



SDEC COMPANY PROFILE

& marine products introduction

Shanghai Diesel Engine Co., Ltd.
2636 JunGong Road, 200438, Shanghai, P.R.CHINA
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cs@sdec.com.cn

上海柴油机股份有限公司 地址(Add): 上海市 军工路2636号 No.2636, Jungong Road, Shanghai, P.R. China
Shanghai Diesel Engine Co.,LTD 邮编(PC): 200438 客服(CSH): 400 800 5656 网址(HTTP): www.sdec.com.cn



SDEC History and place

SDEC Products For Marine

SDEC Capability and Infrastructure

SDEC Network & Support

SDEC Milestone



1947年, Wusong Works
吴淞制造厂



1949年, Wusong Machinery Works
吴淞机器厂



1953年, Shanghai Diesel Engine Factory
上海柴油机厂

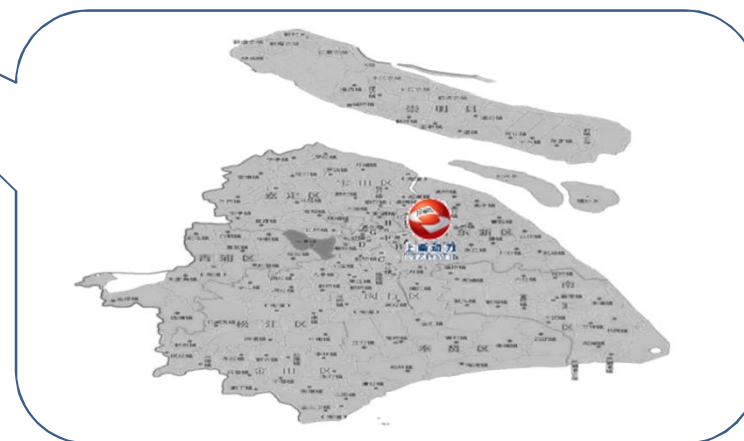


1993年, Shanghai Diesel Engine Co., Ltd.
改制为股份制公司



2017年, 70-year celebration, No.1.7m engine offline
70周年庆, 第170万台柴油机下线

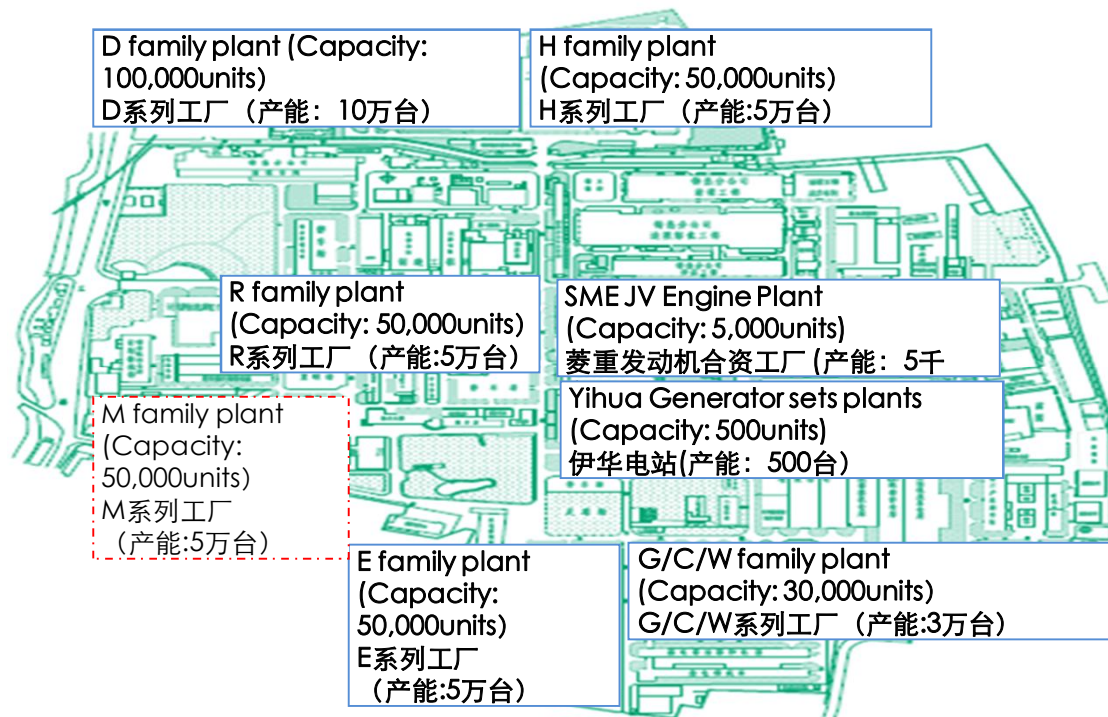
SDEC Location



➤ **Total Area 600,000 M² / 占地面积 60万 平方米**

➤ **Building Area: 310,000 M² / 建筑面积 31万 平方米**

SDEC Workshops - NOW



➤ **Focus investment on developing new engine family and improving engine body/head finishing and assembly capacity.**

集中投入新产品系列建设机体缸盖精加工和总装能力建设

➤ **Convert and divest the high energy consumption business, e.g. heat-treatment, forging, casting, connecting rod, etc.**

对热处理、锻造、铸造等高能耗业务以及连杆等零部件业务实施拔点转产

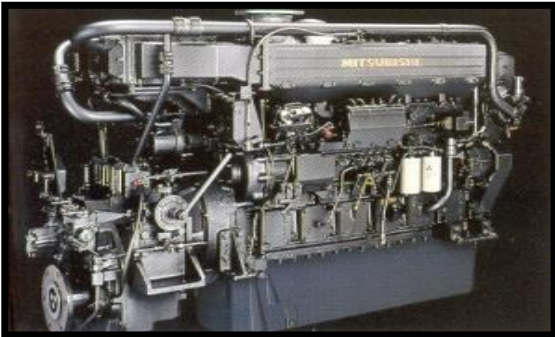
SDEC Subsidiaries-SHANGHAI MHI ENGINE CO., LTD. ("SME")



SME, established 50:50 JV by SDEC and MHI, produces SR series models with the power range of 500~2000kw.

With total investment of 435 million RMB (68 million USD), products are mainly applied to land power station, marine propulsion and auxiliaries.

上柴与三菱重工共同出资组建上海菱重发动机有限公司，生产SR系列500-1600KW大功率发动机产品，项目总投资4.35亿元人民币，产品主要适配船机和陆用发电机组等市场。



1	4
2	5
3	

- 1.Machining center, Japan**
日本进口加工中心
- 2.High-precision Crankshaft hole machine, Japan**
日本进口高精度大型曲轴孔加工机
- 3.High-precision Camshaft hole machine, Japan**
日本进口高精度大型凸轮轴孔加工机
- 4Automatic Block cleaning machine, Japan**
日本进口全自动机体清洗机
- 5Automatic Head finish machining line**
日本进口全自动缸盖精加工生产线

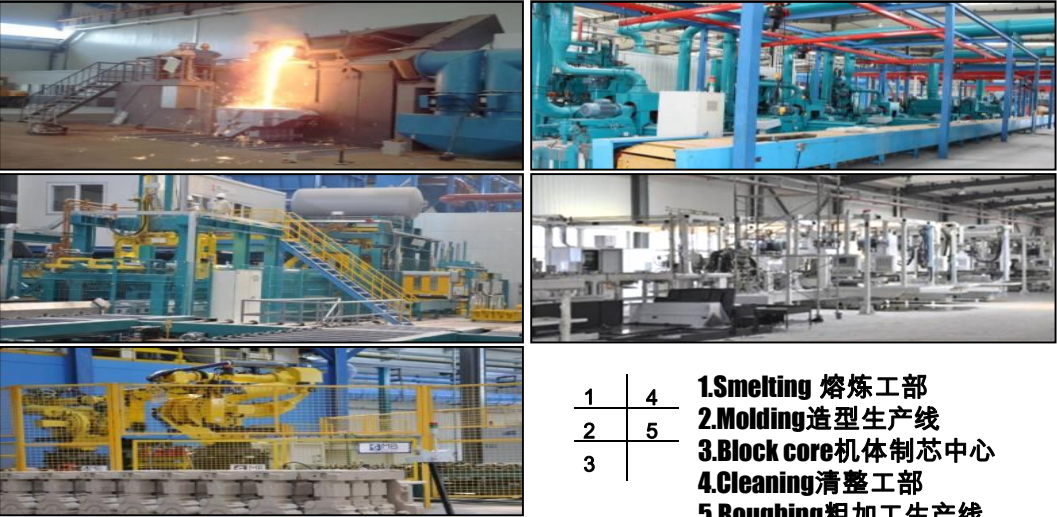
SDEC Subsidiaries-SHANGHAI DIESEL HA'AN CO., LTD.(“SDEC-HA”)



1st stage investment of 600 million RMB (94 million USD). Annual output of 150,000 units medium and large cylinder block/ heads (equal to appr. 50,000t of qualified castings)
 项目分为两期实施，一期投资6亿元，年产中大型机体/缸盖15万套（折合合格铸件约5万吨）。

Total investment of 1 billion RMB(157 million USD), annual production plan for 90,000t casting as well as machining, land area of 247,000 M². The project is divided into two phases of implementation.

上柴海安项目总投资为**10**亿元，生产纲领为**9**万吨铸件/年以及产品机加工，占地面积**370**亩。



- | | | |
|---|---|---------------------------|
| 1 | 4 | 1.Smelting 熔炼工部 |
| 2 | 5 | 2.Molding造型生产线 |
| 3 | | 3.Block core机体制芯中心 |
| | | 4.Cleaning清理工部 |
| | | 5.Roughing粗加工生产线 |

SDEC Subsidiaries-SHANGHAI MHI TURBOCHARGER CO.,LTD.(“SMTC”)

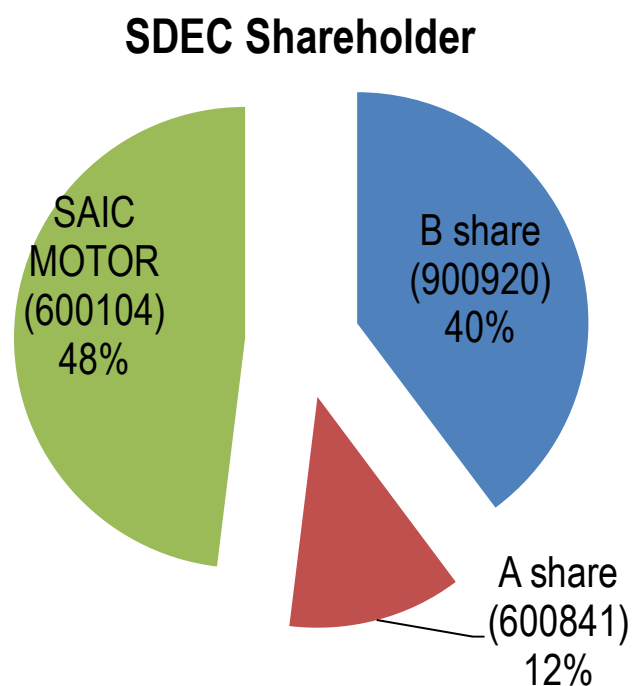


Shanghai MHI Turbocharger Co., Ltd. is jointly invested and established by MITSUBISHI Heavy Industries, LTD., SDEC, Shanghai Sumitomo Co., Ltd., and Sumitomo Corporation. The superchargers produced by the company are widely applied in the fields of automobile, engineering machinery, power station, ships, etc.. Market share is expanding year by year.

上柴与三菱重工、住友商事共同出资组建上海菱重增压器有限公司，生产销售乘用车、商用车及各类工业用涡轮增压器产品，市场份额逐年扩大。



SDEC Share structure



Company Name 公司名称

Shanghai Diesel Engine Co.,Ltd.

上海柴油机股份有限公司

Abbr. 缩写

SDEC A (A Share) SDEC B (B Share)

Stock Code 股票代码

600841 (A Share) 900920 (B Share)

Enlisted 上市时间

Shanghai Stock Exchange, Dec, 1993

1993年12月27日，上海证券交易所

Registered Capital 注册资本

869,092,530 RMB (140,176,215 USD)

SDEC Human Resource



52%

Production生产, 954

31%

Technician技术, 573

9%

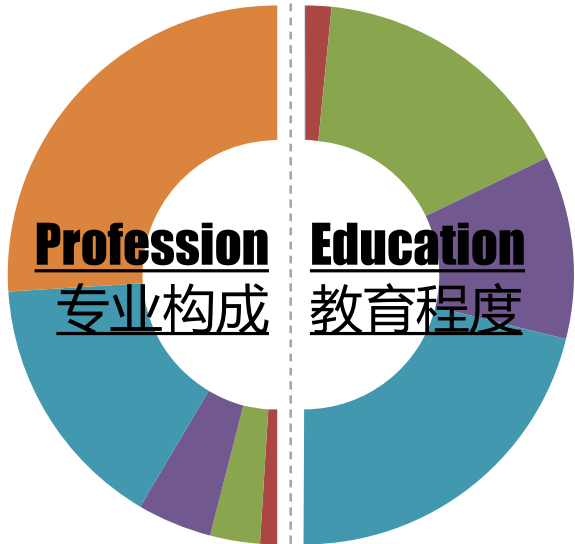
Sales销售, 169

6%

Management and others行政, 114

2%

Finance财务, 37



0.2%

Doctor博士 5

3%

Master硕士 54

32.3%

Bachelor本科 598

22%

College大专 405

42.5%

Secondary technical and below中专及以下, 785



■ **EMPLOYEE**员工合计: 1847

Фотографии SDEC



Пруд 莲池



Отдел продаж 营销



Технологический отдел 技术中心



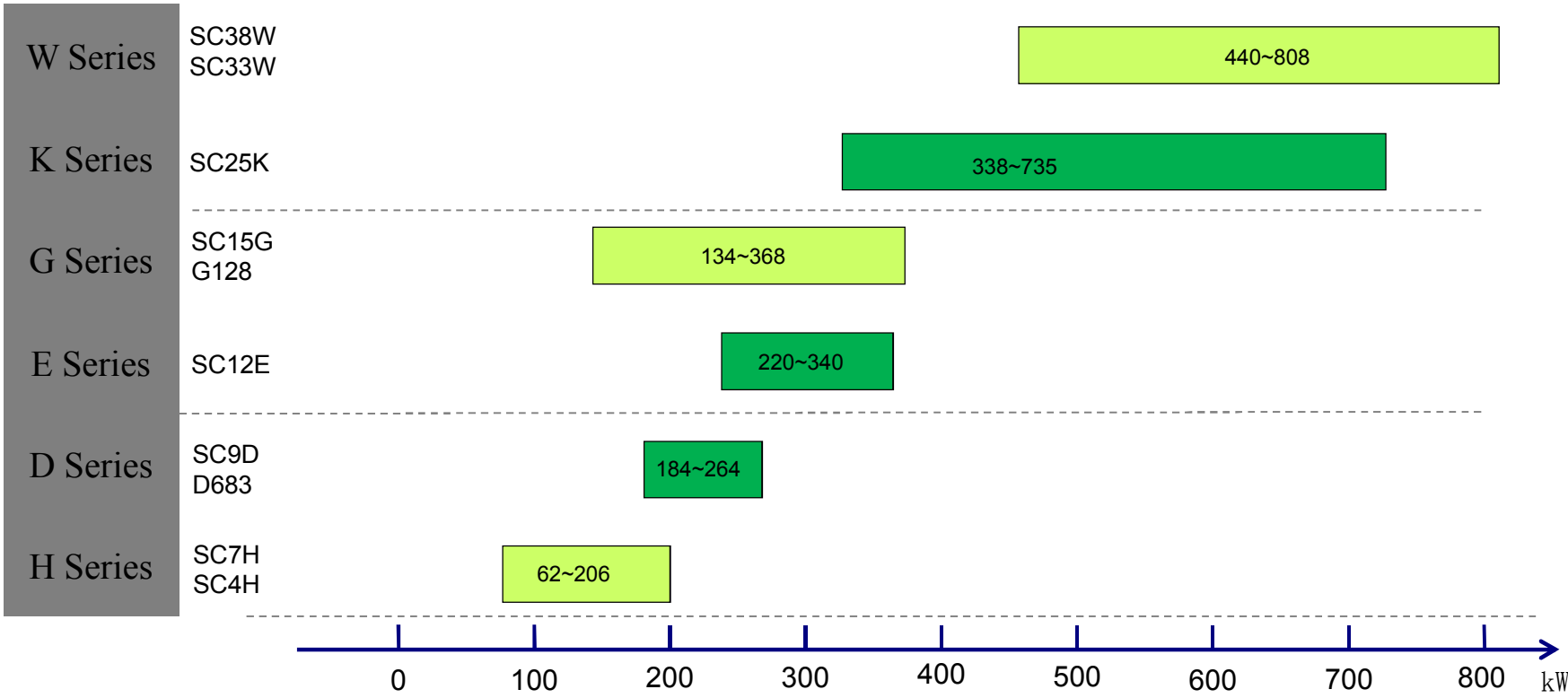
SDEC History and place

SDEC ENGINES FOR MARINE

SDEC Capability and Infrastructure

SDEC Network & Support

SDEC MARINE ENGINE POWER RANGE



高品质船用发动机系列产品 High Quality Marine Series



精致



H series

与康明斯QSB系列相同平台，联合英国RICARDO设计
Bench mark Cummins QSB
Joint design with RICADRO,UK



D series

与康明斯C系列相同平台，联合美国西南研究院设计
Bench mark Cummins C series
Joint design with SWRI,USA



E series

与奔驰DD13发动机相同平台，联合奥地利AVL设计
Bench mark Benz DD13,
Joint design with AVL, Austria

可靠



K series

与康明斯QSK23同平台，重大改进设计
Bench mark Cummins QSK23,
Remarkable improvement in design



W series

按照三菱重工技术及考核标准，自主开发
Refer to Mitsubishi
technology and standard,
Independent development



G series

自主设计，咨询奥地利AVL，优化改进设计，持续提升产品品质
Independent design,
consult with AVL

62 ~882kW (95Hp~1200Hp) 船用主机Marine propulsion

50~800kW船用发电机组Marine power generator

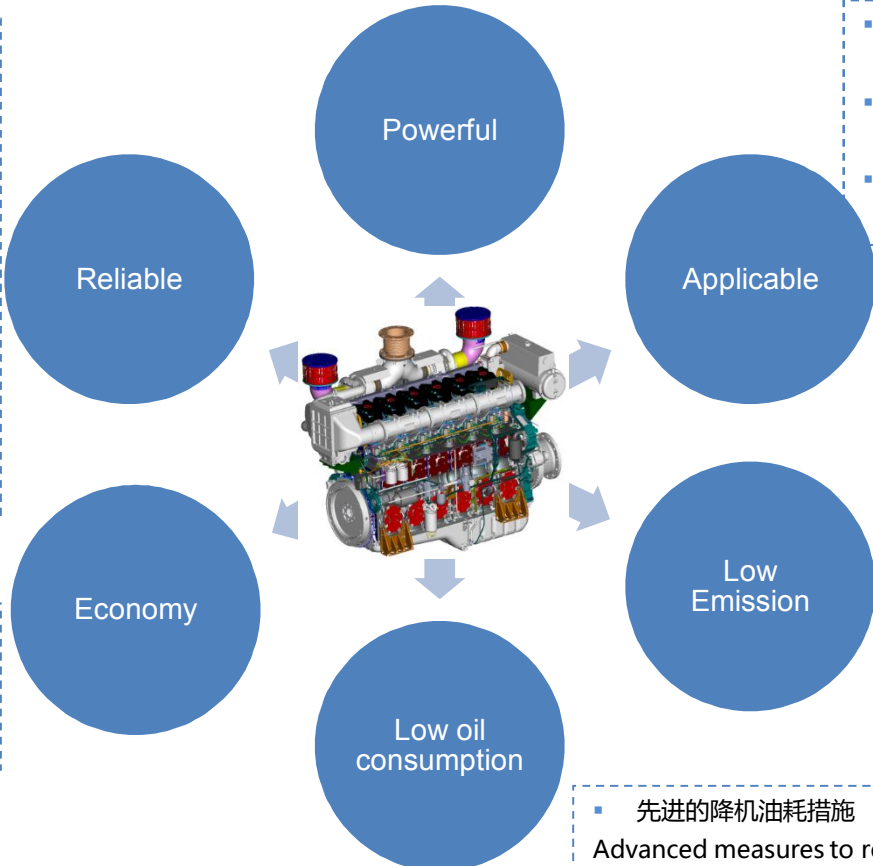
50~250kW船用应急发电机组Marine emergency generator

上柴船用发动机产品亮点Features



- 严格按照上汽乘用车发动机开发流程GPDP流程开发
Strictly in accordance with SAIC Motor development process-GPDP process development
- 曲轴、连杆、油泵部件考核
Crankshaft, connect rod, pump testing
- 整机耐久考核
Engine duration testing

- 燃油耗低
- 低油耗转速区域宽广
- Low fuel consumption
- With wide speed range



- 全系列四气门产品
All series four valves
- 最大扭矩高于国内同排量产品
Max torque higher than competitors
- 低速大扭矩
Lower speed with High torque

- 用于不同工况的渔船、运输船、客船、工程船
Widely use in different application, fishery, cargo, passenger, working vessel
- 不同配置选择
different options

IMO TIER II

- 先进的降机油耗措施
Advanced measures to reduce oil consumption

W SERIES MARINE ENGINE



- W系列发动机是上柴为满足船用大功率配套需求，按照三菱重工技术及考核标准，自主开发的新一代大功率产品
- W series engine is a new design products to fulfill the requirements of high power,
- Refer to Mitsubishi technology and standard



Power Range (440-808kW)

■ Feature

- Gantry block
- Dual-Turbo
- Four valves
- One cylinder one head

W series Marine Engine



➤ W series parameter

✓ Model	SC33W	SC35W	SC38W
✓ Cyl No.	6	6	6
✓ Valves/Cyl	4	4	4
✓ Bore×stroke	180x215	186*215	180x250
✓ Disp (L)	33	35	38
✓ Fuel system	Mechanical	Electrical	Electrical
✓ Output interface	SAE 0#/18'	SAE 0#/18'	—/18'
✓ Power	440~808kW	735~882kW	440~735kW
✓ Marine Genset power	400~600kW (four-pole)	600~800 (four-pole)	500~600kW (six-pole)
✓ Cert	IMO Tier II	IMO Tier II	IMO Tier II



K SERIES MARINE ENGINE



- SC25K系列船用柴油机是集上柴70多年柴油机研发经验，与康明斯QSK23相同平台，先进技术自主研发而成的全新一代发动机产品。
- Sc25k series marine diesel engine is a new generation, which is self-developed with advanced technology and 70years R&D experience, bench mark Cummins QSK23



Power range(338-735KW)

- **Feature**
 - Four valves
 - Gantry block/wet liner
 - Electrical control unit pump
 - Integral crankshaft
 - Dual-Turbo

K series Marine Engine



➤ W series parameter

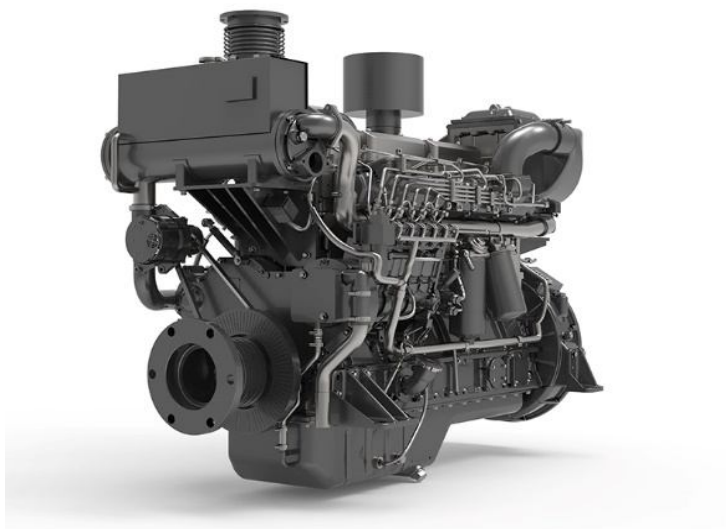
✓ Model	SC25K	SC25K
✓ Cyl No.	6	6
✓ Valves/Cyl	4	4
✓ Bore X stroke	170x185	170x185
✓ Disp (L)	25	25
✓ Fuel system	Electrical (CR)	Electrical (EUP)
✓ Output interface	SAE 0#/18#	SAE 0#/18#
✓ Power	500~1000ps	500~800ps
✓ Marine Genset power	500~600kW (four-pole)	350~500kW (four-pole)
✓ Cert	IMO Tier II	IMO Tier II



G SERIES MARINE ENGINE



- ❑ G系列船机是经奥地利AVL咨询做出重大改进设计，历时2年多精心打造的新一代船用柴油机。产品推出后，以高品质、高可靠获得用户的认可。
- ❑ G series marine engine is a new generation marine engine which is joint improved with Austria AVL for more than two years. After the launch of the product, it has been recognized by users with high quality and high reliability.



Power range(184-368KW)

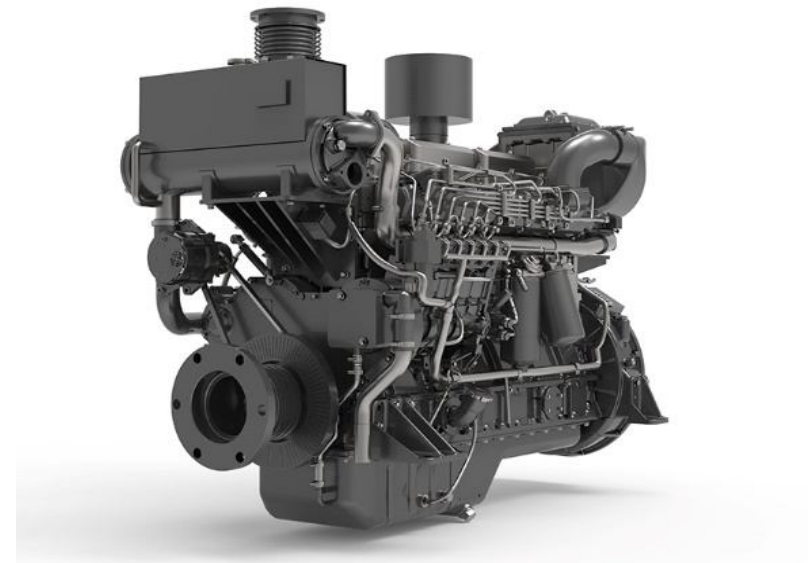
- Strengthen block
- Optimized burning system
- Efficiency turbo
- Integral crankshaft

G series Marine Engine



➤ G series parameter

✓ Model	G128	SC15G
✓ Cyl No.	6	6
✓ Valves/Cyl	4	4
✓ Bore×stroke	135x150	135x165
✓ Disp (L)	12.88	14.2
✓ Fuel system	Mechanical	Mechanical/ECU
✓ Output interface	SAE 1#/14#	SAE 1#/14#
✓ Power	184~280kW	280~338/ 220~368kW
✓ Marine Genset power	150~250kW	250~300/ 200~320kW
✓ Cert	IMO Tier II	IMO Tier II



E SERIES MARINE ENGINE



- 参考欧洲重卡发动机（奔驰DD13）样机，根据船用柴油机使用要求，并委托AVL公司开发；
- Referring to the European heavy truck engine (Benz dd13), according to the requirements of marine use, and entrust AVL to develop;



Power range(220-340KW)

● Features

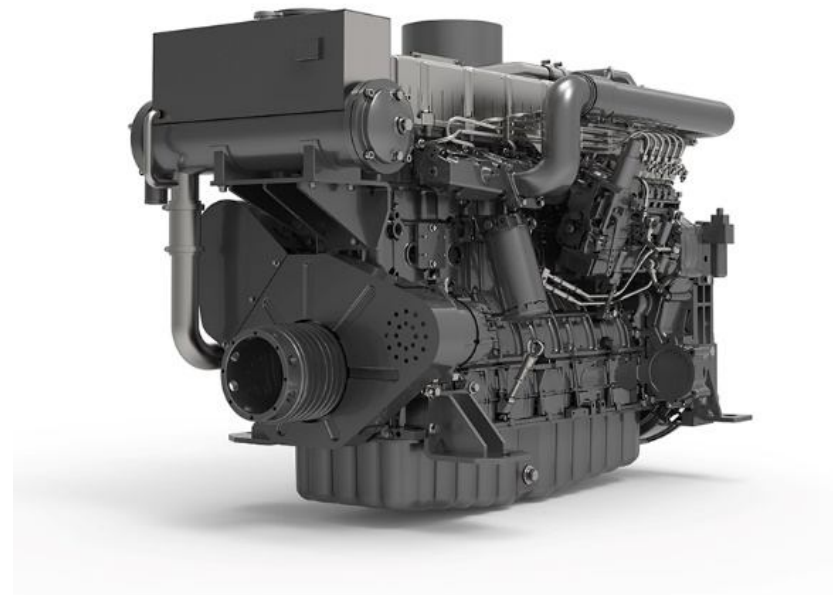
- Compact design
- Four valves per cylinder
- Integral cylinder head
- Wet liner

E series Marine Engine



➤ E series parameter

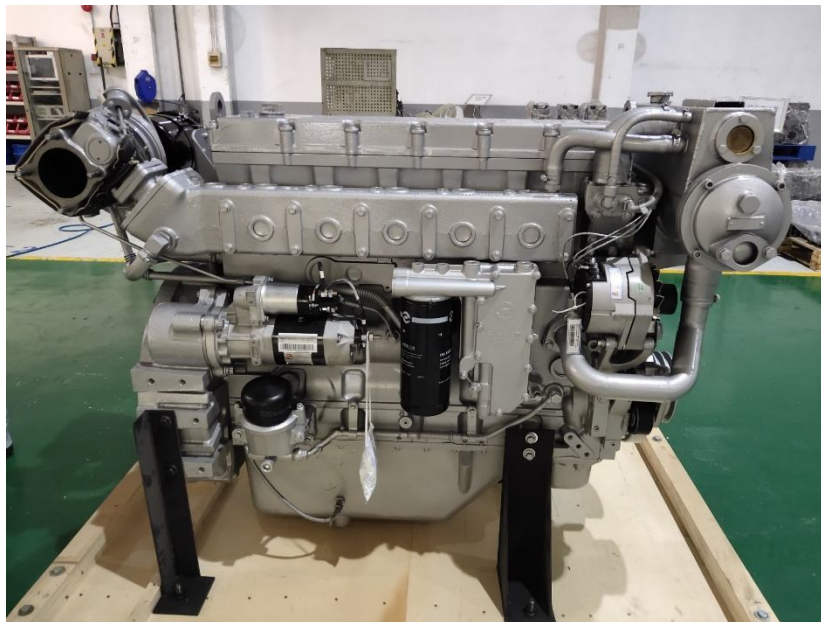
✓	Model	SC12E
✓	Cyl No.	6
✓	Valves/Cyl	4
✓	Bore×stroke	128×153
✓	Disp (L)	11.8
✓	Output interface	SAE 1#/14'
✓	Power	220-340kW
✓	Marine Genset power	200-280KW
✓	Cert	CCS/IMO



D SERIES MARINE ENGINE



- ❑ 与AVL联合开发设计, 对标机型：康明斯ISL8.9
- ❑ Joint design with AVL, bench mark Cummins ISL8.9



Power range (184-294kW)

● Features

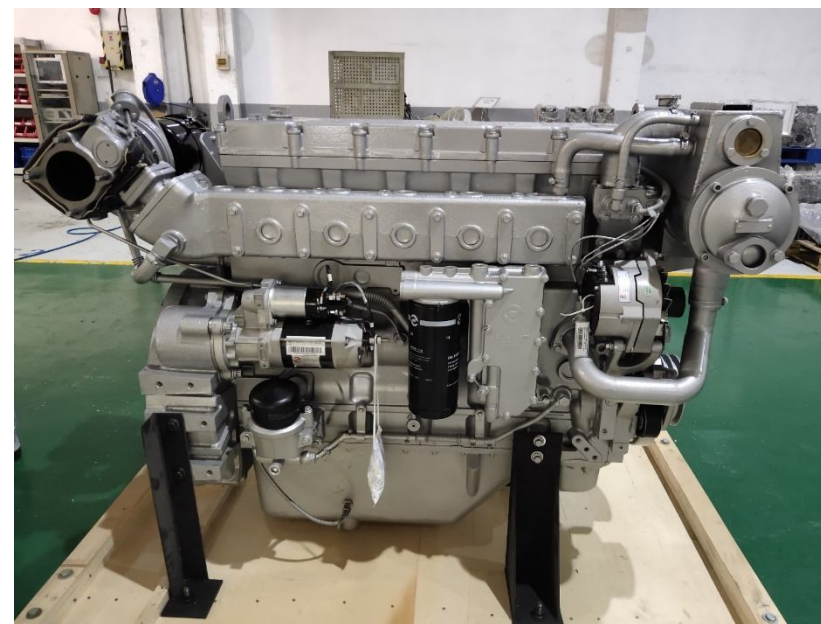
- Compact design & light weight
- Four valves per cylinder
- High speed
- Wet liner

D series Marine Engine



➤ D series parameter

✓	Model	D683	SC9D
✓	Cyl No.	6	6
✓	Valves/Cyl	4	4
✓	Bore×stroke	114×135	114x144
✓	Disp (L)	8.3	8.8
✓	Fuel system	Mechanical	Mechanical/ECU
✓	Output interface	SAE 2#/11.5'	SAE 1#/14#
✓	Power	184-264kW	184~264/184~294kW
✓	Marine Genset power	/	120~200/120~220kW
	Cert	CCS/IMO	CCS/IMO



H SERIES MARINE ENGINE



- ❑ H系列柴油机是上柴公司参考美国康明斯QSB 柴油机，与英国Ricardo 联合开发多用途发动机
- ❑ H series is bench mark Cummins QSB model,
- ❑ joint developed with Ricardo UK.



Power range (62-184kW)

● Features

- Compact design
- Four valves per cylinder
- Integral cylinder head
- Wet liner

H series Marine Engine



➤ H series parameter

✓	Model	SC4H	SC7H
✓	Cyl No.	4	6
✓	Valves/Cyl	4	4
✓	Bore×stroke	105x124	105x124
✓	Disp (L)	4.3	6.5
✓	Fuel system	Mechanical	Mechanical
✓	Output interface	SAE 1#/14'	SAE 1#/14'
✓	Power	62~120kW	103~184kW
✓	Marine Genset	50~100kW	90~150kW
	Cert	CCS/IMO	CCS/IMO



上柴船机主要应用 SDEC MARINE ENGINE APPLICATION



Application Ref



Model	Disp	Power/speed	Recommend application	Remark
4H	4.3L	62~120kW/1500~1800rpm	Coastal Small fishery vessel Coastal Fishery auxiliary vessel Ferry/yacht/passenger vessel Marine power generator	
7H	6.5L	103~184kW/1500~2300rpm	Coastal fishery vessel Coastal Fishery auxiliary vessel Ferry/yacht/passenger vessel Small Cargo vessel/Offshore working craft Marine power generator	Trawler not applicable
D	8.3/8.8L	184~264kW/1500~2300rpm	Offshore fishery vessel Ferry/yacht/passenger vessel Cargo vessel/Offshore working craft	
G	12.88/14.2L	184~340kW/1500~1800rpm	Offshore fishery vessel Ferry/passenger vessel Cargo vessel/Offshore working craft Marine power generator	Trawler not applicable
E	11.8L	220~340kW/1500~2100rpm	Offshore fishery vessel Ferry/Passenger vessel Cargo vessel/Offshore working craft	
K	25L	400~600kW/1500~1800rpm	Offshore fishery vessel Cargo vessel	
W	33/38L	440~735kW/1200~1500rpm	Offshore fishery vessel Cargo vessel Marine power generator	



H



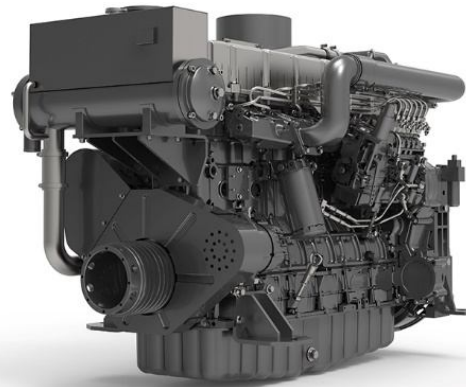


D



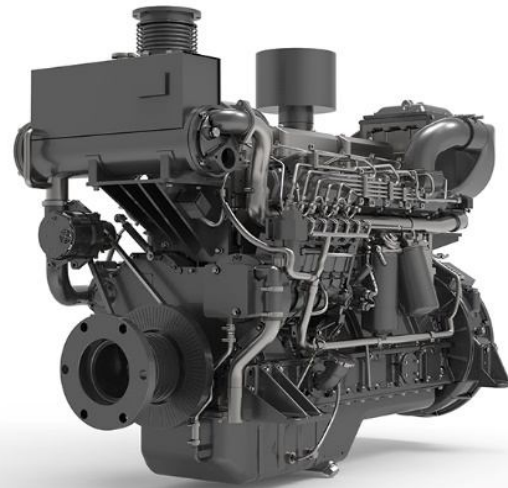


E





G





W



CASE 1



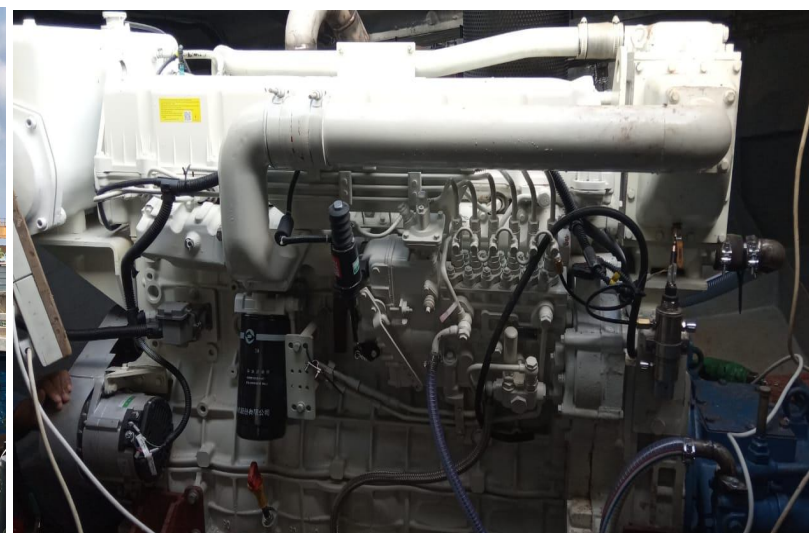
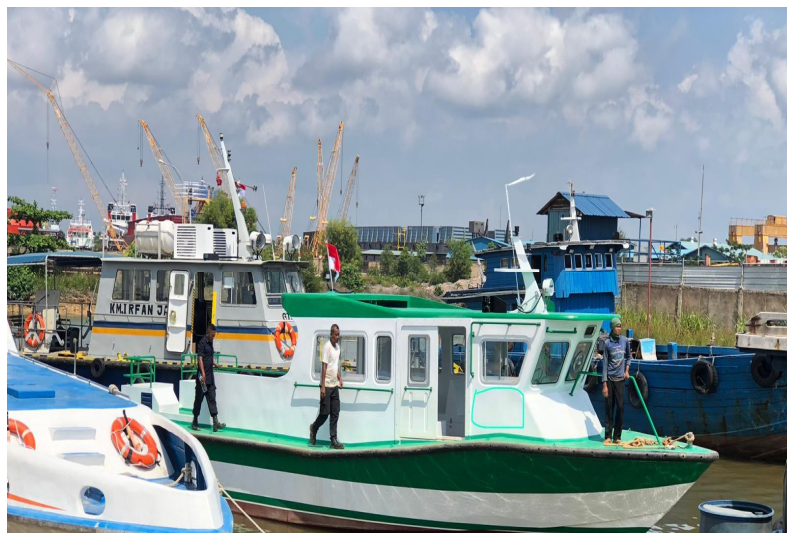
船舶用途Application	东南亚海岛休闲娱乐Southeast Asia island tourism
船舶吨位Tons (T)	300
船长*船宽*型深vessel L*W*D (m)	33.5*11*1.5
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	10 Knot节@1060rpm
船舶主机型号*主机数量engine*Nos	SC33W680CA2, 两台
功率*转速power/rpm	490kw@1350rpm
齿轮箱型号*速比gear ratio	NICO , 4 : 1
试航日期trial date	2019年4月



CASE 2



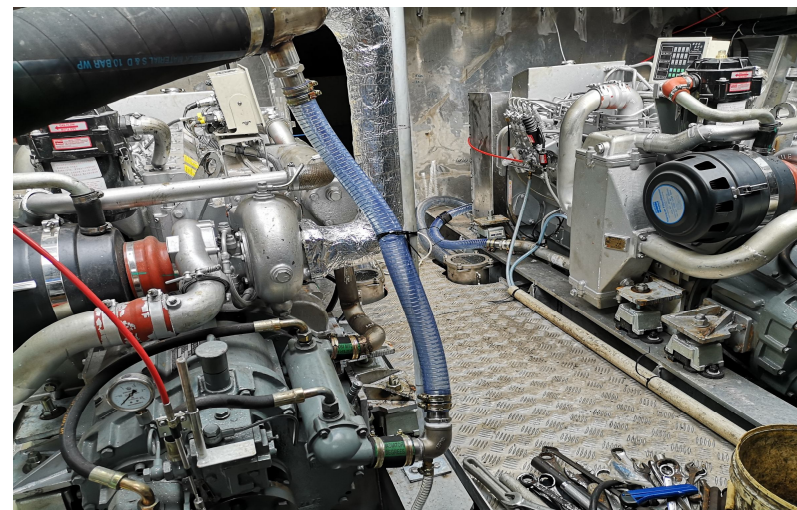
船舶用途Application	新加坡港港区载人Singapore passenger vessel
船舶吨位Tons (T)	16
船长*船宽*型深vessel L*W*D (m)	15*4*1.5
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	16节@1700RPM
船舶主机型号*主机数量engine*Nos	SC12E460.21CA1 , 1台
功率*转速power/rpm	340kW@2100rpm
齿轮箱型号*速比gear ratio	NICO , 2 : 1
试航日期trial date	2019年6月



CASE 3



船舶用途Application	新加坡港港区载人Singapore passenger vessel
船舶吨位Tons (T)	16
船长*船宽*型深vessel L*W*D (m)	14*4*1.5
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	20节@2000RPM
船舶主机型号*主机数量engine*Nos	D683ZLCA9B , 两台
功率*转速power/rpm	259kW@2430RPM
齿轮箱型号*速比gear ratio	MV100A , 2 : 1
试航日期trial date	2019年6月



CASE 4



船舶用途Application	印度拖网渔船India trawler
船舶吨位Tons (T)	40
船长*船宽*型深vessel L*W*D (m)	25*7*3
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	5节@1000RPM
船舶主机型号*主机数量engine*Nos	SC15G500.1CA2 , 一台
功率*转速power/rpm	330kW@1800RPM
齿轮箱型号*速比gear ratio	FD135 , 4 : 1
试航日期trial date	2017年6月



CASE 5



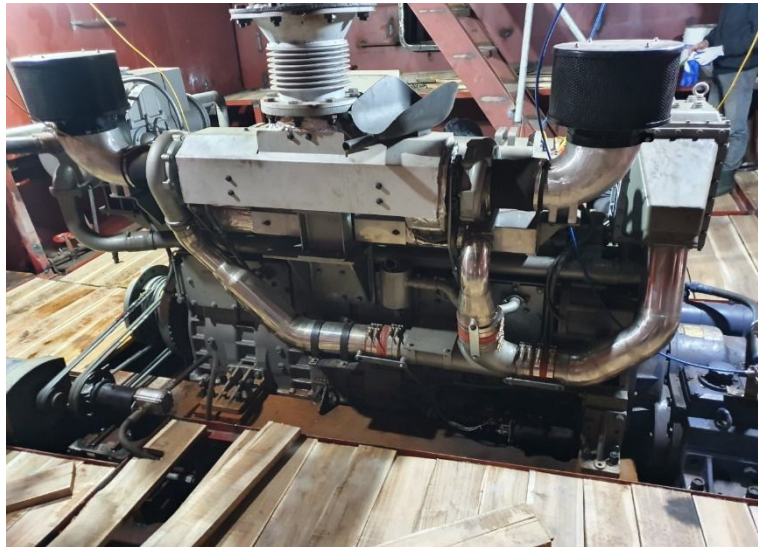
船舶用途Application	阿联酋渔船UAE Fishery
船舶吨位Tons (T)	30
船长*船宽*型深vessel L*W*D (m)	21*6*2.5
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	7节@1000RPM
船舶主机型号*主机数量engine*Nos	SC12E460.21CA1 , 一台
功率*转速power/rpm	340kW@2100RPM
齿轮箱型号*速比gear ratio	DMT 280H , 4 : 1
试航日期trial date	2020年3月



CASE 6



船舶用途Application	越南货船Vietnam Cargo ship
船舶吨位Tons (T)	2000
船长*船宽*型深vessel L*W*D (m)	120*30*4
工作航速work speed (Kt) /柴油机转速engine speed (rpm)	8节@1000RPM
船舶主机型号*主机数量engine*Nos	SC33W765CA2 , 1台
功率*转速power/rpm	561kW@1500RPM
齿轮箱型号*速比gear ratio	FADA J600A , 3.5 : 1
试航日期trial date	2020年6月





SDEC History and place

SDEC Products For Marine

SDEC Capability and Infrastructure

SDEC Network & Support

Возможности и системы исследований и разработок SDEC 上柴公司研发能力及体系



30

Процесс GPDP включает

около 30 подпроцессов планирования, технологии, производства, качества, финансов и маркетинга.
GPDP流程包含规划、技术、制造、质量、财务、市场等各类子流程近30项。

**Исследования, разработки и производство двигателей на основе концепций и стандартов автомобилей.
以乘用车理念和标准，研发制造发动机**

Globe Power Development Process На основе процесса разработки продукции для автомобилей SAIC Motor

Globe Power Development Process源自上汽集团乘用车的产品开发流程



1st Первая партия национальных корпоративных технологических центров.首批国家级企业技术中心。

3+2 3 базы НИОКР (детали, пилотные испытания, физико-химические), 2 испытательных цеха.

3个研发基地（零部件、中试、理化），2个试验车间。

SDEC Production machines



Auto glue Robot by KUKA Germany
德国**KUKA**，自动涂胶机器人



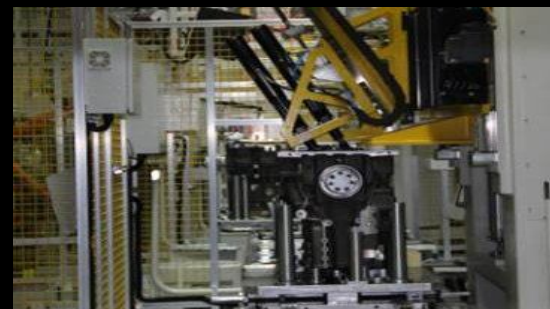
Full time data uplink system
全时数据上行系统



Cylinder machine by MAKINO Japan
日本**MAKINO**，气缸加工中心



Block Machine by HELLER Germany
德国**HELLER**，机体加工中心



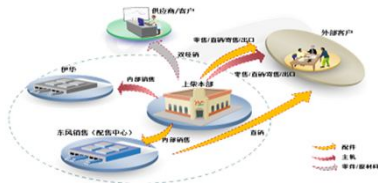
Torque Robot by Atlas Sweden
瑞典**Atlas**，扭矩机器人

SDEC SAP System



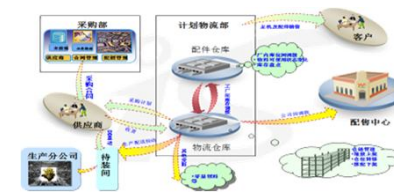
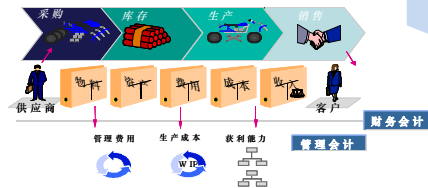
Modularity
模块化

Improve operations and management efficiency
提升运营与管理效率



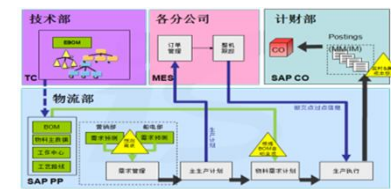
Agility
敏捷化

High quality, high efficiency Supplier system
高品质、高效率 供应商体系



Lean management
精益化

Advanced equipment
First-class management
World-class lean production units
设备先进、管理一流的 世界级精益生产单元



Flexibility
柔性化

Engine 300,000 sets
Core components 200,000 sets
发动机30万台套
核心零部件20万套

R&D Ability



首批国家级企业技术中心，
承担多个国家科技项目
**The earliest Euro-level
enterprise technical center,
undertaking several
national program**



**21个研发试验台架，测试
功率、噪音、排放等
21 no.s R&D benches on
power, noise, emission, etc.**



**4000米高原测试
4000m Altitude testing**



**50度高温测试
50°C Heat balance**



**-40 °C 高寒测试
-40°C Cold start**



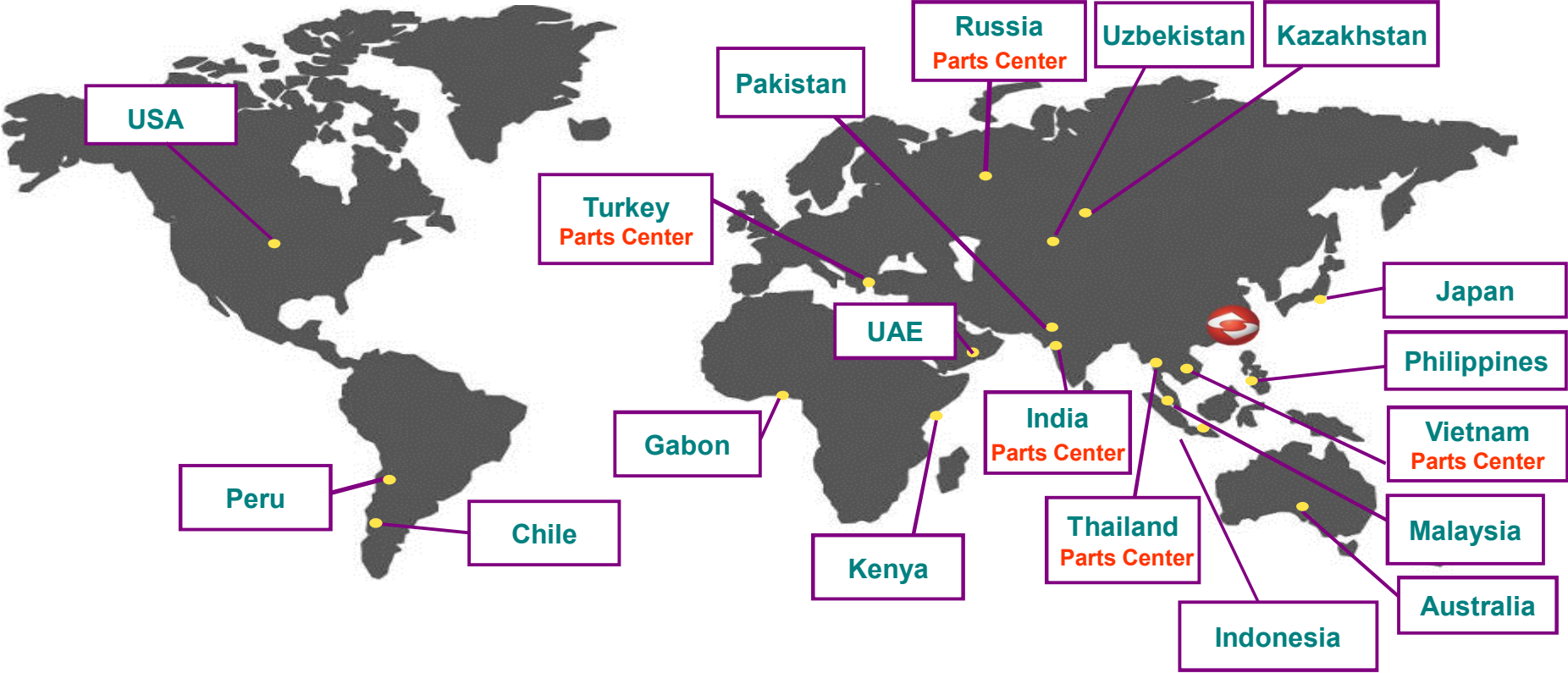
SDEC History and place

SDEC Products For Marine

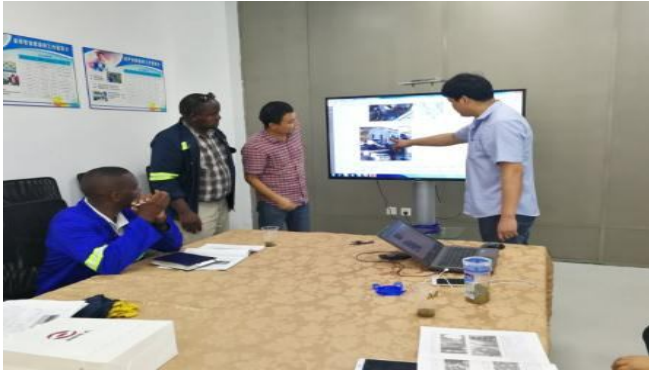
SDEC Capability and Infrastructure

SDEC Network & Support

Global Sales and Service Network



Training Center



Combining theory and Practice!

THANK YOU!

SDEC High quality, Diversity solution, Engines
上柴为您提供高品质及个性化定制的动力解决方案

