

Construction Equipment

# FR220D





# FR220D, EFFICIENT ALL-ROUNDER

## Efficiency

Nasr exclusive engine with strong power and low fuel consumption

## Maneuverability

Buffer valve is adopted to improve softness of operation

## Reliability

Original international famous brands key parts make the product more reliable.

## Safety

The cab is anti-tilt and safe.

## Maintenance

Simplified daily inspection and longer maintenance period.



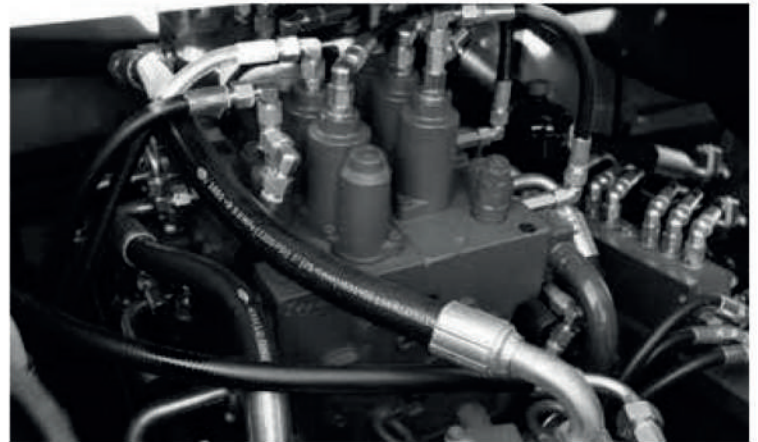
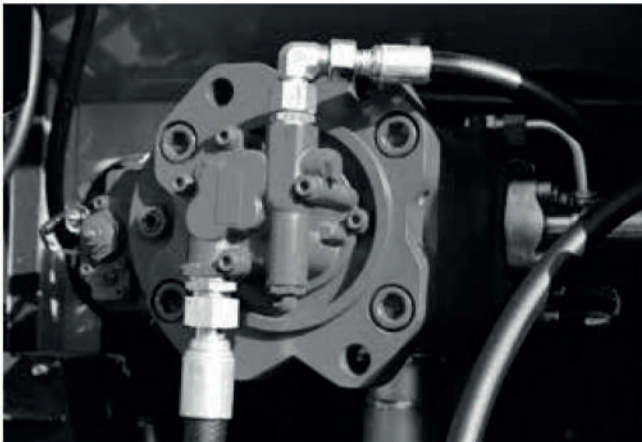




A LEADING INTELLIGENT & EFFICIENT BRAND OF GLOBAL CONSTRUCTION EQUIPMENT INDUSTRY

## EFFICIENCY

- Nasr exclusive engine with strong power and low fuel consumption.
- Using new intelligent controller, the computing speed is improved by 2 times, the control is accurate, and the fuel consumption is reduced by 19%.
- The main valve is upgraded, and the hydraulic loss in the valve is reduced by 20%; the circuit is optimized, and the pressure loss is reduced by 10%.
- With dedicated crushing mode, it is energy-efficient.



### **The whole machine is more efficient**

- With independently developed EDS system, matching performance of the whole machine is optimized, and operation efficiency is increased by 10%;
- Using large displacement main pump, the efficiency is higher;
- Using the working condition adaptive technology, the controller automatically matches the corresponding flow rate after collecting the signal, which improves the efficiency;
- Advanced energy-saving compact main valve is adopted, which reduces internal pressure loss by 20%.









## MANEUVERABILITY

- The new cab is equipped with a suspension seat, which provides adjustable angles and makes it comfortable.
- The user-friendly design of air conditioning air outlet is easy to adjust.
- Six silicon oil shock absorbers are installed at the bottom of the cab, which has good shock absorption effect.
- The ergonomic long handle has a small operating force and good micro-control performance.



### **Nasr exclusive KPM main control valve core**

Micro-control is more precise.



### **Imported buffer valve**

Smooth and soft actions are achieved.



### **Low load handle**

Operating force is reduced by 15%.



## RELIABILITY

Core components originally from international famous brands make the product more reliable.



With three-stage air filter and high filtration efficiency, the replacement cycle is long and the engine service life is extended;

With three-section intake pipe design to provide high reliability.



With reinforced structural parts, service life is extended by 30%; High-strength steel Q345 is used for all parts, increasing the strength by 47%.



Using imported connectors with higher protection level, it is safer and more reliable;

The delay power-off protection function is added to improve the service safety of the electrical components.







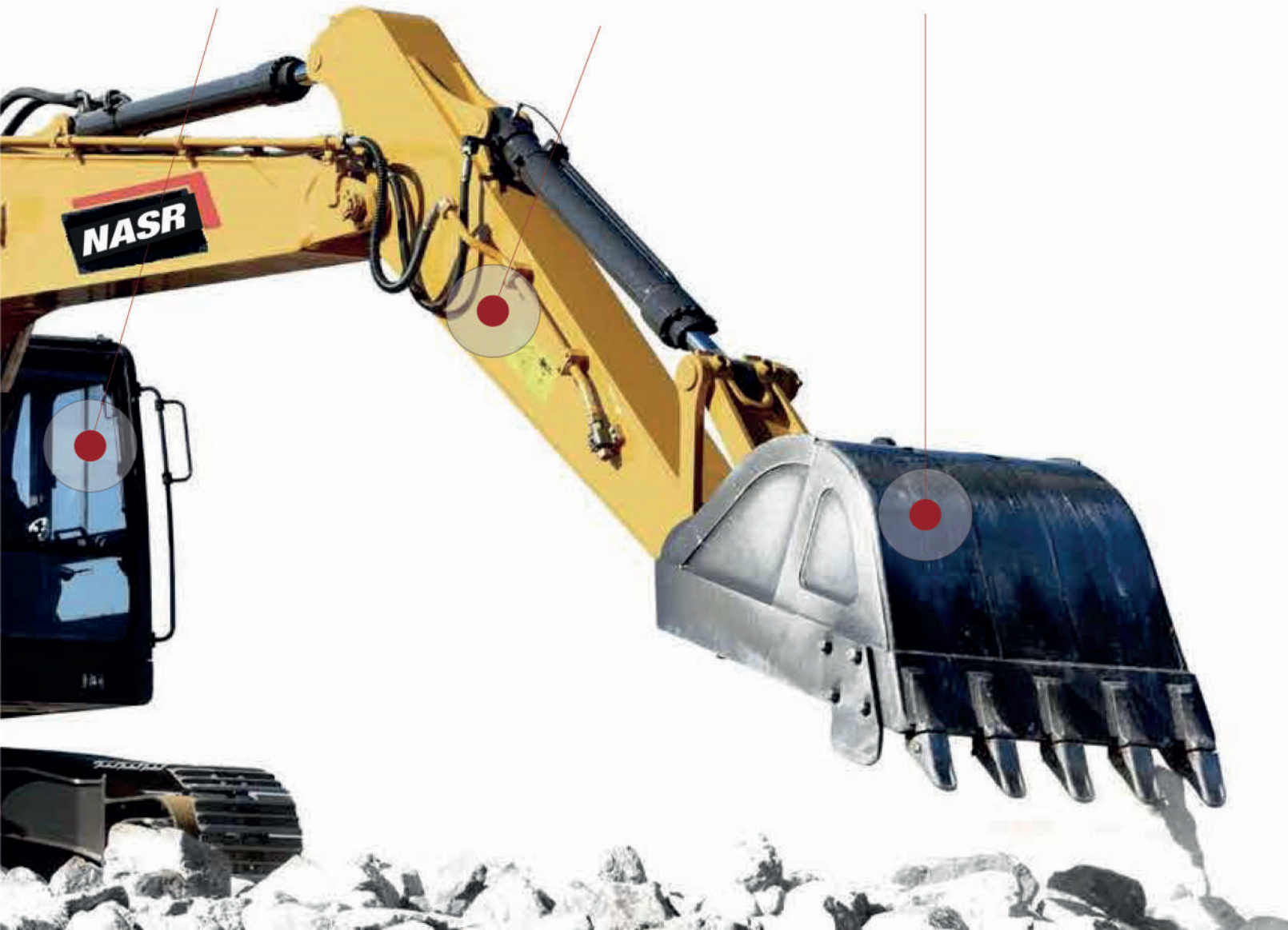
Oil radiator inlet pipe and return pipe adopt steel pipe structure, which provides high reliability.



The front and rear supports of the boom are integrally casted, which provides high reliability;



HQ60 and WNM400A are adopted for the key parts, and the service life is increased by 30%.





## SAFETY

- The cab is anti-tilt and safe.
- The visual field of the cab is optimized, and by using large wide-angle rearview mirror, blind spots are eliminated.
- Driver safety is ensured by seat belts, fire extinguishers and escape hammers.
- The new anti-slip plate is used to improve the slip resistance and make it safer during maintenance.



### Humanized configuration

- The pin mounting point is located on the left side of the boom to ensure that it can be found in the first time when it is loose;
- The platform adopts anti-collision beam to provide more protection for the swing platform.



### Broaden your horizon

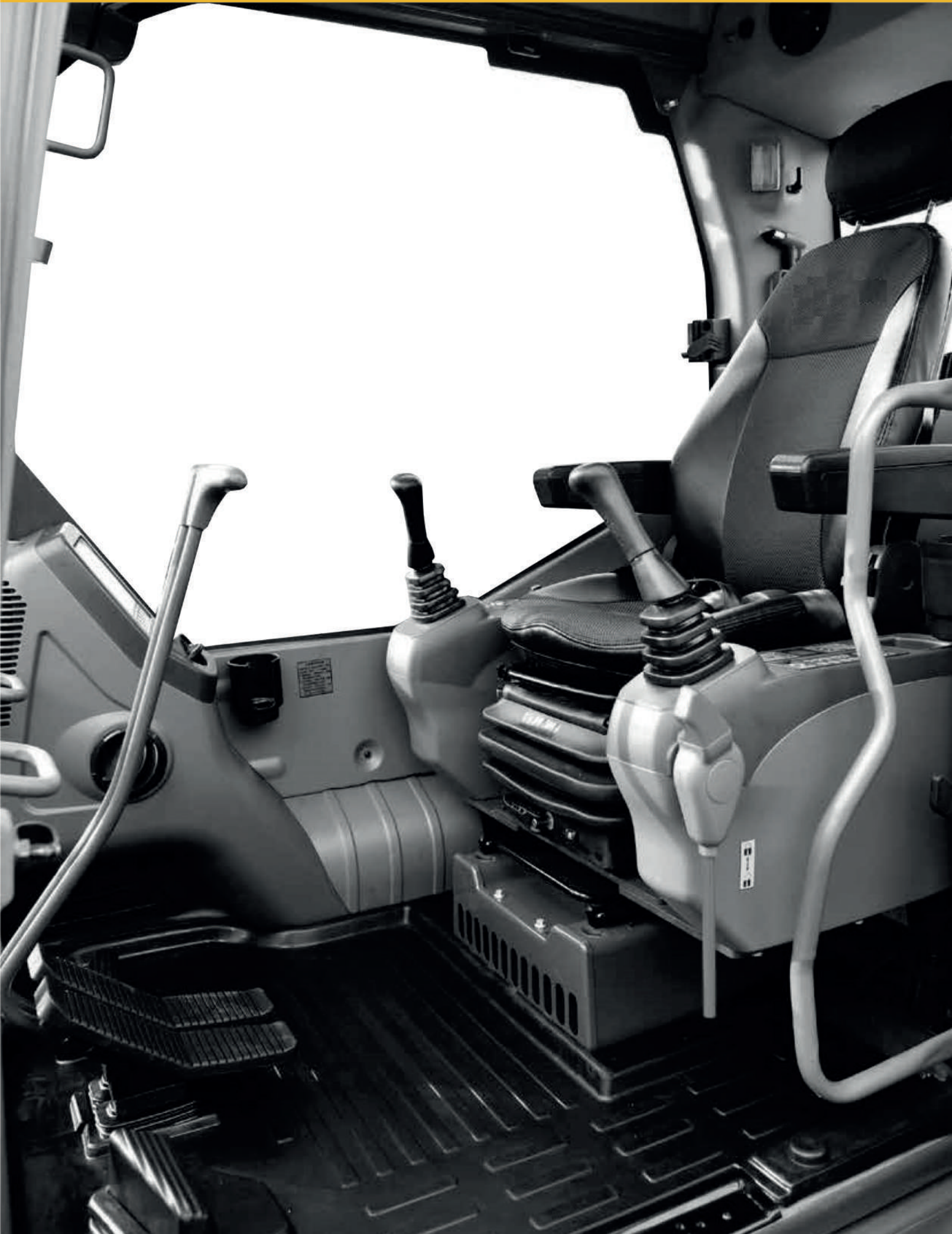
- The front windshield can be partially or fully retracted to the roof.
- Rear-view camera is optional to improve the security of operation.



### Optimal temperature control

- Enhanced air conditioning system improves cooling performance;
- Anti-UV glass is equipped as a standard, which can provide effective thermal insulation.











## MAINTENANCE

- **With intellectualization upgrade, it has fault diagnosis function.**
- **Fault code query, maintenance tips, and speed calibration function are added for convenient repair and maintenance.**
- **Grease bucket and grease gun rack are added for convenient storage.**
- **The engine's three-stage filtering arrangement is optimized for convenient maintenance.**



### **Engine oil filter**

- The engine oil filter provides multi-stage filtration to ensure good lubrication and extend the service life of the engine;
- The installation position is more user-friendly, and the oil filter can be replaced quickly and easily.



### **Water separator**

- The oil-water separator is installed in the main pump compartment and maintenance personnel can stand on the ground for routine maintenance.



### **Fuel filter**

- Using glass fiber filtration technology to protect the engine more effectively. More than 99.5% of the foreign body are filtered, which effectively extends the oil change period.



## STANDARD CONFIGURATION



### Engine

- Turbocharged 4 stroke water-cooling direct injection type
- Complying with China stage II emissions
- Auto idle
- Engine oil pan drain valve
- Radiator with protective net
- Double filter elements dry air filter element
- Air filter with pre-cleaner
- Air intake heater
- Fan guard



### Cab

- Ashtray
- Cigarette lighter
- Seat belt
- Front sunshade
- Storage box
- Glass-breaking hammer
- Thermostatically controlled air conditioner
- Shock absorber (silicone oil and rubber pad)
- Flexible antenna
- Radio (with interfaces of MP3 and USB)
- Hydraulic safety lock
- Sun-protection safety glass
- Floor mat
- Large storage compartment
- Pull-up front window
- Removable lower windshield
- Sunshade window
- Front-bottom glass protective screening
- Wipers
- Open skylight



### Hydraulic system

- Automatic hydraulic system (confluence system)
- Anti-swing valve
- Boom and arm block valve
- Multi-stage filtration system
- Cylinder buffer device
- Auxiliary hydraulic valve
- Automatic two-speed travel motor



### Electronic control system

- 24V power supply
- Diagnostic interface
- Emergency stop switch
- Display brightness adjustment
- Maintenance tips
- Automatic diagnostic system
- Automatic idle system
- One-touch pressure augmentation
- Safe stop / start function
- Main power switch
- Anti-theft system
- Engine starting protection
- Multilingual display

### Swing platform

Passage with railing

Tool box

Anti-slip plate

Large pedal

Large arm rest

Bottom protection plate

Crash-proof

### Chassis

Fixed chassis

600mm, triple grouser track shoe

## OPTIONAL CONFIGURATION

Some optional devices may be a standard configuration in some markets, but some optional configuration may not be available in some markets. You must contact with your local dealer to know the availability of the equipment or adjust the configuration according to the corresponding requirements. The specific configuration shall be subject to the actual product.

### Working device

Arm:2925mm

Standard bucket: 1.0 m<sup>3</sup>

Rock bucket: 0.9m<sup>3</sup>

Hydraulic hammer

Quick-change device

Rear ripper

Hydraulic shear

### Safety system

Upper-front protection device in the cab

Walking alarm

Swing alarm

### Others

Hydraulic circuit

Quick coupler circuit

Working lights



## TECHNICAL SPECIFICATIONS



### Engine

Model	Isuzu/AA6BG1TRP-04	Cummins/6BTAA59-C150
Type	Supercharged, direct injection, water-cooling	
Rated power ( kW/rpm )	113.2/2100	112/1950
Max. torque ( N·m/rpm )	550/1600	614/1500



### Hydraulic system

Max. flow of main system ( L )	2x234
Max. pressure of hydraulic oil ( L )	37.3
Max. pressure of pilot system ( Mpa )	3.9

- Comply with China stage II emission standard of off-road mobile machinery.



### Walking drive

Max. grade ability ( ° )	35
Max. walking speed ( km/h )	4.9
Max. traction force ( kN )	217



### Swing mechanism

Swing speed ( r/min )	11
Swing torque ( kN·m )	65.9



### Service capacity

Fuel tank ( L )	385
Hydraulic system total ( L )	260
Hydraulic tank ( L )	220
Engine oil ( L )	20
Engine coolant ( L )	34
Swing drive ( L )	4
Final drive ( L )	5x2



### Machine parameters

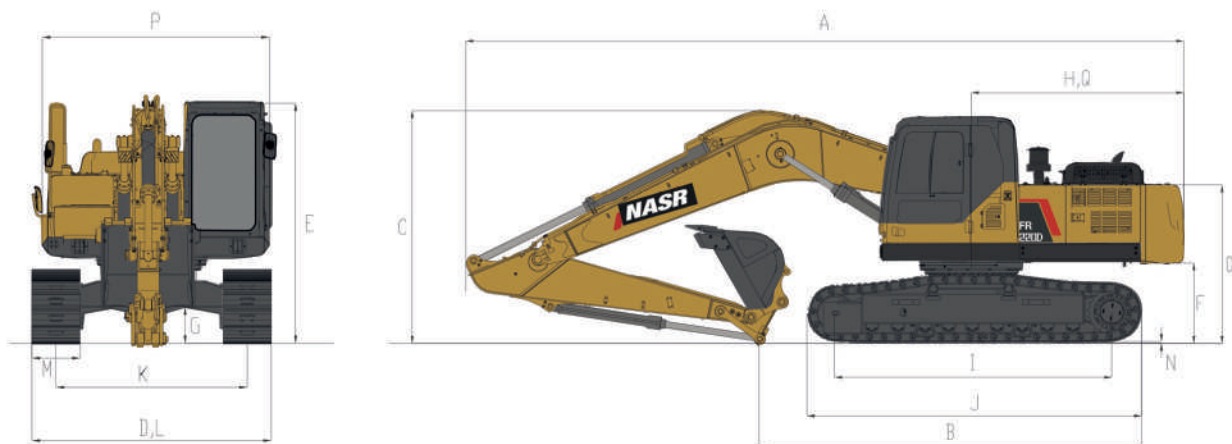
Working weight ( kg )	22200
Bucket capacity ( m <sup>3</sup> )	0.8-1.0
Arm digging force ( kN )	108
Bucket digging force ( kN )	139



### Working device

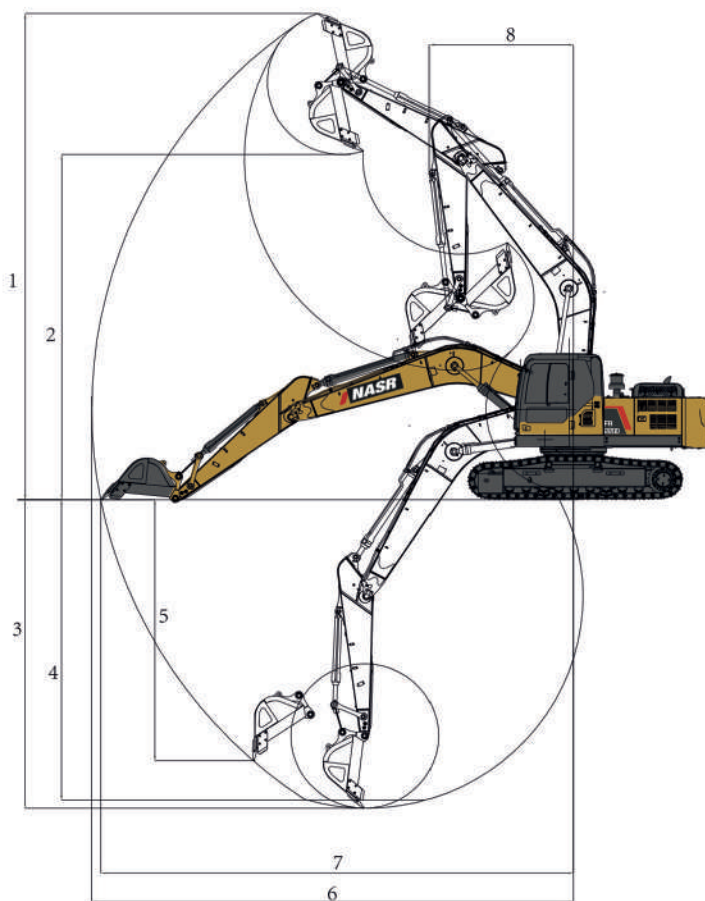
Usage	Operating environment	Bucket		Arm		Boom 5700mm	Hydraulic circuit
		Bucket m <sup>3</sup>	Bucket width (without side teeth) mm	Standard arm	Short arm		
General operation	Digging and loading of common soil such as sand, gravel and clay	0.92	1165	●	○	●	○
Heavy digging	Compaction and digging of hard soil and clay mixed with stone, heavy work such as gravel loading, etc.	0.8 ( rock bucket )	To be developed	●	○		
Light load operation	Digging or loading of dry, loose sand, soil, etc.	1.0	1185	X	●		

● Standard ○ Optional X Unavailable



 **Shipping size**

Total length	A	mm	9580
Grounding length (transport)	B	mm	5085
Total height (to the top of the boom)	C	mm	3060
Total width	D	mm	2980
Total height (to the top of the cab)	E	mm	3050
Ground clearance of counter weight	F	mm	1090
Min. ground clearance	G	mm	443
Tail Swing radius	H	mm	2880
Track grounding length	I	mm	3640
Track length	J	mm	4385
Track base	K	mm	2380
Track width	L	mm	2980
Track shoe width	M	mm	600
Tooth height	N	mm	16
Machine hood height	O	mm	2150
Upper platform width	P	mm	2700
Distance from the center of rotation to the back end	Q	mm	2880



 **Working ranges**

Max. digging height	1	mm	10190
Max. dumping height	2	mm	7260
Max. digging depth	3	mm	6510
Max. vertical digging depth	4	mm	5980

Max. digging depth for horizontal cutting of 8'	5	mm	6320
Max. digging radius	6	mm	9875
Ground max. digging radius	7	mm	9690
Min. swing radius	8	mm	2910





Note :

A series of horizontal dotted lines for writing.



Certain specification(s) are based on engineering calculations and are not actual measurements. Specification(s) are provided for comparison purposes only and are subject to change without notice. Specification(s) for your individual Doosan equipment will vary based on normal variations in design, manufacturing, operating conditions, and other factors. Pictures of Doosan units may show other than standard equipment.

# Powered by Innovation

**نصر ماتي**  
شركة بين العالبي (سهامتي خاص)



[www.nasrmachine.com](http://www.nasrmachine.com)  
[sales@nasrmachine.com](mailto:sales@nasrmachine.com)  
+98 (21) 61777  
Whatsapp : +98 (912) 30 430 86