Shantui Bulldozers
Introduction
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2. R & D Ability
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Bulldozer Product Series

900HP
- 520 HP
- 420 HP
- 320 HP
- 230 HP
- 220 HP
- 180 HP
- 170 HP
- 160 HP
- 130 HP
- 110 HP
- 100 HP

80 HP
- SD08YE

15 Power Options
120 Models

SD90-5

• Standard Model
• Swamp Model
• Desert Model
• Power Plant Model
• Landfill Model
• Highland Model
• Rock Model
• Forest Model
• Long Track Model
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**Note:**
- **Hydrodynamic drive**
- **Fully hydraulic drive**
- **Mechanical drive**
# Product Spectrum Comparison of Major Bulldozer Manufacturers

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|        | D31EX-22 | D31EX-22 | D39EX-22 | D51EX-22 | D61EX-13 | D65EX-17 | D65EX-15 | D85AX-5 | D85AX-6 | D85AX-6 | D85AX-6 | D85AX-6 | D85AX-6 | D85AX-6 |
|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 功率   | 3940      | 8190      | 8300      | 9450      | 12720     | 16990     | 20120     | 28100    | 39500    | 51530    | 71640    | 108390   | 15260    |

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**图例说明**
- **电传动**
- **静压传动**
- **液力传动**
- **机械传动**
1. Bulldozer Product Type
2. R & D Ability
3. Manufacturing Ability
4. Product Quality and Reliability
5. Advanced Products
So as to further the company’s overall development, Shantui established the R&D Center, allowing for greater focus in the areas of product development, key technology research, trial manufacturing and testing. The R&D center boasts advanced innovation platforms such as a national-level technology center, provincial-level construction technology center, and a post-doctoral research station.
The R&D Center utilizes advanced R&D means. Among those means are 3-D imaging and simulation software, and a PDM data management system, which integrates the development, design, processing, and manufacturing stages. Shantui’s project management and collaborative design improve product development speed and quality.
The lab specializes in electrical intelligence, such as the electrical system simulation testing of complete machines, as well as remote monitoring, controlling, diagnosing faults, and operation. Moreover, the lab can also be used for parts testing and simulating different environments such as high and low temperatures, salty atmosphere, dust, and vibration.
The hydraulic lab can be used to simulate various conditions in which construction machinery will operate. The testing is controlled by computers to test the static and dynamic characteristics of the hydraulic components and hydraulic systems. The lab is a platform where the hydraulic components and hydraulic systems are researched and developed, enabling a digital man-machine interface with the hydraulic system development.
The product analysis lab can be used for testing and analyzing machine performance, reverse engineering and modeling, detecting and analyzing faults in the design components, and tracking and analyzing new technologies.
The machine verification lab is used to verify the performance of new products, detecting product faults early and analyzing the cause in the design source so as to ensure the quality development of new products, and to accelerate new product development speed. Currently the rollout time of new Shantui bulldozers has been reduced sixty percent.
1. Bulldozer Product Type
2. R & D Ability
3. Manufacturing Ability
4. Product Quality and Reliability
5. Advanced products
Bulldozer Manufacturing Base
--- Shantui International Business Park (Jining)

Total Area: 800,000M²
Building Area: 520,000M²

Capacity: Annual output of 15,000 bulldozers (First in the world)
Assembly Lines (Dual-line)
Clean and Orderly **Production Site**
Powerful Production Capacity of Core Components

--- Undercarriage Parts

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<td>260</td>
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101mm Pitch

Matching Brands

KOMATSU
VOLVO
BAUER
Atlas Copco

Annual Output: Track Assembly: **180,000 units**, Wheel Assembly: **1,400,000 units**.
The undercarriage department is a member of Shantui Construction Machinery Co., LTD, and it is an enterprise which specializes in the development, production, and marketing of construction machinery parts. It boasts three manufacturing plants: Forging, track, and wheels. The products are suitable for hydraulic excavators from 3.5 tons to 80 tons, bulldozers from 20HP to 520HP, as well as other crawler products equipped with tracks and wheels. The undercarriage department has passed ISO9001-1994 Quality System Certification and passed the new ISO9001-2000 Quality System Certification in 2003. The department also passed ISO4001 Environment System Certification in 2006 and National First-Class Safety Quality Standardization Certification in 2007.
In the domestic undercarriage production field, 24 years of production experience and specialized technology helps Shantui not only get recognition from top domestic manufacturers but also from world famous top brands. The track line rough of the forging plant has passed the certification of Komatsu, Hitachi, and Kobelco.
The track and track link assembly products have certification from Volvo, Sandvik, Atlas-Copco and Bauer.
Undercarriage Department——Wheel Factory

- The wheel products of the wheel factory have certification from Komatsu, IHISCE, Takeuchi and Kubota.

Output of wheel factory: 1,400,000 units per year
Shantui seeks to become a first-class international undercarriage parts supplier with advanced core technology.
Core Parts Manufacturing Ability — Transmission Parts

Transmission Parts Series

YJ506

- 21 Torque Converter Models
- 33 Transmission Models

YJH265

Matching Products:
- Bulldozers
- Wheel Loaders
- Vibratory Rollers
- Forklifts
- Petrol and Mining Machinery

Matching Brands

SHANTUI  LIUGONG  XCMG  LOVOL  DOOSAN

Annual output:
- Torque converter assembly: 160,000 units
- Transmission assembly: 50,000 units
The Transmission Department is a specialized plant that manufactures transmission components for Shantui, as well as an important hydrodynamic components manufacturing base in China. The leading products include: torque converters, transmissions, output units, and reducers, which match transmission components of bulldozers, wheel loaders, vibratory rollers, forklifts, concrete machines, petrol machines, and mining machines. The annual output of torque converters is 160000 units, transmissions is 50000 units, bulldozer output units is 9000 units, reducers is 3000 units, drive axles is 20000 units, iron casting units is 6000 tons, aluminum casting units is 5000 ton, with annual output value 200 million RMB.
The Transmission Department possesses the capability of casting, processing and assembling in three specialized plants. The department has introduced an advanced international casting and molding line and a teeming line, which has improved the level of automation. Also utilized is advanced CNC equipment and a “Lean Production” method, which integrates units processing and cluster production strategy to establish a fully sealed transmission and torque converter assembly line, which improves the quality and cleanliness level of the torque converter and transmission.
Transmission Department——Assembly Line

Before arriving at the assembly process, all parts will pass through a process of rough washing, fine purification, bleaching and drying via a multifunctional washing line. A three-tier filtering process will also ensure the cleanliness of all required parts. Automatic and semi-automatic fully sealed assembly lines automate the pressing mounting and turnover. The multi-axle torque tightening machine not only improves work efficiency and reduces the fatigue of workers, but also ensures assembly quality. The unit cluster’s arranged release testing platform enables the automatic collection of oil temperature, pressure, and flow rate. The complete system also boasts a five-tier filter system, which further ensures the cleanliness of the converter and transmission assembly. The water-spinning multifunctional coating line, which integrates cleaning, primer coating, finishing coating, leveling and drying, ensures the quality appearance of the products.
The processing plant has the largest number of machine tools on the Shantui campus. The plant integrates advanced processing equipment such as processing centers and totally enclosed CNC machines. All processing equipment is distributed to various areas depending on the processing orders. Every CNC machine has a corresponding position marker, making maintenance and service easy and convenient. The process utilizes a conveyor line to deliver the manufactured goods, which reduces the cost of station equipment, transport forklifts, and improved field management.
Transmission Department——Casting Plant

The casting plant features aluminum casting and iron casting divisions. The aluminum casting plant utilizes one intermediate frequency melting furnace, two gas melting furnaces, two gravity pouring units, three low pressure casting machines, and ten different core shooting machines, with an annual output of aluminum wheels of 300,000 units. The plant boasts world-class low pressure casting equipment, further improving casting quality and accuracy. The iron casting plant uses two furan resin sand production lines, two intermediate frequency melting furnaces, one semi-automatic pouring machine, and two large sand preparation systems, with an annual output volume of 8000 tons. The iron casting plant operates two world-class molding lines with automatic mould drawing technology and highly accurate automatic mould closing technology, which greatly improves accuracy, appearance, and quality. The intermediate frequency melting furnace uses a spectrum analyzer to greatly reduce the number of internal defects, and ensures the internal quality of casting parts.
The Shantui Transmission Department has continuously improved its R&D ability and capacity. A torque converter and engine matching software based on a 3D R&D design platform has been independently developed, and advanced R&D equipment such as rapid molding instrument and a precise measurement projector has been integrated to enable fault analysis and fatigue strength verification, making Shantui’s product reliability much greater than competitors. After thousands of tests with precise detection equipment, the angle and pitch of the converter fan blade has been accurately redesigned, greatly improving transmission efficiency. Currently, the transmission efficiency can reach more than 90%, reaching a world-class level.
Transmission Department—— Technology R&D Ability

Finite Element Analysis of Key Parts
Advanced Mold Development Tool
Greatly Shortens the Development Period
Core Parts Manufacturing Ability—Large Structural Parts
Material Department

The Material Department specializes in cutting plate blanking, polymer processing, and the melting of construction machinery products, and is a professional cutting plate and structural parts supplier. The Material Department is split into two plants: The first plant is located in Shantui International Business Park with a building area 28904 m², and a plant building area of 18811 m². Its fixed assets total 50.2 million RMB, the total annual amount of material cut is 90,000 tons, and possesses welding parts totaling 10,000 tons. The second plant is located in Shantui Heavy Industry Park, with plant area 31759 m², a total investment of 130 million RMB, large equipment total of 44 units, an annual cutting plate blanking total of 110,000 tons, and welding parts total of 20,000 tons.
The Material Department boasts advanced equipment: 4 laser cutting machines, 13 precision plasma cutting machines, 15 CNC flame cutting machines, 14 groove cutting robots, 4 welding robots, 14 edge milling machines, 6 CNC bending machines, 5 roller machines, 4 press machines, 5 multi-roller leveling machines, 2 milling planers, 1 planer, 3 horizontal boring machines, and 2 vertical machine centers.
Strong Core Components Manufacturing Ability——Cabin

Matching Products:

- Bulldozer
- Vibratory Roller
- Wheel Loader
- Excavator
Shandong Cab Co. Ltd (SDC) is a holding subsidiary of Shantui, and is engaged in the R&D, manufacturing, and sales of cabin assemblies for construction machinery, such as bulldozers, vibratory rollers, excavators and wheel loaders. SDC integrates the technology and management methods of Komatsu, Daikyo, and Takahash. SDC boasts an annual production volume of 10000 units and an annual output value of 600 million RMB.
Shandong Cab Co. Ltd—— Manufacturing Ability

- SDC features advanced manufacturing equipment and processes, such as a large laser cutting machine, welding robots, an electrophoresis coating line, and a power coating line. Also utilized is inspection equipment such as a three-coordinate measuring machine, color difference meter, and an electrical conductivity degree meter. These advanced pieces of equipment ensure the high quality of the cabins supplied to machine manufacturers.
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2、R & D Ability

3、Manufacturing Ability

4、Product Quality and Reliability

5、Advanced Products
## 1G: First Rule
- Biggest rule
- First rule
- Best rule

### Manufacturing Process Rules and Procedures
- 1G-1 new product development quality control system node
- 1G-2 manufacturing process quality control documents
- 1G-3 quality visualization management
- 1G-4 modification management
- 1G-5 Trustworthy quality group
- 1G-6 Process-oriented electronic documentation system
- 1G-7 Document filing system

### Quality Improvement Control Procedures
- 2G-1 Important product management
- 2G-2 Important item management
- 2G-3 QC Activities management
- 2G-4 Quality meeting system
- 2G-5 Quality statistical information system

### Production-Oriented Procurement Control Procedures
- 3G-1 Quality supervision management
- 3G-2 Comprehensive evaluation
- 3G-3 Changes/process guarantee
- 3G-4 Manufacturing preparation operations
- 3G-5 Supplier support activities
- 3G-6 Product modification supervision

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## 2G: Improvement
- From internal to external
- Complete personnel improvement
- Continuous improvement
- Source improvement
- From external to internal

## 3G: Win-Win Mutual Trust
- Ensure profits
- Integrate management
- Orderly competition
- Market-oriented
- Long-term confidence
Shantui Quality Management System——Process Control

Seven Table of Quality Control

Operating Benchmark Book

Inspection Benchmark

QC Processing Chart

Quality Map

Work Instruction

Check Instruction

Processing Document

QC Document

Work Instruction

Check Instruction

Instruction Document
Shantui previously integrated and implemented Komatsu’s KES standards, and after 20 years of innovation and development, it has formed a complete enterprise standard of its own. The company operates in a standardized and systematic order, and provides products of high quality to the market.
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“PLUS” Product Series

SD13PLUS  SD16PLUS
SD22PLUS  SD32PLUS
Fully-Hydraulic Product Series

SD08YE  SD10YE  SD13YE
High Horsepower Products

SD42-3
Standard Bulldozer

Rated Power: **310KW@2000rpm**
Engine Model: **Cummins KTA19-C525**
Operating Weight: **53 tons**

SD52-5
Standard Bulldozer

Rated Power: **392KW@1800rpm**
Engine Model: **Cummins QSK19**
Operating weight: **67.5 tons**