DISD

SD350

Main Performance Parameters (Standard Configuration)

Total Operating Mass :	18,900 KG	Max. Traction Force :	176 KN
Rated Load :	6,000 KG	Max. Dump Height :	3,131 mm
Rated Power :	178 KW	Min. Turning Radius(Outside tire edge) :	6,058 mm
Rated Bucket Capacity :	3.2 ~ 5.0	Overall Dimensions	
Max. Breakout Force :	197 KN	(Length X Width X Height) :	8,540 X 3,035 X 3,450 mm

DISD
A Doosan brand

DIPBE-02-2005

The most efficient expert in loose bulk materials transfer!

Integrated with 40 years of international standard professional loader manufacturing technologies, Little Giant is suitable for Emerging countries's working conditions.

DISD

SD350

Key features

MAIN PERFORMANCE FEATURES

- The Weichai Steyr low-RPM engine features an oil pump that has accepted professional test bench special adjustment, making engine acceleration performance much higher than industry level.
- Reasonable match between transmission and torque converter as well as fully play of engine power enable the whole machine to deliver stronger traction force-14% higher than industry level.
- The advanced Doosan drive axle and improved differential bevel gear process have increased gear flexural strength by 34.6%, enhancing the reliability of the drive axle and extending its lifespan.
- With 3,400mm wheel base and small turning radius of 6058mm(outside tire edge), the machine model is designed for any material, with greater agility of movement and more efficient operation.
- Manufactured according to a reasonable and optimized design based on typical working conditions, the hydraulic system adopts double-pump confluence technology, and makes full use of power and energy, thereby minimizing engine oil pressure load and power loss and enabling miniaturization of the hydraulic pump.
- The hydraulic cylinder seals and hydraulic parts in main connecting areas are all imported PARKER brand parts, effectively improving the reliability of the hydraulic system.
- By using Doosan patented technology and a redesigned layout and materials, the cooling system significantly reduces hydraulic oil temperature and water temperature during operation and is capable of ensuring the unit's capacity to work 24hrs continuously under 45℃ of temperature without risk of overheating.
- Paints imported from South Korea offer more outstanding anti-rust and anti-fade effects.

Materials and Specifications in the catalogue are subject to change without notice.

High Efficiency, Energy Saving

Smart Shape, Giant Strength

Perfect Match between Power and Speed, Unrivalled Work Efficiency in the Industry

Increasing the tilting angle a3 in the carry position allows the machine to move on bumpy roads without spilling any material, while increasing the dump angle a2 enables the machine to dump materials more quickly and completely.

With 3,400mm wheelbase and 6,058mm turning radius at outside tire edge, which is the smallest among similar products in the industry, Doosan's machine is specifically designed for light density material working conditions and offers greater overall flexibility, as well as more apparent advantages especially in confined work spaces.

" DISD – A Pioneer of Low-RPM Engine Matching Technology!"

Engine

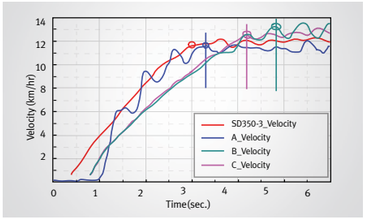
With 178KW rated power and 2,000 rpm rated rotation, the Weichai WD10G240E343 engine has been adjusted on the basis of condition subdivision, enabling lower fuel consumption in the most commonly used operating states.

Triple fuel filter

Triple fuel filters protect engine and fuel system from low quality fuel and make engine life longer

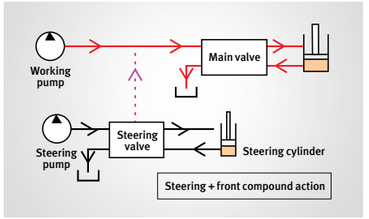
GearBox

The torque converter gearbox from German manufacturer ZF perfectly matches the engine, while Doosan's uniquely designed and patented gearshift-shock-improving technology efficiently prolongs the service life of the gearbox.



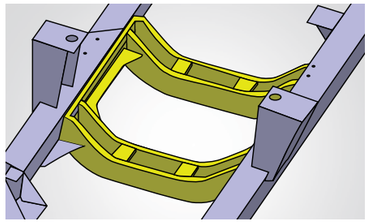
Acceleration Performance Exceeds Industry Level

The injection pump has undergone special debugging at a professional test bench and features greatly improved engine acceleration performance, enabling Doosan machines to start work in the 3rd second while other brand machines are still in the acceleration phase.

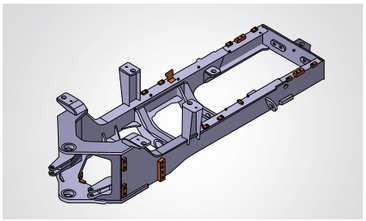


Advanced Double Pump Confluence Technology

The hydraulic system uses condition subdivision to realize a reasonable match, and makes full use of power and energy, thereby minimizing engine oil pressure load and power loss and enabling miniaturization of the hydraulic pump.



Connecting parts of swing frame adopt a reinforcement design to offer greater strength.



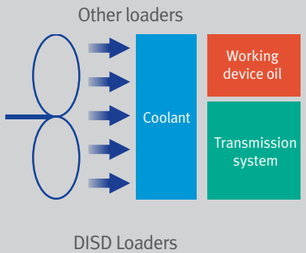
Thanks to the box-shaped structure of the rear frame side plates, the enhanced frame strength makes it easy to meet the challenge posed by harsh working conditions.

The whole center of gravity has been moved backward, and the real axle load bearing proportion has been increased to 54% resulting in a tipping load 10% higher than the industry level and greatly improved product stability.

Reliability

Low Oil Temperature for High Quality

Greater Reliability Ensured by Efficient Cooling, 24 Hours Continuous Work under 45˚C Environment without Risk of Overheating



Cooing System

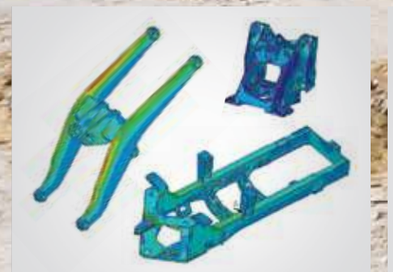
By improving the cooling system's layout and materials, DISD's unique patented cooling technology greatly reduces hydraulic oil temperature and coolant temperature during operation time, thus resolving the high temperature problem that has been hanging over the industry for many years. The machine is guaranteed not to overheat even after 24hrs of continuous work under 45˚C atmospheric temperature.

The hinge pins for operating devices in 6 positions have a radius of 5-10mm larger than similar products in the industry. The pin roll sets are made of highly wear-resistant materials and processed with a special heat treatment technology, thus offering greater durability and second-hand residual value.

The method of articulating the front and rear frames has been changed by replacing tapered roller bearings with joint bearings, effectively preventing such common problems as loose and breakage in the industry.

Hydraulic Seal Piping

The adoption of PARKER brand parts has greatly improved the quality of the hydraulic system. In addition, all of the hydraulic parts must satisfy the endurance test standard in South Korea to ensure the high reliability of Doosan's loaders.



Structural Parts

Made of high-strength steel and calculated using finite element analysis software , it guarantees easy operations under the most onerous and toughest working conditions.

Multi-Way Valve

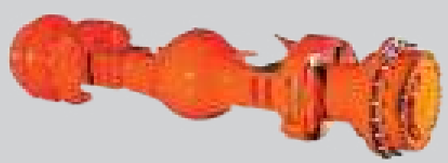
Adoption of new solid valves of wellknown brands and processed with highprecision, delivering good micro-motion performance, reduced internal leakage, and a prolonged service life.

Low Temperature Startup (Flame Preheating)

The low temperature startup device (Diesel electric heating + Air flame preheating) effectively improves work situations where it is difficult to startup in low temperatures during winter.

Drive Axle

Robust design and improved differential bevel gear processing have increased gear flexural strength by 34.6%, improving the reliability of the drive axle and extending its lifespan.



Transmission Shaft

The use of a reinforced drive shaft and a self-locking nut for the drive shaft's connecting bolt has improved the durability of the drive system.

Hydraulic System Action Time: 10.6 seconds

The sum total of the times of the three actions (lifting 5.5s, dumping 1.5s, lowering 3.6s) is 10.6s, which is much faster than the industry level, leading to a shorter cycle operation time and greater efficiency.

Comfort

Technology that Respects Human Health and Safety

The whole system comes with a standard integrated driving system that respects human health and safety, relieves fatigue, and improves work efficiency.

Cab Vision

DISD's New Full Vision Cab adopts Korean technology. The viewpoint has been moved forward and the front visual field has been broadened by 25%, while the installation of high-performance damping material guarantees superior sealing, sound insulation, shock absorption effects.

The upgraded SD350 model guides operations, improves work efficiency, relieves fatigue, and is operated more comfortably and easily. The operating environment in the cab boasts an optimized ergonomic design, has plenty of space and a good visual field, and delivers safe and reliable protection on the basis of a people-oriented conception.

Cab

The cab's interior features an ergonomic design, a super-large driving space, wider front and rear visual fields, a user-friendly design for easier operability, and industry-leading driving comfort. A new model of shock pad is used to provide stronger durability and reduced shock and noise, effectively relieving the driver's fatigue.

Deluxe Seat

High back, deep-seated position, dual armrests and multi-level spring shock absorption guarantee a comfortable operation.

Entertainment System

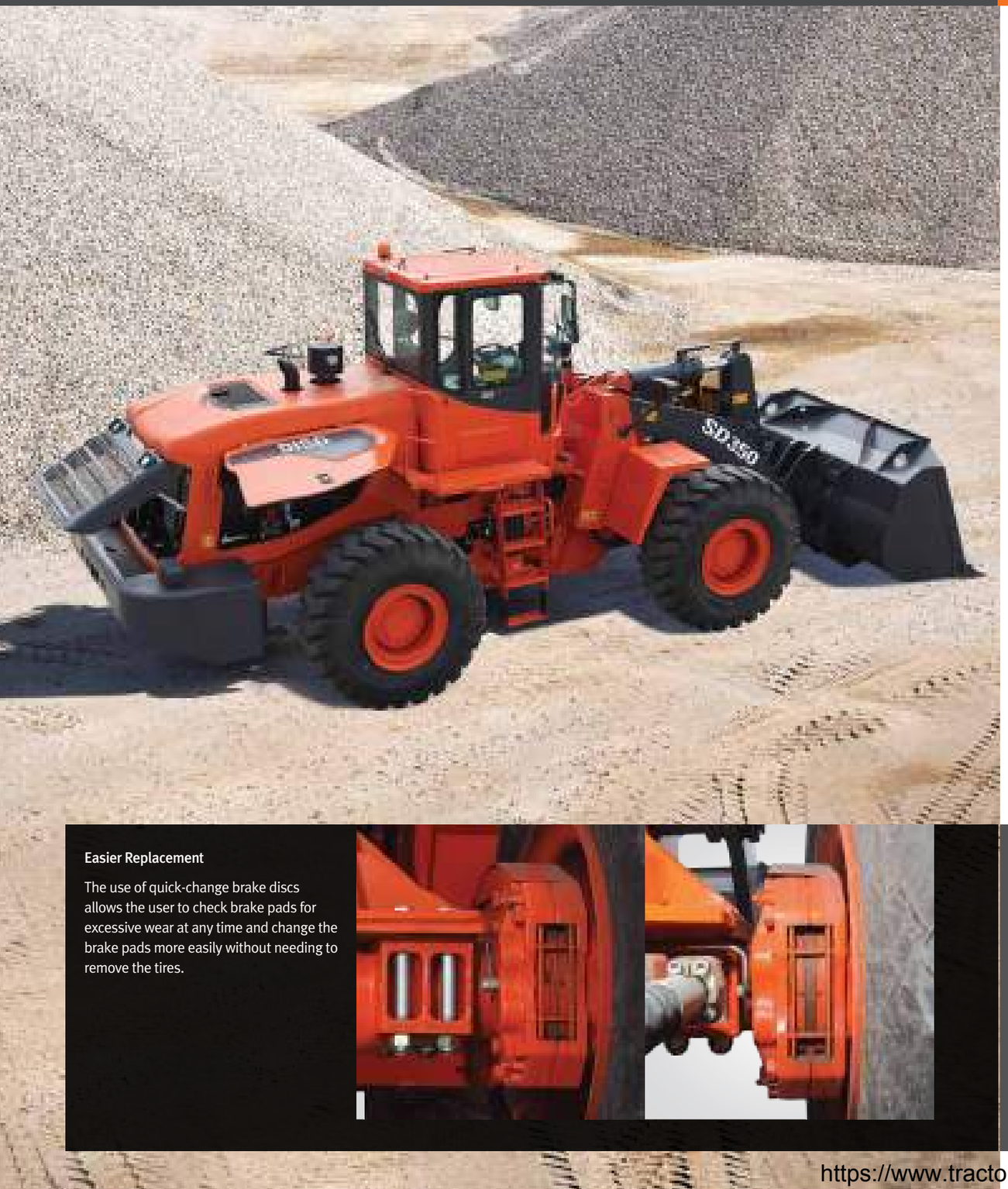
High-quality audio entertainment systems (MP3, radio) create a pleasant and relaxed work environment. A USB port is also available for charging mobile phones.

Shock Pad

A new model of shock pad is used to provide stronger durability and reduced shock and noise, effectively relieving the driver's fatigue.

Maintenance Convenience

Professional and Technical Services for Customers



Rear door opening angle increased up to 65°, making engine and radiator maintenance more convenient.

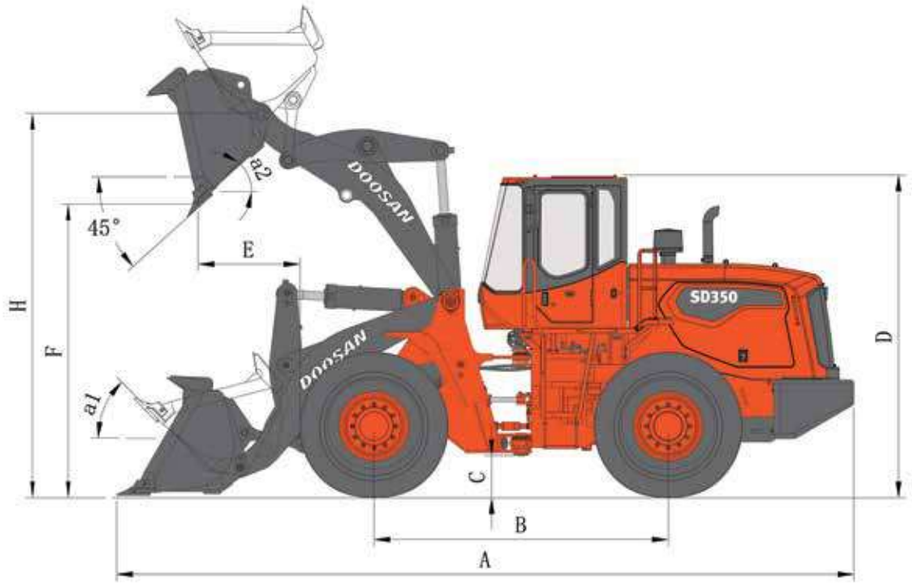
All-metal hood, greater durability

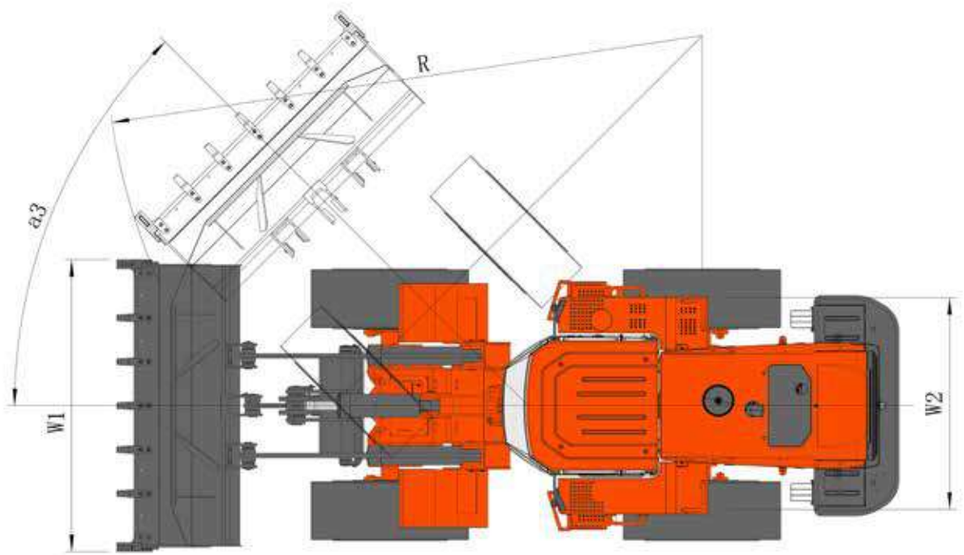
Easier Replacement

The use of quick-change brake discs allows the user to check brake pads for excessive wear at any time and change the brake pads more easily without needing to remove the tires.

The booster pump delivers a higher augmented-thrust ratio, more stable braking performance, and more convenient daily maintenance thanks to its being mounted on the body's side.

Both sides of the hood can be opened to the side





General Specification

Operating Weight	18.9 ton
Machine Dimensions (A x W1 x D)	8,540 x 3,035 x 3,450 mm
Ground Clearance (C)	416 mm
Wheel Base (B)	3,400 mm
Tread (W2)	2,174 mm
Turning Radius (R)	6,772 mm
Steering Angle (a3)	40 deg

Working Range

Dumping Height (F)	3,131 mm
Dump Reach (E)	1,243 mm
Max. Dump Angle (a2)	47°
Max. Tilt Angle on Ground (a1)	46°

Specification

SD350

General parameters

Bucket capacity	3.5 m^3 mono tooth
Operating weight	18,900 KG
Overall length x width x height (mm)	8540 x 3035 x 3450 mm
Rated load	6,000 KG
Wheelbase	3,400 mm
Tread	2,174 mm
Ground clearance	416 mm

Engine

Model	Weichai Steyr engine WD10G240E343 (turbocharged)
Rated power	178 KW
Rated speed	2,000 rpm
Number of cylinders/bore & stroke(mm)	6 / 126 x 130
Displacement	9.7 L
Max. torque	1100N.m / 1,300 - 1,500 rpm

Optional items of equipment

Bucket	3.5 m^3
Enlarged coal bucket	5.0 m^3
Extended arm (dump height)	3,690 mm
Quick coupler bucket	3.5 m^3 mono tooth
Timber grapples	

Transmission system

Torque converter		Twin turbo
Gear box		
Planetary gear	Multiple disc	Anti-shock power shift
Forward Speed(Ⅰ Ⅱ Ⅲ Ⅳ)		6.7 / 12.5 / 23.4 / 35.1 km/hr
Drive form		Four-wheel drive
Rear axle swing angle		11°
Tire		23.5 - 25 - 20 PR
Max. traction force		176 KN
Max. climb angle		30°
Max. steering angle		40°
Min. turning radius (Bucket edge)		6,772 mm

Capacity

Fuel tank capacity	350 L
Hydraulic oil tank capacity	250 L
Engine oil	20 L
Gear box oil	45 L
Drive axle oil (front/rear)	27 L / 27 L

Working device

Max. dump height	3,131 mm
Dump reach	1,243 mm
Max. dump angle	47°
Max. breakout force	197 KN

Hydraulic system

Pump type				Gear pump
Pump displacement				104.9mL/r
System operating pressure				21MPa
Front cycle time				
	Lifting	Dumping	Lowering	Total
	5.5 s	1.5 s	3.6 s	10.6 s

Noise

Noise at driving position	≤80 dB(A)
Machine exterior radiated noise	≤108.7 dB(A)

Loading Material Unit Weight (Please determine the precise loading material weight according to the densities of the different materials given in the Table.)

Material Name		Density Kg/m^3
Rubble		1,600
Mine refuse		650
Clay	Dry excavated	1,485
	Wet excavated	14725
	Natural	1,650
Clay and gravel	Dry	11,185
	Wet	1,650
Coal	Smoke-free raw coal	1.190
	Smoke raw coal	950
Weathered granite	75% rock,25% soil	1955
	50% rock,50% soil	1,725
	25% rock, 75% soil	1,585
Gravel	Pit gravel	1,900
	Dry	1,485
	Dry(1/4" 2")	1,650
	Wet(1/4"-2")	2,015

Material Name		Density Kg/m^3
Soil	Dry	1,550
	Wet	1,725
	Fine clay	1,125
	Tight	1,840
	Soft slurry	1730
	Dry compacted soil	1,520
Granite	Crushed	1,650
	Solid	2,800
Plaster	Crushed	1,810
	Crushed	1,600
	Solid	2,780
Limestone	Crushed	1,550
	Solid	2,600
Peat coal	Dry	415
	Wet	1,125
Alumina		1,425

Material Name		Density Kg/m^3
Sand rock	Crushed	1,550
	Solid	2,300
Sand	Loose and dry	1,440
	Slightly wet	1,680
	Wet	1,850
	Compacted wet sand	1,850
Sand and gravel	Dry	1,730
	Wet	2,000
Furnace cinders	Crushed	1,760
	Solid	2,100
Trappide	Crushed	1,740
	Solid	2,880
Hematite		2,460
Magnetite		2,780
Iron pyrites		2,580
Taconite		2,800