SANY

SRT
Off Highway Truck Series
Product Introduction

Chapter 1

Sany Mining Equipment Company

Courtesy of Machine Market

Sany Mining Equipment Company

Company Introduction

Sany Mining Equipment Co., Ltd., located in Kunshan Sany industrial park, is one of the subsidiaries of Sany Group, its main products at present are mining trucks, including rigid dump trucks, electric drive dump trucks and articulated dump trucks (load capacity from 20 tons to 360 tons)

Courtesy of Machine.Market

Chapter 2

Product Introduction

Courtesy of Machine.Market

Sany Mining Truck Model

Rigid Truck Series	
Model	Load
SRT95	95tons
SRT55	55tons
SRT45	45tons
SRT33	33tons
.....	.....

Electric Truck Series	
Model	Load
SET360	360tons
SET280	280tons
SET230	230tons
SET180	180tons
.....	.....

Articulated Truck	
Model	Load
SAT40	40tons
SAT30	30tons
SAT25	25tons
SAT20	20tons
.....	.....

Rigid Truck Series

SRT=Sany Rigid Truck

SRT33、SRT45、SRT55、SRT95

Load Classification 33t/45t/55t/95t

SRT33

SRT45

SRT55

SRT95

SRT95

Electric Truck Series

SET=Sany Electric Truck

SET180、SET230、SET280、SET360

Load Classification 180t/230/280t/360t

SET230

Articulated Truck

SAT=Sany Articulated Truck

SAT20、SAT25、SAT30、SAT40

Load Classification 20t/25t/30t/40t

Chapter 3

SRT Series Technical Summary

Courtesy of Machine.Market

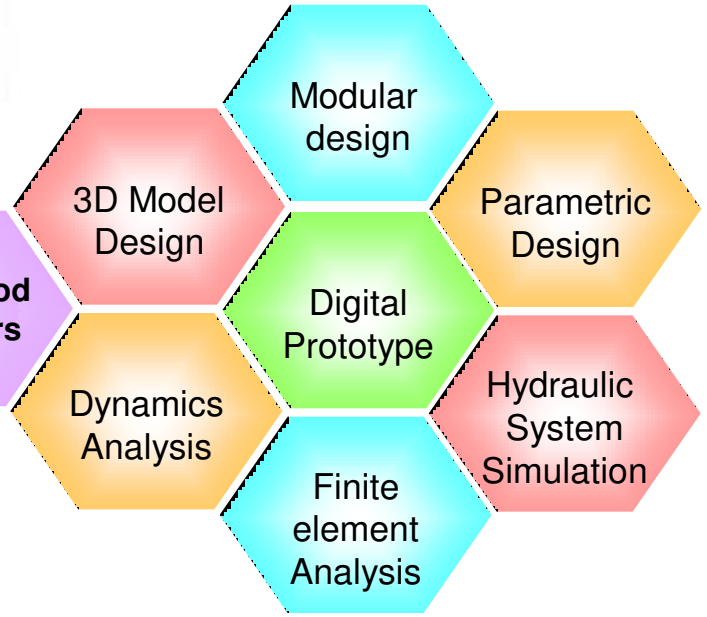
SRT Series Technical Summary

SRT mining dump truck is the first model in the series of Sany Mining Equipment. The launch of SRT95 mining truck had made a remarkable change from importation as SRT95 is the first domestic large-tonnage mining truck production in china.

Mining dump truck series products are the optimal design of integral vehicle body, configuration, and technical parameters. Components' designs have also well been dealt with. Such unique system of each type of the dump trucks has really shown its best performance in actual mining operation.

SRT Series Technical Summary

The advanced R & D design method ensure optimal vehicle parameters



High investment in specialized test equipment and the theoretical design ensure the reliability of vehicle performance and quality

Reliability Test	Reliability test of mining truck
Parameters Performance Test	Suspension cylinder, Electric, Rear axle, Brake test bench
Destructive test	Cab FOBS test, Cab vibration test , Oil tank vibration test

SRT33 Technical parameters compared with the same type of product

Manufactory Model	**SANY** SRT33	**TEREX** NHL 3305G	**CATERPILLAR** 770	**KOMATSU** HD325-6
Engine	Cummins M11-C350	Cummins M11-C350	CAT C15ACERT	KOMATSU AA6D140E-3
Transmission	Allison 4400ORS 5forward 1reverse	ZF 6HP602 6forward 1reverse	CAT 7forward 1reverse	KOMATSU 7forward 1reverse
Gross Power	261 kW (350 hp)	261 kW (350 hp)	381 kW (511 hp)	379 kW (508 hp)
Rated Load	33 t	32 t	36.3 t	36.5 t
Truck Weight	23.5 t	23.2 t	34.2 t	30 t
Load and Weight Ratio	1.41	1.38	1.06	1.22
Heaped 2:1(SAE)	21.5 m^3	21.1 m^3	25.9 m^3	24 m^3
Grade ability	30%	30%	30%	35%
Truck Specification	7986×3445×4035 mm	7950×3350×3865 mm	9020×3932×4195 mm	8365×4525×4150 mm
Minimum Ground Clearance	410 mm	450 mm	508 mm	500 mm
Maximum Speed	54 km/h	53 km/h	74 km/h	70 km/h
Raising/Down time	11/8	14/ 9	8.1/14.7	10/10
Minimum Turning Radius	7400 mm	8000 mm	9050 mm	7200 mm

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SANY SRT33

CAT 770

KOMATSU HD325

TEREX 3305G

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三一矿机有限公司

Courtesy of Machine.Market

SRT55C Technical parameters compared with the same type of product

Manufactory Model	**SANY** SRT55C	**TEREX** NHL TR60	**CATERPILLAR** 773F	**KOMATSU** HD465
Engine	Cummins QSK19-C700	Cummins QSK19-C700	CAT C27 Engine ACERT	KOMATSU SAA6D170E-3
Transmission	Allison H6610AR 6forward 2reverse	Allison H6610AR 6forward 2reverse	CAT 7forward 1reverse	KOMATSU 7forward 1reverse
Gross Power	522 kW (700hp)	522 kW (700hp)	552 kW (740 hp)	551 kW (739 hp)
Rated Load	55 t	54.4 t	54.4 t	55 t
Truck Weight	40.8 t	41.2 t	44.6 t	42.8 t
Load and Weight Ratio	1.35	1.32	1.22	1.29
Heaped 2:1(SAE)	35 m^3	35 m^3	35.6 m^3	34.2 m^3
Grade ability	30%	30%	30%	30%
Truck Specification	9300×4270×4200 mm	9130×4980×4820 mm	10334×5425×4435 mm	9355×4170×4400 mm
Minimum Ground Clearance	635 mm	600 mm	675 mm	600 mm
Maximum Speed	61 km/h	57 km/h	67 km/h	70 km/h
Raising/Down time	12.5/10	13/9	9.5/12.5	13/14
Minimum Turning Radius	9540 mm	9540 mm	11750 mm	8500 mm

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SANY SRT55C

CAT 773F

KOMATSU HD465

TEREX TR60

Courtesy of Machine.Market

SRT95 Technical parameters compared with the same type of product

Manufactory Model	SANY SRT95	HITACHI EH1700	CATERPILLAR 777F	KOMATSU HD785-7
Engine	Cummins QST30-C1050	MTU Detroit Diesel 16V Series 2000	CAT C32 Engine ACERT	KOMATSU SAA12V140E-3
Transmission	Allison H8610AR 6forward 1reverse	Allison H8610A 6Forward 1 reverse	CAT 7forwards 1reverse	KOMATSU 7forward 2reverse
Gross Power	783KW(1050hp)	783kW(1050hp)	758kw(1016hp)	895kw(1200hp)
Rated Load	95t	95.2 t	90.7t	91t
Truck Weight	64.5t	68.1 t	67.2t	75t
Load and Weight Ratio	1.47	1.39	1.35	1.21
Heaped 2:1(SAE)	60m^3	60.4m^3	60.2m^3	60m^3
Grade ability	30%		30%	30%
Truck Specification	10100×5460×5000mm	10540x6250x1570 mm	10535×6494×5170mm	10490×5210×5050mm
Minimum Ground Clearance	760mm	680 mm	880mm	760mm
Maximum Speed	48km/h	55.7 km/h	64km/h	65km/h
Raising/Down time	15.7/15.4	12.8/15.5	15/13	13/14
Minimum Turning Radius	11500mm	10900 mm	12650mm	10100mm

SRT95 Optional Equipment

- Body Wear Plate
- Weighting System Equipped with Truck
- Automatical Grease System
- Exhaust Muffler Silencer, Fulltime
- Fire Extinguisher

SRT95 Fuel Consumption Measurement Report

Released by China National Construction Machinery Quality Supervision and Inspection Center

Test Item	Test Result / L	Remarks
Fuel consumption (L/t*km)	0.0997	Automatic driving

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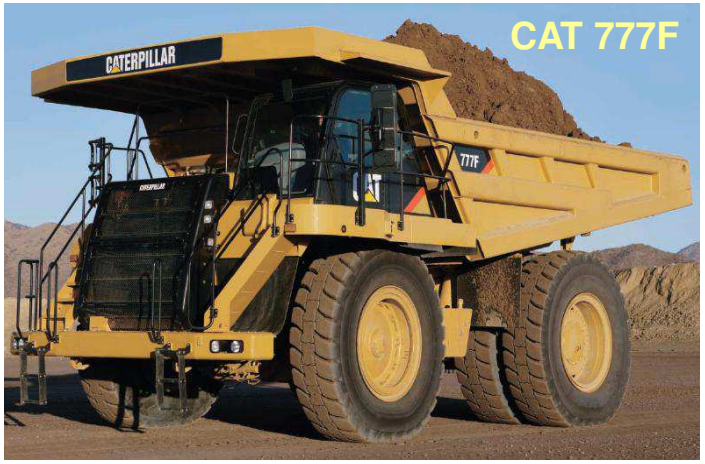
SANY SRT95

CAT 777F



KOMATSU HD785-7

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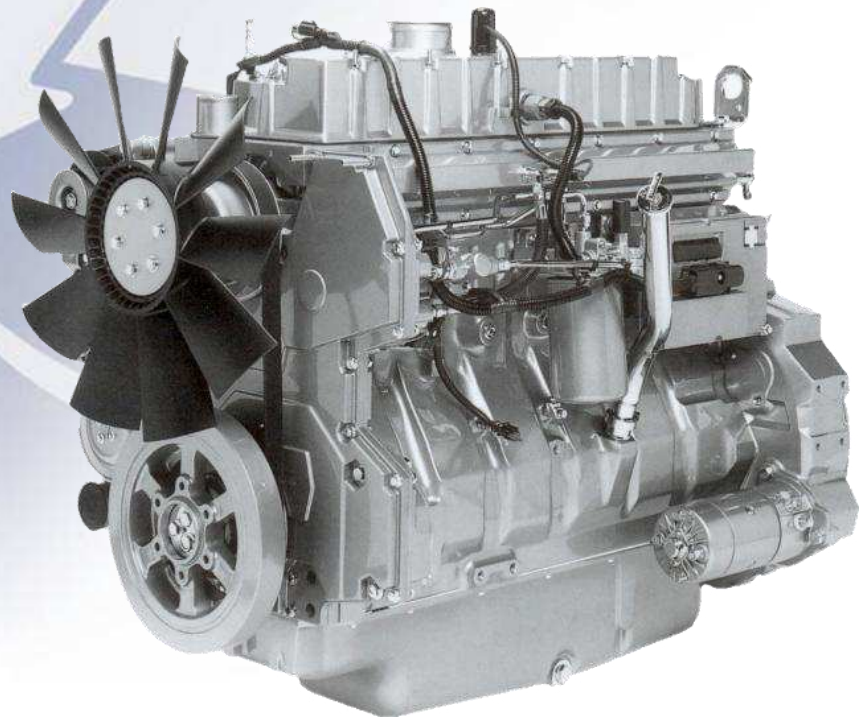
Engine

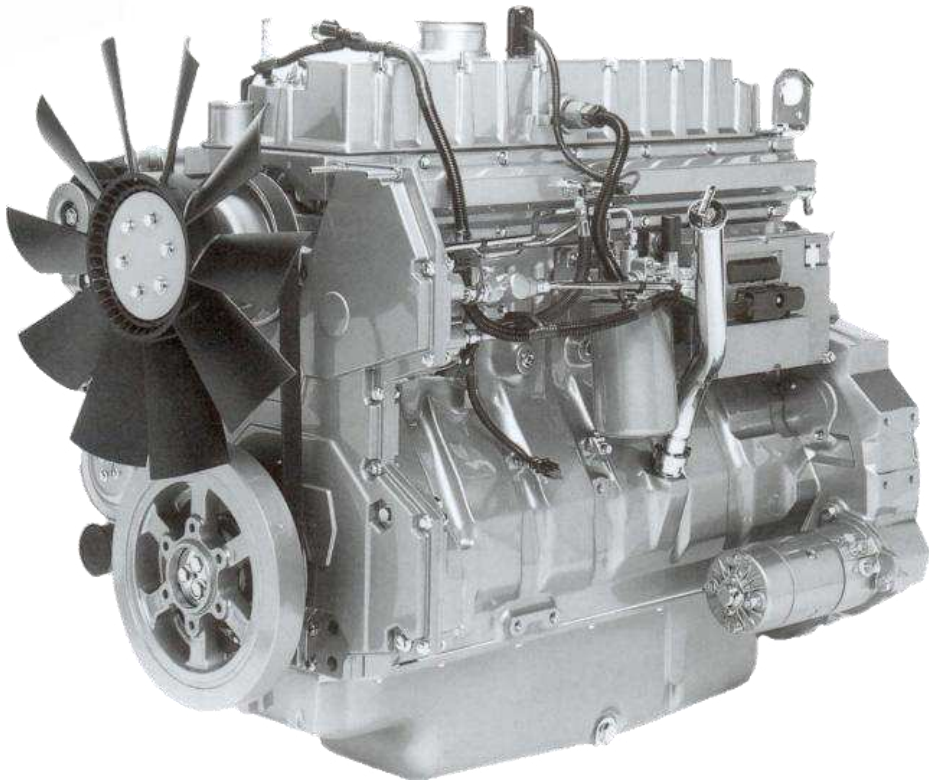
The engine can be real-time monitored by using electronically controlled Cummins engine and efficient electronic control device. It is powerful, can adapt to harsh mining condition.



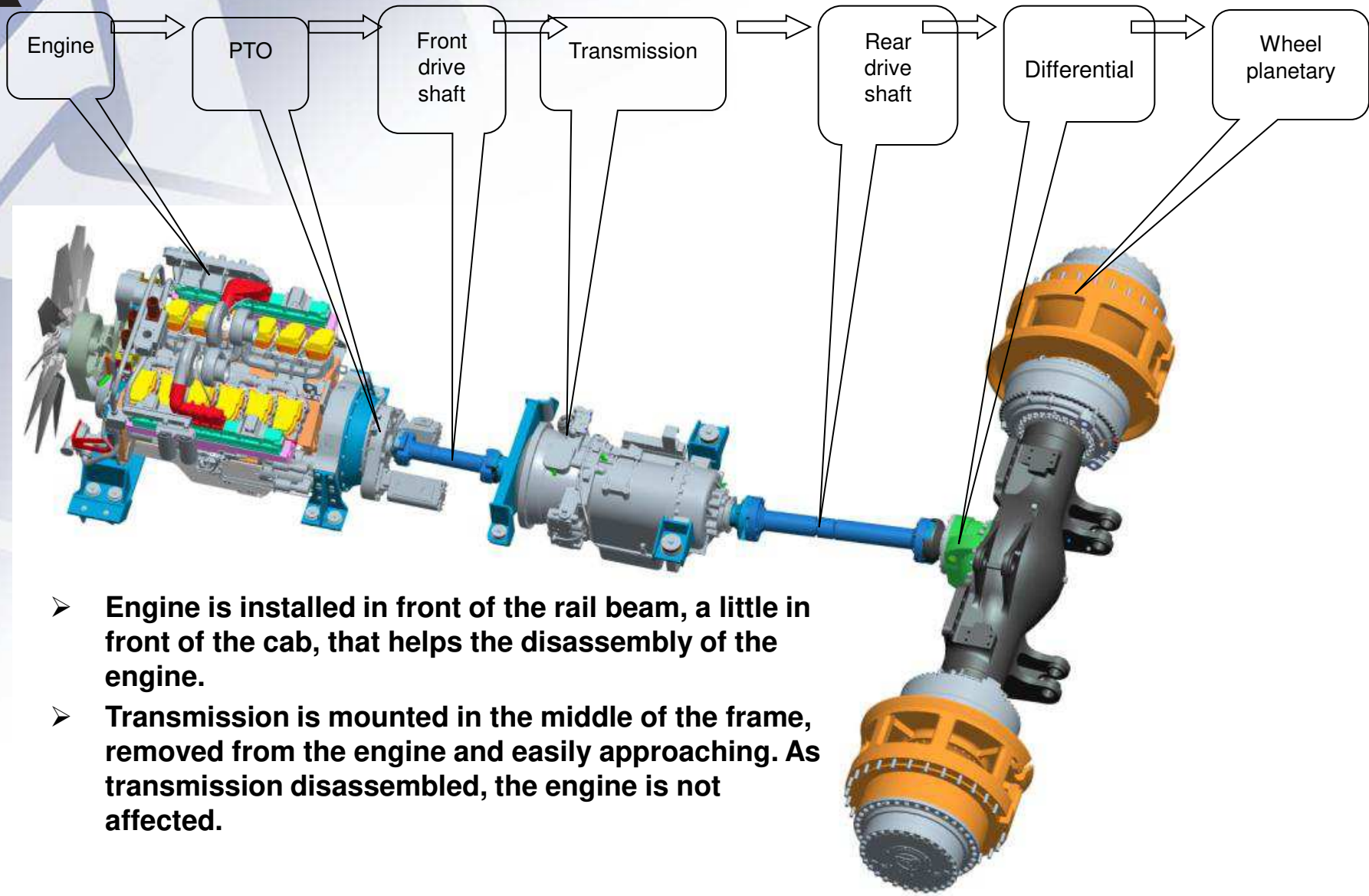
Vehicle type	SRT33	SRT55C	SRT95
Model	Cummins M11-C350	Cummins QSK19-C700	Cummins QST30-C1050
Form	4-stroke, water cool, Turbocharged / intercooled	4-stroke, water cool, Turbine Booster	4-stroke, water cool, Turbine Booster
Gross Power（2100rpm）	261kW(350 hp)	522kW(700 hp)	783kW(1050 hp)
Net Power（2100rpm）	238 kW(319 hp)	481kW(645 hp)	728kW (976 hp)
Maximum torque	1559 Nm (1300 rpm)	3118 Nm (1500 rpm)	4629 Nm (1300 rpm)
Number of cylinders / Forms	6 cylinders/line	6cylinders/line	12cylinders/V Form
Displacement	10.8 L	18.9L	30.5L
Emission standards	Tire 2	Tire 2	Tire 2

Power System

- America Cummins QST30-C1050
- V12, Turbocharger, water-cool, EFI engine
- Gross Power 783KW (1050hp)
- Maximum torque 4629Nm
- Engine operating conditions can be monitored real-time by using efficient electronic control device.
- Emission standards ： Tire 2



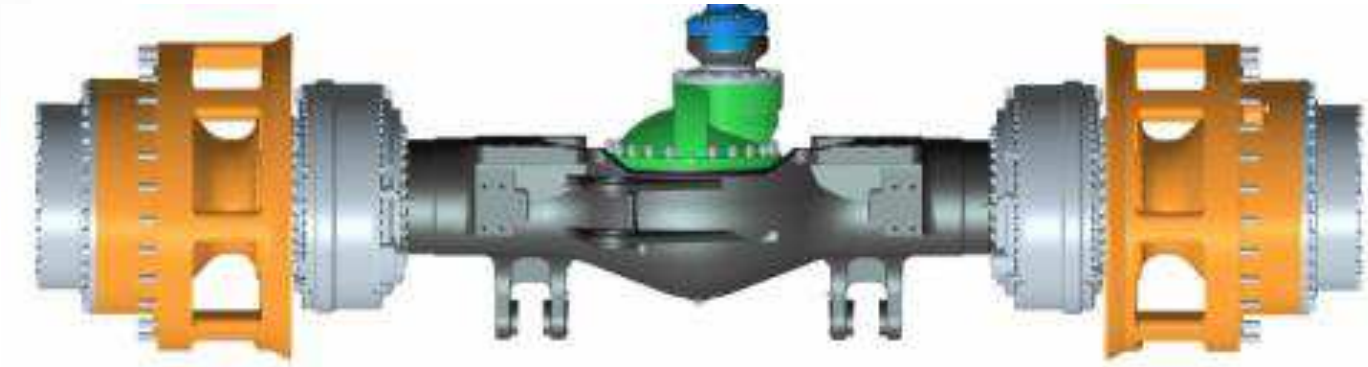
Power, Transmission layout



- **Engine is installed in front of the rail beam, a little in front of the cab, that helps the disassembly of the engine.**
- **Transmission is mounted in the middle of the frame, removed from the engine and easily approaching. As transmission disassembled, the engine is not affected.**

Rear Axle Assembly

- Full floating axle
- With a spiral bevel gear final drive and planetary wheel reduction.
- Large transmission ratio design with overload driving capability
- High-strength alloy steel banjo axle casing, interference fit combined with welded connection structure with a good impact resistance
- Wheel drive and planetary Ratio 13.75:1
- Differential Ratio 2.16:1
- Total Reduction Ratio 29.70:1

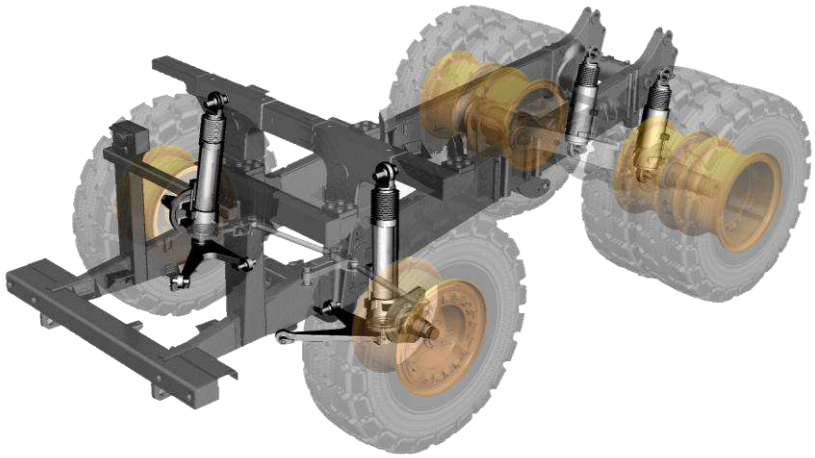


Tires

- **27.00-49/(48PR) Tire Byres**
- **Tubeless**
- **E-4 Deep pattern standard OTR tire**
- **Wear-resistance, puncture resistance, more suitable for use in domestic road**

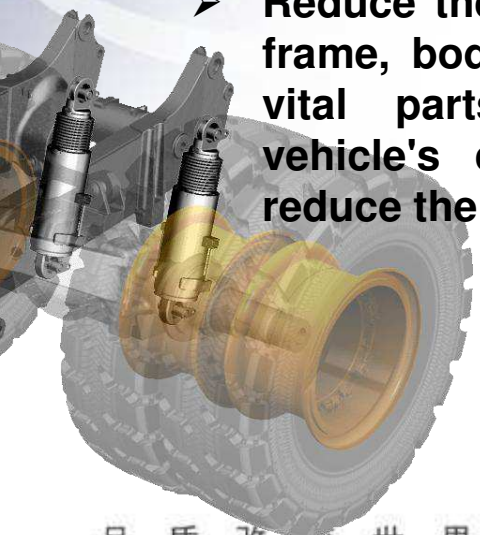
Suspension

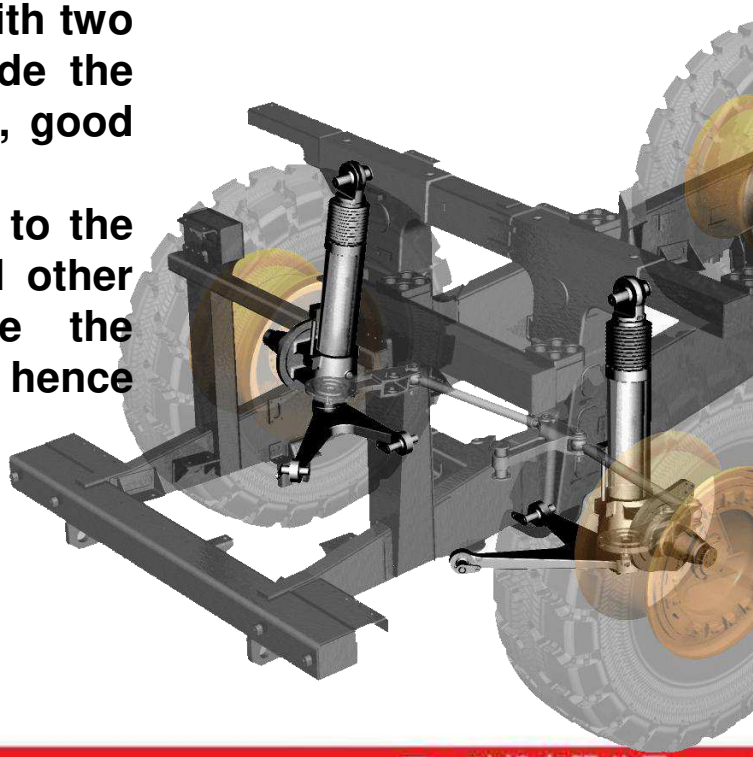
- The front suspension uses McPherson independent suspension mode.
- A-frame rear suspension with lateral stabilizing rod + non-independent suspension mode.
- Optimized design of double disconnected trapezoidal steering mechanism makes the movement of the truck wheels more coordinated and significantly improve the performance of the vehicle.
- According to the advantages of the structure, when SRT95 compared with other domestic models, significantly reducing the role of the lateral force on the suspension cylinder, greatly improving the suspension cylinder life.



Suspension Cylinders

- **The latest empty-full load with auto adaptive patented technology.**
- **Empty-full load with auto adaptive patented technology is great to solve the oil and gas suspension in two different condition- the empty load and full load mining truck. The truck with two different operating conditions would provide the optimal flexibility / damping characteristics, good cushioning, damping capacity.**
- **Reduce the impact and shock acceleration to the frame, body, front and rear axles, cab and other vital parts would significantly enhance the vehicle's carrying capacity and lifetime hence reduce the chance of failure.**

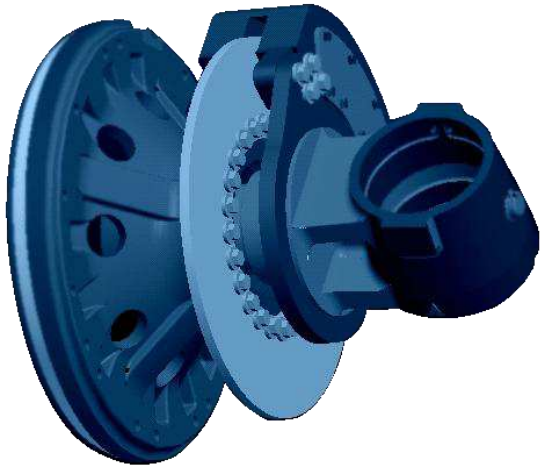


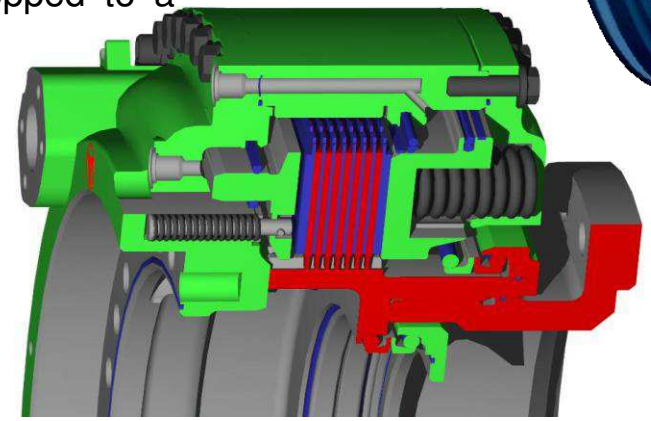


Brake System

- Power – the piston pump driven by PTO engine provides power for the braking and steering system.
- Nitrogen / oil accumulator - stored energy, provides emergency brake.
- Service brake - hydraulic brake control system.
- Parking brake - spring applied, hydraulic release.
- Retarder brake – rear disc brake and hydraulic transmission retarder implementation.
- Emergency brake - front and rear wheel are activated at the same time.
- Rocker switch for controlling solenoid valves is used to provide the parking brake.
- Automatically applies when engine is off and when the parking brake system pressure dropped to a predetermined value.
- Use foot pedal to apply for the brake.

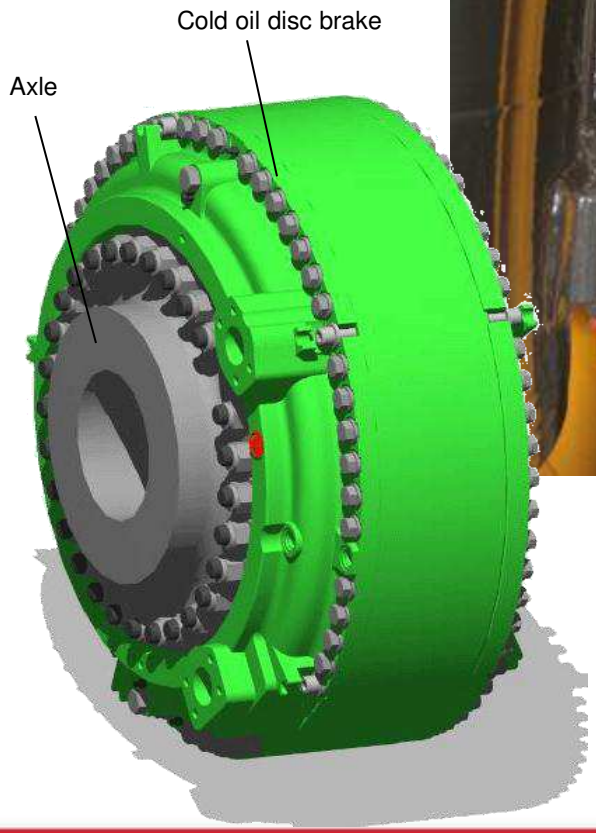
Front and rear double-circuit hydraulic break systems are independent, front-wheel dry-disc, rear brakes oil-cool, dust & water resistance, greatly reducing maintenance time.





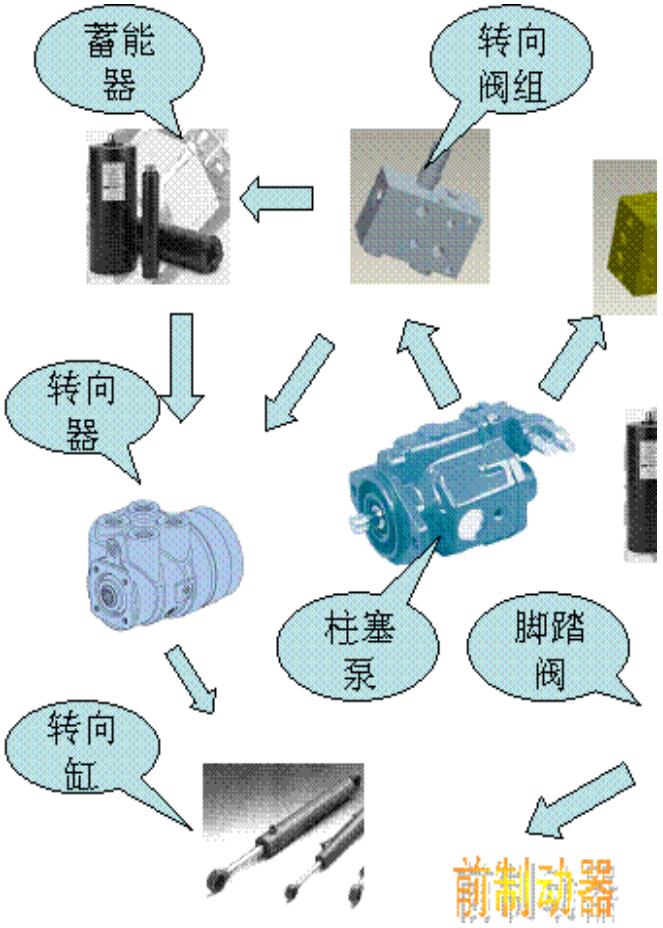
Brake system - oil cold disc brake

SRT95 rear break is the oil cold disc brake system.
Features are as follows：
Basically maintenance-free.
➢With service brake, parking brake, emergency brake and retardation function
➢Automatic parking break applied when hydraulic system pressure dropped to the predetermined level.



Steering System

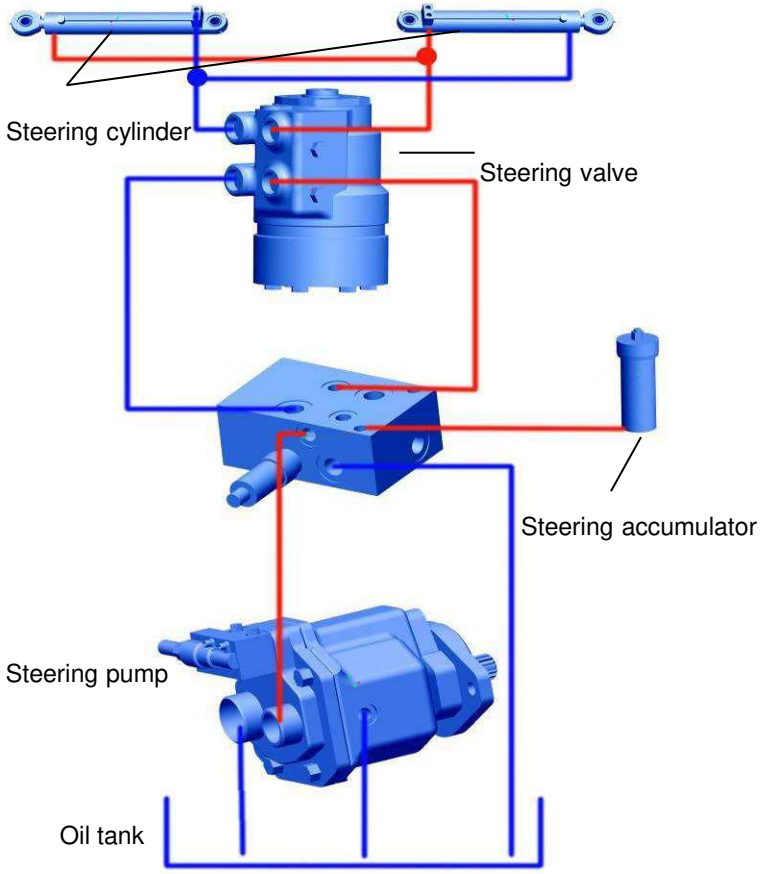
- Normal-closed steering valve
- Accumulator provides a stable steering pressure.
- Pressure is supplement by variable displacement piston pump
- Independent hydraulic system
- Double-acting steering cylinder
- Double disconnected trapezoidal steering
- McPherson suspension and steering with optimal institutional design, to ensure optimal vehicle motion characteristics
- Maximum steering wheel angle 40° ,which is higher than other trucks locally and oversea.
- Vehicle steering performance standard ISO 5010, SAE J1473.

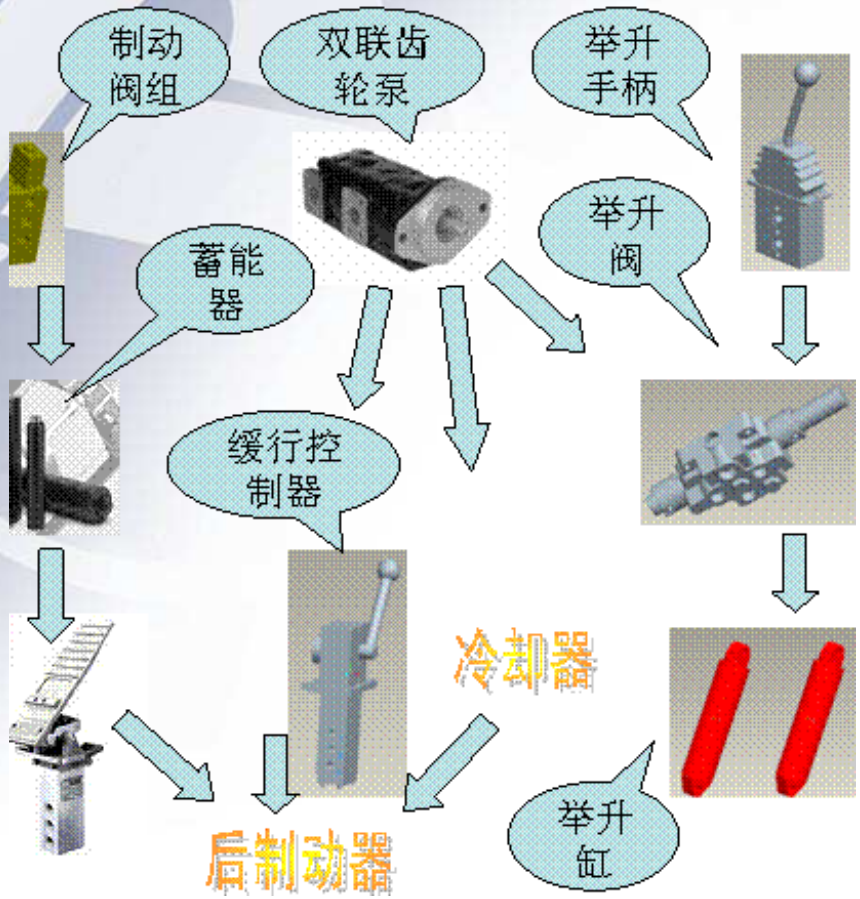


Steering System

- Independent hydraulic steering system with close center steering valve, accumulator and pressure compensated variable displacement piston pump, double acting steering cylinder.
- Maximum steering angle is 40°, higher than other vehicles of China and abroad
- Constant pressure systems configuration, whatever engine speed is high or low, it can provide the quickest steering response, ensure the vehicle handling performance.
- Even if the engine is off, the accumulator will still provide two shift cycles emergency turn.
- Steering performance matches ISO 5010, SAE J1473 standard.

Steering system diagram



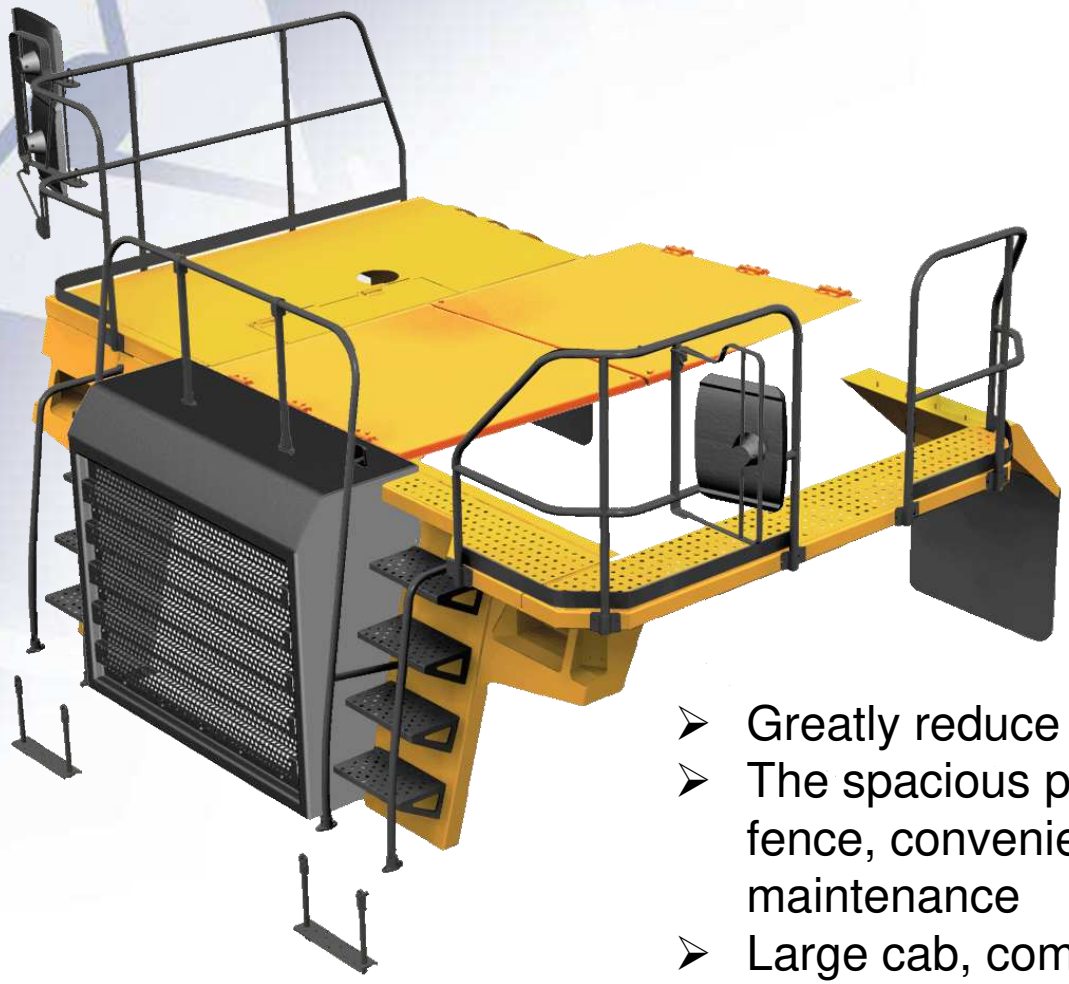


Body hydraulic System

- Independent hydraulic system
- Double gear pump drive
- Hydraulic pilot control
- Raise, down, hold, float
- Two hoist cylinders with two-stage, double-acting in the second stage are mounted inside the frame rails.
- Raising /Down Time: 16/15 seconds

Body Hydraulic System

Models	SRT33	SRT55C	SRT95
Raise Time/s	10 s	13 s	16 s
Down Time/s	8 s	11 s	15 s

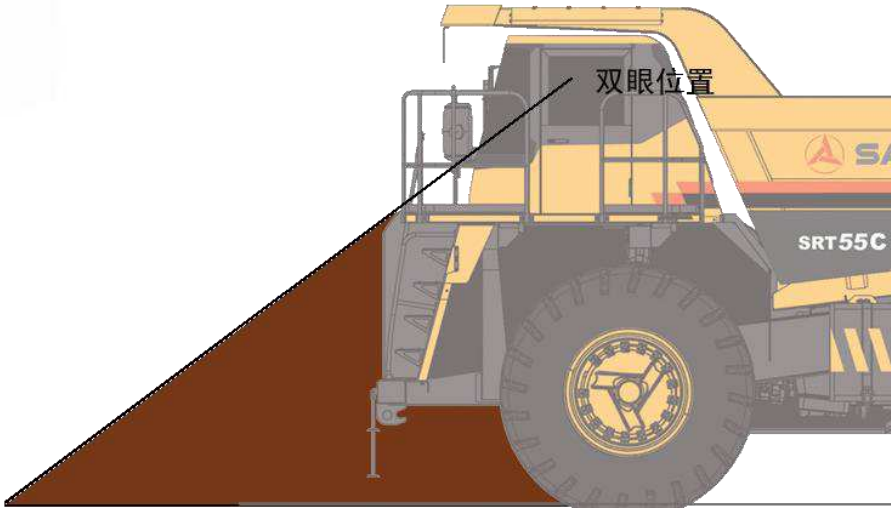


Platform

- Greatly reduce blind area.
- The spacious platform, surrounded by a fence, convenience and safe to maintenance
- Large cab, comfortable air suspension seat, rear mirror system make driving more convenience

SRT Series technical Features

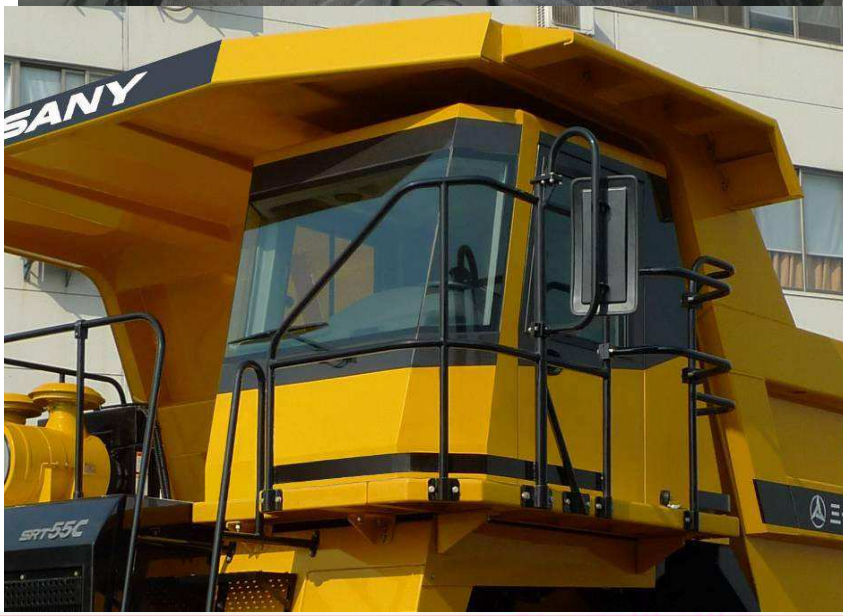
Platform



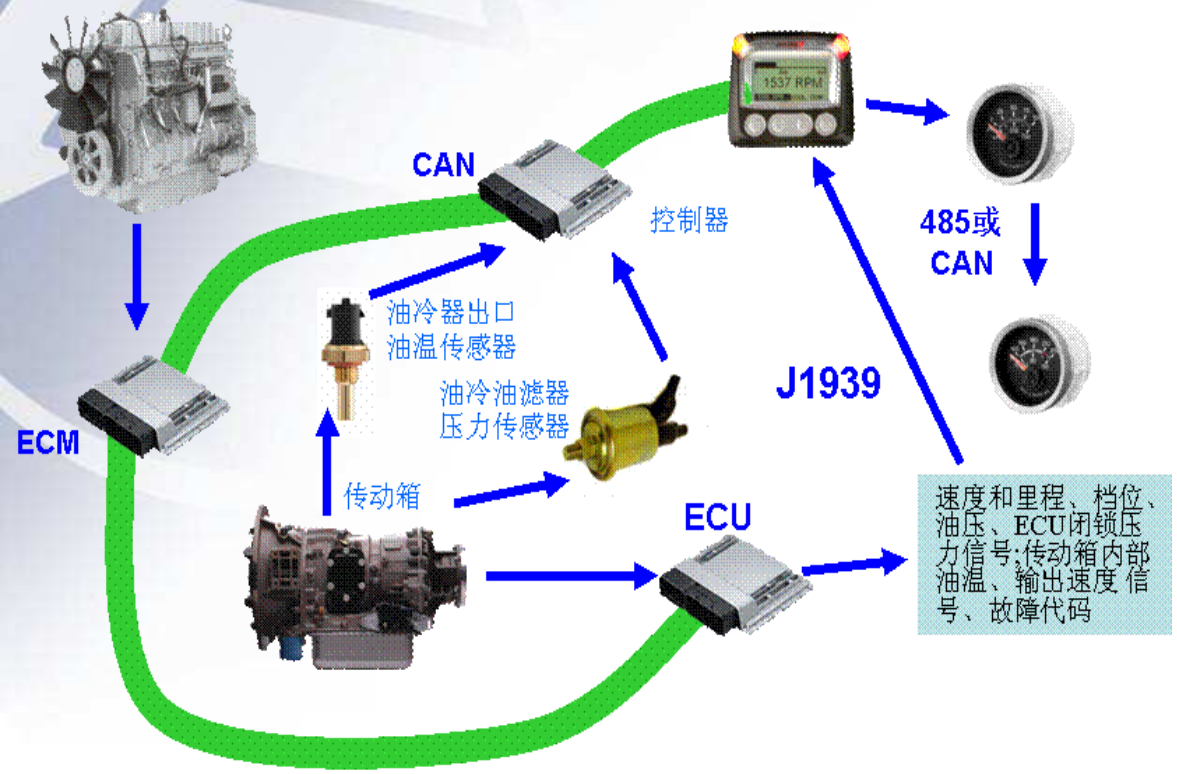
SRT vehicle optimized configuration design, short flat-front reduce blind area, and greatly increase safety of the driver.

Cab

- Large area of windscreen gives operator the wider view.
- Interior dimensions are complied with ISO 3411, accessible layout, spacious interior, instrumentation and control unit keys based on ergonomic design.
- Use of new insulation materials, providing driver a quiet environment. Air suspension seat efficiently reduces vibration.
- ROPS/FOPS meet the requirements of ISO 3471 and the interior dimensions are designed according to ISO 3411.



Electric System



- CAN bus technology, PLC control system design.
- Equipped with GPS-“Global Positioning System”, remote monitoring.
- Camera Rear View System.
- Various types of devices and the latest products are used in China and abroad, protection class IP65.
- All types of instruments focus on layout, easy to operate and monitor.
- Real time monitoring system through the CAN bus engine, transmission, hydraulic system, electrical parameters, Power View fault code display.

Electric System

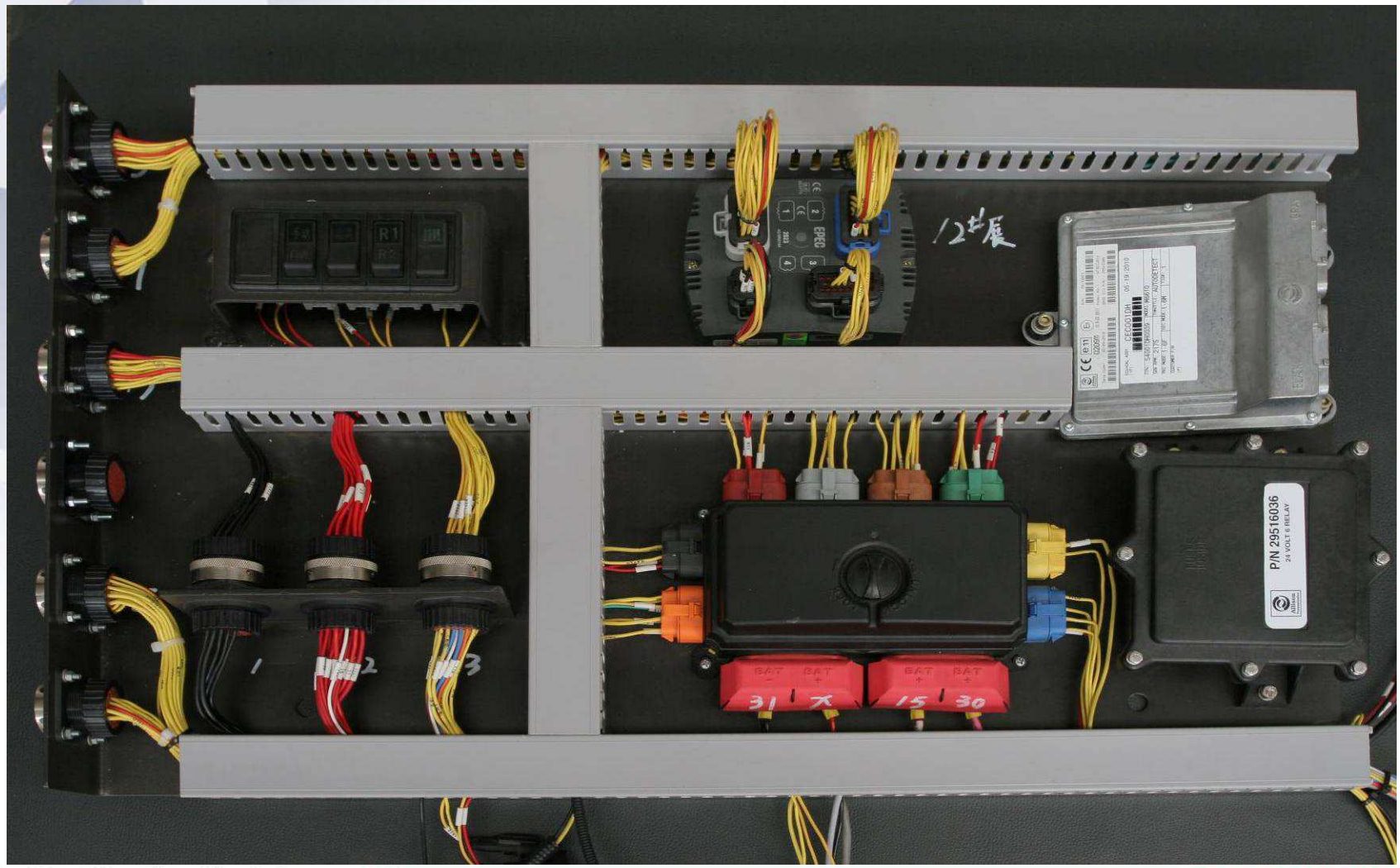
Use CAN bus as a communication platform, the ECM engine control , VECU automatic transmission , DECU instrument display system , VECU body control system, MECU remote diagnostic control systems communicate with each other between the multi-master mode.

Control cab use J1939 information exchange protocol, setting the configure of the GPS global positioning system, flexible and reliable implementation of the engine, transmission intelligence control and fault information storage, data upload, real-time classification of alarm, remote diagnostics and other advanced features. Ensure the reliability of the mining truck power system, stable operation, greatly improving availability, enhance maintainability, educe maintenance costs.

The latest and advanced components are widely used. Protection class IP65. All kinds of instruments are focused on layout, easy operation and monitoring.

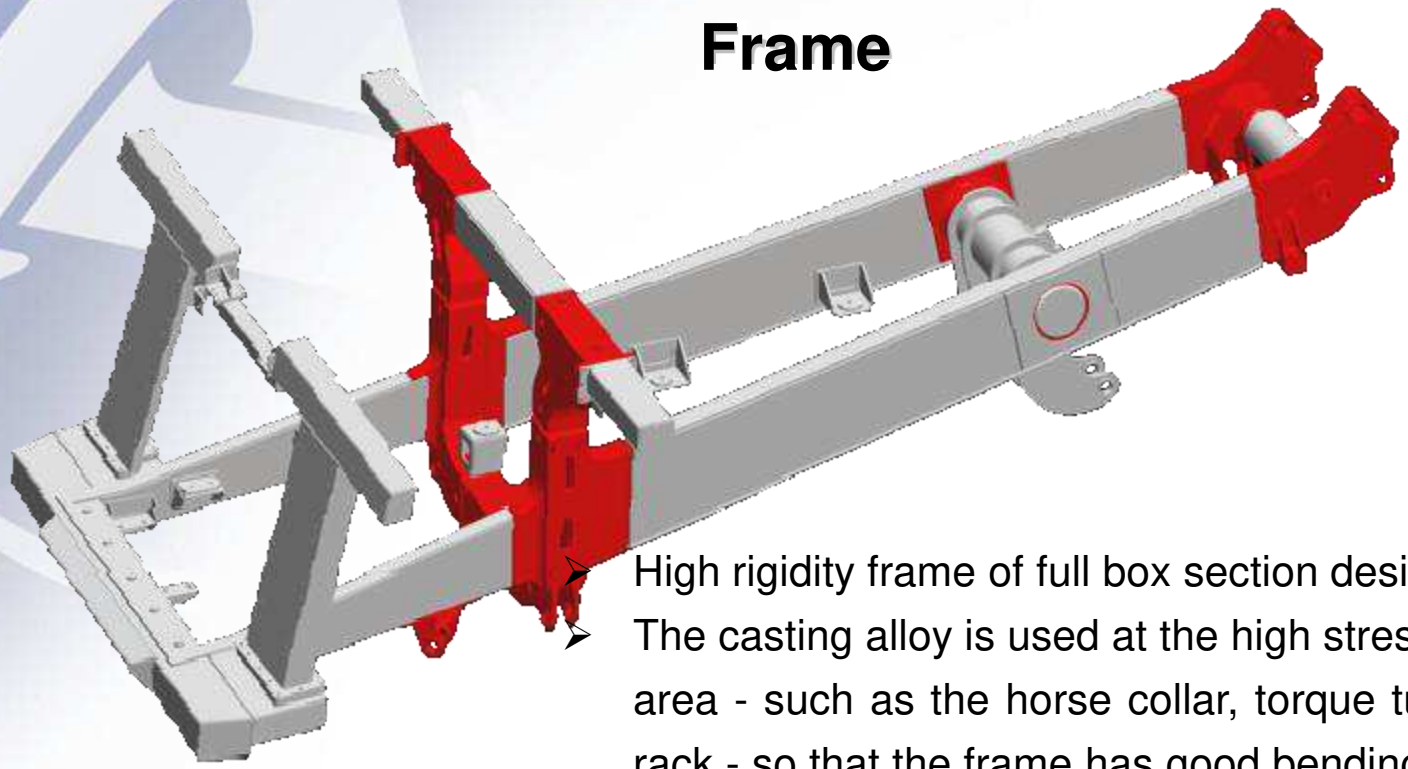
SRT Series technical Features

Electrical System, clear and standardized wiring



Courtesy of Machine.Market

Frame



- High rigidity frame of full box section design.
- The casting alloy is used at the high stress conjunction area - such as the horse collar, torque tubes, rear mounting rack - so that the frame has good bending, torsion and resistance to impact loads, longer lifetime.
- Use finite element analysis and optimized design, effectively resolve and reduce the impact of chassis and also improve vehicle reliability.

Body

- Dual V-shaped bottom body structure. Forward-shaped plate, with wide- angle retaining plate. Large capacity, high strength, well-worn, good impact resistance, lower load height, lower center of gravity, automatically material center-concentrated to efficiently avoid the dropping. The evenness of the truck-loading during working.
- Raising angle of 60 degree and maximum dumping angle of 48 degree.
- Loading height of 4375mm, easy for loading operation.
- Steel plates with high hardness and well-worn quality also equip with complete transverse reinforced bars. Sectional box girder and reinforced steel bars make bottom plate, side plate, front plate as well as top plate stiffer and more anti-impact.
- The body is supported by easy dismantled elastic pad. Body-heated by exhaust is optional.

Courtesy of Machine.Market

Chapter 4

Overview of Sany Mining Machine

Courtesy of Machine.Market

SRT95in Qingshanwu , Huzhou

Courtesy of Machine.Market

SRT95in Qingshanwu , Huzhou

Courtesy of Machine.Market

Sany Group launched the first Mining Truck on 8th October 2008

Courtesy of Machine Market

Minimum tonnage rigid truck model series

SRT33 launched in December 2009

Courtesy of Machine Market

The majestic SRT95 in BICES exhibition, Beijing,

Courtesy of Machine.Market

Sales

Trucks delivered to the customers.

Courtesy of Machine.Market

After Sales Service

We have an expert service team providing customers with 24-7 on-site service. Service engineer will serve at the mining site starting from the truck's delivery date for one year. After the warranty period, we still make periodic inspection to the products making sure life-long commitment for technical support.

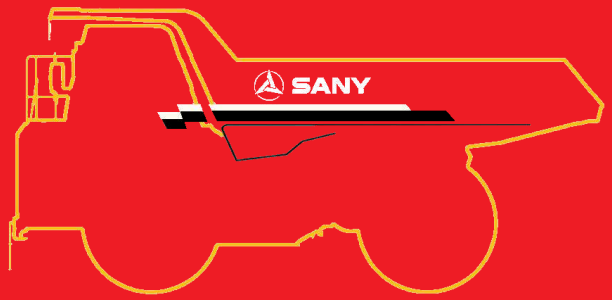
Courtesy of Machine.Market

REFERENCE IN THAILAND

- UNIQUE ENGINEERING&CONSTRUCTION PUBLIC COMPANY LIMITED.
- SINO-THAI ENGINEERING & CONSTRUCTION PUBLIC COMPANY LIMITED.
- SARENS ASIA
- EUROTECH ENGINEERING INTERNATIONAL CO.,LTD.
- DOUBLE A

SANY

Quality Changes the World



Sany Off Highway Truck Company

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