creative environment by creating employment opportunity and reducing poverty, thus, bringing about long-term interests for the community and institutes and promoting the economic and social development.



Public services

ZPMC, bearing the public services in mind, founded 17 volunteer service teams and recruited 680 volunteers and had 110 registered volunteers. The Company held the activity to learn from Leifeng, encouraging the young volunteers to contribute to public services in the community and nursing homes.

- 1.ZPMC' s staff planting trees in Tree-planting Day.
- 2.ZPMC' s young volunteers in nursing home of Nanmatou Community.
- 3.ZPMC' s staff in blood donation on Aug 29th, 2018.





ZPMC donating to children in Lupinus' Home.

## ZPMC famous public services activities

### ZPMC and Lupinus' Home

Lupinus' Home is a public service home for children of disability aged 0-14 of China. ZPMC has been focusing on the Home since 2014, making regular visit to the hospital to care for children in hospital and sales for charity each year, trying to provide a warm home for these broken angels. The representatives of ZPMC League Committee went to Lupinus' Home to visit children and to send the donation of more than ¥10,000 from sales for charity to the person in charge on March 26<sup>th</sup>.



ZPMC with poor children in Yunnan.

### Donation for study

It is another famous public activity other than Lupinus' Home. In 2018, ZPMC collected ¥59,653.66 to donate 4 computers, 110 pieces of beddings, schoolbags and stationeries for two primary schools in Lanping County Nujiang Yunnan Province and 80 dictionaries and vacuum cups to all recorded students in poverty and new term gifts for 19 new students of Majimi Village Maji Township of Fugong County. The Company also donated more than 900 new pieces of clothes to two primary schools in Xihe County Longnan Gansu Province and Ninglang County Lijiang Yunan Province and the poverty relief workers in Fugong County Nujiang Yunnan Province.

### Joint work with Nanmatou Community

ZPMC develops the deep friendship with adjacent communities in the development of the Company. The members of ZPMC League Committee are also those of Nanmatou Street League Committee, participating in the routine work, deepening the friendship with activities of Award on Youth Model, Reader and Helping Team. ZPMC supported a young student in poverty of the Community, providing necessities and academic support in 2018.

## Readers in Nanmatou Community

ZPMC League Committee and Nanmatou Street Community of Pudong New District held jointly Zhenhua Cup 2018 Nanmatou Community Readers Contest in November 2018. Gu Wenjin and Huang Yuxiao from ZPMC were selected in the Contest as young representatives. They shared the experience to struggle with their dreams around the theme of original intension and selected a passage of classics to read.



Zhenhua Cup Readers Contest by ZPMC and Nanmatou Community.

*The original intension may be a great ambition. Whether the life can be better or not, I want to have a try. The original intension may be a simple wish. We can change the fate with knowledge and win reputation with hard work.*

--- ZPMC Gu Wenjin

*The experience is valuable to my whole life and some inspiration to Party workers. We shall struggle with original intension to contribute to the development of the Company.*

--- ZPMC Huang Yuxiao





## Chapter 3

### ZPMC in media

We can learn much from others' experience. The social media are quite important to the Company, by which we can make communication with the world and better understanding on us as well.



## Printed media

To improve the brand benefits of ZPMC, the Company keeps promoting the brand ZPMC on leading media on the basis of hot subjects of "the Belt and Road" and "High-end Manufacturing". ZPMC appeared on CCTV for 8 times in 2018, participating in programs of AI vs. Human and Wildest Holiday. The People's Daily also made reports on the Company for 3 times.

### ZPMC Yangshan Project Team on People's Daily

"Wonder of intelligent terminals --- ZPMC Yangshan Project Team" was printed on the People's Daily on June 12th, 2018. The article made deep reports on the young staff creating wonders of the largest single wholly automatic terminal in the world and the terminal with the highest automation in the globe, showing their devotion and persistence.



### ZPMC terminal intelligent solution on Global Times

Global Times in English version published the article of *Coming of the Smart Port Era* just after the closing of ZPMC Terminal Intelligent Solution Conference on Nov 12<sup>th</sup>, 2018. Global Times in Chinese version then published the article of *Automatic Equipment by China's Enterprise in Terminals of Thailand* on Nov 13<sup>th</sup>, making deep analysis and report on the capacity of ZPMC to provide the terminal intelligent one-stop solution.

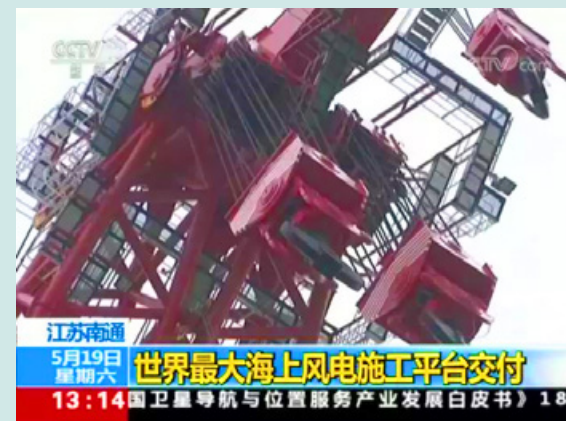


## Wonderful moment

### Largest wind power construction platform by ZPMC on media

Longyuan Zhenhua No. 3, the largest wind power installation platform in the world by ZPMC, was delivered in Nantong on May 18th, 2018, for which more reports were made by various leading media.

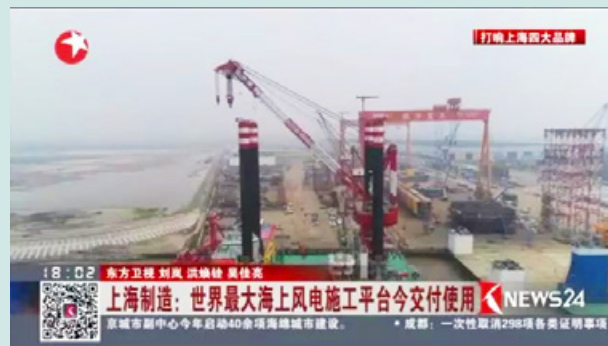
The news flash of CCTV News introduced that the platform "is the 2,000t wind power installation platform developed independently in China, realizing the localization of such a large platform, which can work under the water by 50m, saving the construction costs by 20%."





Wonderful moment

Dragon TV and STV News reported the delivery of the platform.



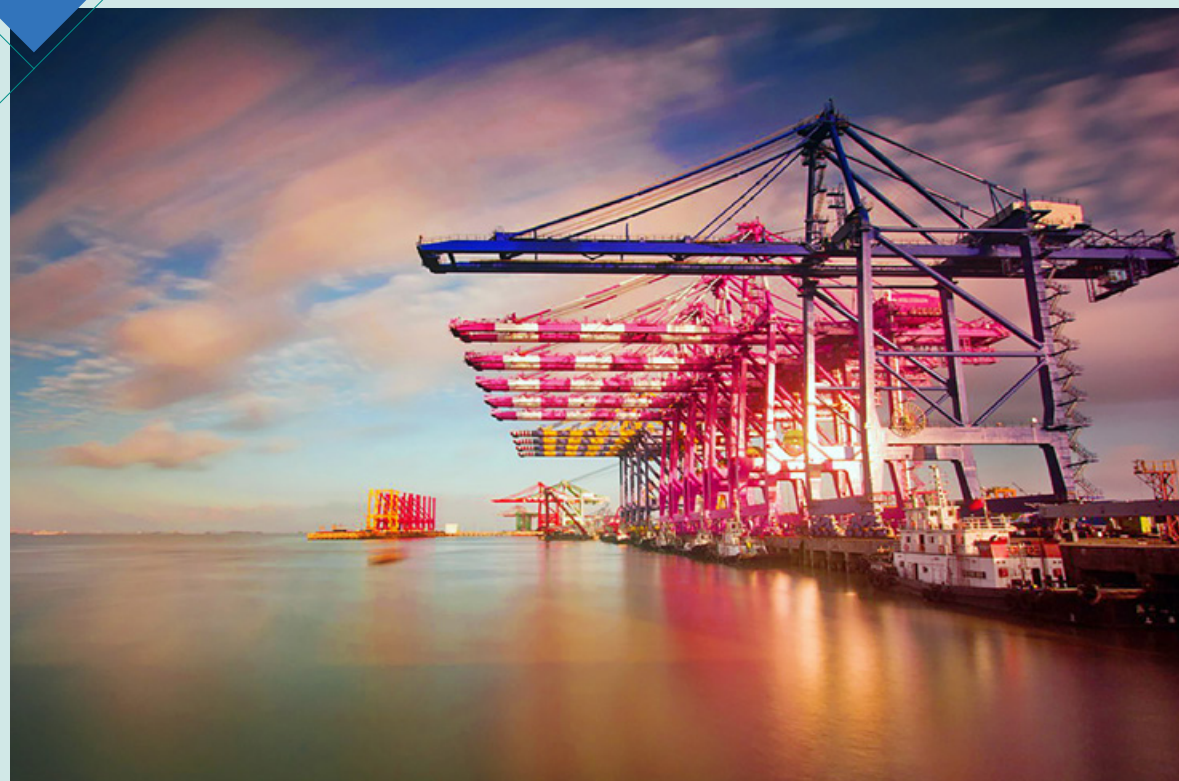
JSTV reported the delivery ceremony on TV and Network for 2 consecutive days.

People's Daily, Wenweipo and Paper made reports on Longyuan Zhenhua No. 3, the wind power installation platform.





Wonderful  
moment



## ZPMC live telecast by Xinhua News Agency

The team of Xinhua News Agency made a live telecast on the STS manufacturing along the 5km-long deep water coastal line of the Changjiang River in ZPMC Changxing Base on May 16<sup>th</sup> with the TV audience of 270,000. China has developed into the largest container cranes exportation country from the largest importation one, thanks to ZPMC, one of the largest heavy equipment manufacturers in the world. One STS is shipped from ZPMC Changxing Base every one and a half days on average.



## Island maker in media

Tiankun, the 6,600kw cutter suction dredger with the top suction capacity in Asia by ZPMC, attracted wide concern of media on the launching day for its strong dredging capacity and multiple leading techniques in the world.

In January 2018, Tiankun was reported in Primetime News of Dragon TV, an amazing product “Made in Shanghai” .

In March 2018, CCTV promoted the second season of Pillars of a Great Power, of which the Episode 5 Maritime Layout focuses the maritime industry, vessels and maritime engineering equipment. It reported that Tiankun made the breakthrough on key technology and mastering the core technology of heavy self-propelled cutter suction dredger, filling in the blank of independent design and manufacturing such dredger in China.



## ZPMC and Shanghai Yangshan Phase IV in AI vs. Human of CCTV

The program is the first scientific challenge one in China by CCTV-1 and Bureau of Science Communication Chinese Academy of Sciences, the peak of top AI development talents in the world and science and technology projects. ZPMC appeared in the Program in 2018, showing the automatic terminal technology of the Company to the global audience. The automatic STS of Unmanned Port Technology by ZPMC was used to operate the container of 2.5t to hit the golf ball of 46g with the diameter of 4.2cm. After five games, “Strongest human” represented by Zhu Shijie resulted with a draw to “Unmanned Port Technology” by 2:2.





Wonderful moment

## ZPMC in CCTV Wildest Holiday

CCTV Wildest Holiday group came to ZPMC on Dragon Boat Day of 2018, spending a special day with children, who enjoyed the traditional culture and charm of pillars of a great power. On the day, little warriors made rice dumplings with users and supervisors from Mexico and Malaysia, experiencing the charm of traditional culture of China.



Then little warriors in uniform and helmet visited the bases of ZPMC, enjoying the charm of important equipment of a great power on the terminal with giant STSs.

Finally, children ended the visit to ZPMC with a happy dinner with foreign engineers and supervisors.

Wonderful moment

## State important equipment winning global appreciation

The telecast team of Xinhua News Agency made the site network telecast in English through Facebook, Twitter and Youtube on May 24<sup>th</sup>, introducing Longyuan Zhenhua No. 3, a 2,000t wind power construction platform with the largest lifting capacity in the world. Aerial photos of large scenes, close-up shot, English commentaries and interviews won the global appreciation, with foreign reading of more than 30,000 times. The Agency also made the network telecast in Chinese on the same day and Tencent and Sina also made rebroadcast.



## Two giants from China

The STSs by ZPMC arrived at Noumea, the capital of New Caledonia in April 2018, breaking the local peace. The local media reported that such STSs were "two giants from China".

Such two kangaroo portal cranes were of 40t and they were the first products of the Company entering the Country. It was the first time for the local residents to have such large mechanical equipment and the first time of the equipment rolling on the local terminal. The user of the Project, Eramet Group of France, the mineral giant in the world, put up the observation platform on the terminal specially, observing the second STS rolling on the terminal with the local media. The audience sung high praise for the site operators of the Company after the STSs successful rolling on the terminal. They all shook hands and cheered to celebrate the successful unloading of the equipment.





ZPMC social responsibility achievement table (2016-2018)

Key index	2016	2017	2018
Operating revenue (RMB ¥ 10thousand)	2434809	2185881	2181239
Total profits (RMB ¥ 10thousand)	31604	42176	53706
Total staff (person)	8870	8797	8825
Proportion of disable staff	1.13%	1.16%	1.19%
Proportion of the staff of minority ethics	0.70%	0.66%	1.08%
Proportion of foreign staff	0.02%	0.01%	0.01%
Proportion of dispatched workers	9.78%	10.06%	9.57%
Rate of staff physical examination	100%	100%	100%
Rate of staff insurance	100%	100%	100%
Rate of employment contract	100%	100%	100%
Subscribed annuity (RMB ¥ 10thousand)	4,082.45	4,937.62	8,003.75

(The data in the annual report shall prevail in case of any conflict between such table and those in the annual report)

ZPMC energy consumption data table (2016-2018)

Key index	2016	2017	2018
Natural gas (10 thousand m3)	32.76	26.99	26.30
LNG (ton)	2,945.59	2,474.51	2,869.63
Petrol (ton)	527.58	471.73	452.98
Diesel (ton)	7,608.91	6,173.62	5,655.51
LPG (ton)	20.80	59.40	63.43
Heating power (Mkj)	6,649.90	5,188.05	4,702.50
Electricity (10,000kwh)	34,685.31	31,057.97	30,283.72
Production water (m3)	2,903,874	2,538,965	2,461,434
Emission of CO2 (tCO2)	309,523	273,534	268,470

(The data in the annual report shall prevail in case of any conflict between such table and those in the annual report)