



HNRS 4531E

Zero Emission, Less Maintenance,
Less Running Costs.



SOCMA POWER LIFT YOUR BUSINESS

FUJIAN SOUTHCHINA HEAVY MACHINERY MANUFACTURE CO., LTD

🌐 <https://socma-forklift.com>

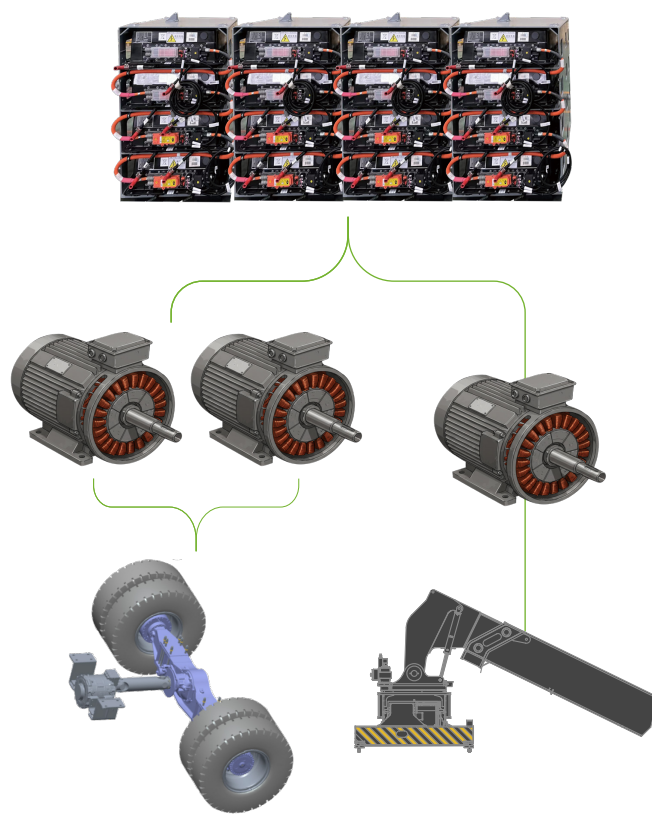
90% EFFICIENCY



Motor Direct Drive

- ◆ No gearbox, resulting in a short and efficient drivetrain.
- ◆ Vehicle speed is determined directly by motor speed, allowing for stepless speed control and smooth acceleration without shifting shocks.
- ◆ Optimal motor power matching ensures the motor operates within its high-efficiency range, reducing energy consumption.
- ◆ Fewer components (no gearbox and engine), leading to reduced maintenance and Zero emission

Driving and operational functions are powered by separate motors, improving combined action performance and increasing operational efficiency



30% ENERGY RECOVERERY

Regenerative braking

When braking, the motor generates electricity from the vehicle's kinetic energy, recharging the battery and reducing brake wear

Gravitational Potential Energy Recovery

During the container's lowering, its gravitational potential energy is converted into electrical energy to recharge the battery.

With 2 charging ports, charging time can be reduced to 1h (depending on the charging power and battery capacity)

507KWH CATL lithium battery.
- produced by the CATL, the biggest battery manufacturer in the world.



FAST



Higher pressure pump

Higher pressure-rated hydraulic pump from top brands enables faster heavy container lifting speeds compared to other brands



CAN Bus Communication

Latest CAN bus technology and updated control program enable our faster responsiveness and precise handle synchronization



Self-leveling Spreader

We are the first in the industry to adopt an electro-proportional valve active leveling system for our spreaders. Whether tilting, traveling, or operating, they maintain a flatness within 3°, enabling instant container pickup and release—simple, swift, and seamless



SAFE



360° panoramic reversing camera (optional)

The system is equipped with a 360° panoramic reversing camera and humanoid recognition technology, capable of detecting humans within 3 meters and objects within 5 meters. The driver cabin's visual reversing system automatically triggers alerts and warnings. Additionally, the millimeter-wave radar sensing system detects obstacles over 15 meters away, combined with intelligent braking assistance, ensuring safety for both operators and equipment



Real-time detection of the reach stacker's hydraulic pressure, boom length, angle, and tipping detection signals to achieve torque protection. When the tipping torque reaches a certain value or a tipping signal is detected, the control unit only allows the boom to retract, thus providing intelligent anti-tipping safety protection.



The precision weighing system accurately measures the weight at all four corners of the container to calculate its center of gravity, thereby detecting potential load imbalance



Automatic fire suppression system

Automatically detect Fire, preventing Fire hazard from happening. Mechanically triggered and environment friendly.

The control program intelligently sets the rotation range of the lifting attachment based on parameters such as the boom's lift angle, boom extension length, and whether a container is being lifted. This prevents collisions between the attachment, frame, boom, cylinder, or other objects during rotation or lateral movement.



Real-time monitoring of the reach stacker's hydraulic pressure, boom length, angle, and vehicle speed to achieve dynamic torque protection. The system calculates and limits the vehicle speed to a value below the potential tipping danger threshold, thus preventing the possibility of tipping.

EASY



Movable Cabin

The cab utilizes a snap-on connection design. Once closed, it is securely fixed by a self locking mechanism. Simply lift off the cab to reposition it, making inspection and maintenance significantly more easier special cabinet types such as ISO.



Automatic lubrication System (optional)

The lubrication system automatically supplies lubricant to each lubrication point in precise, timed, and measured amounts based on their specific oil requirements. Compared to manual lubrication, this ensures more timely and accurate lubrication for all points while significantly reducing workers' labor intensity.



Integrated operation handle

The centralized control handle integrates all operational buttons, including the 20/40-foot switching function. The spreader's rotation and lateral movement are proportionally controlled, allowing for precise and flexible container handling operations and accurate lubrication for all points while significantly reducing workers' labor intensity.



RELIABLE

By referencing a wide range of failure cases from both domestic and international sources, and by compiling extensive data on customer usage patterns, we utilize finite element analysis and dynamic simulation techniques to enhance our designs.

The critical load-bearing components of the spreader are crafted from high strength material, which boasts a yield strength of 700 MPa.

The steel structure is designed to withstand a fatigue life of over 30,000 hours of operation.



ECONOMICAL

10% less energy consumption

The variable load-sensitive hydraulic system supplies flow on necessary demand, avoiding overflow heat loss at various points

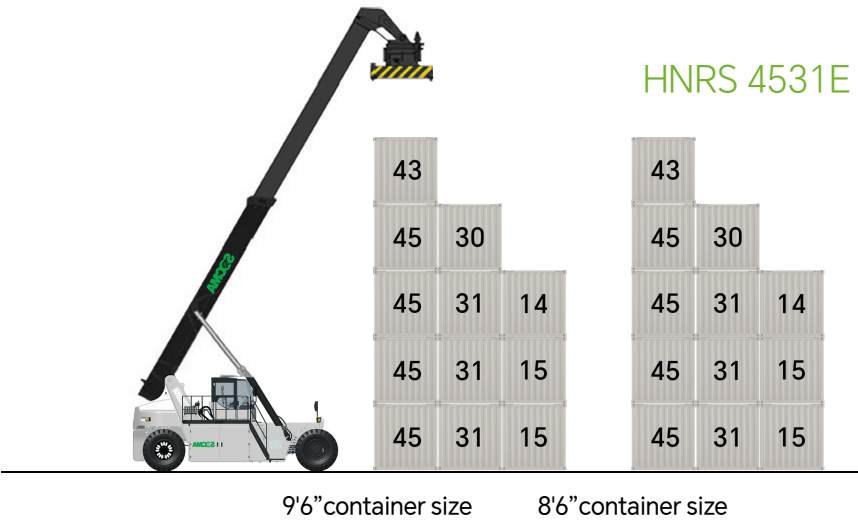
The control program integrated with engine characteristic curves effectively operates within the lowest fuel consumption range.

The boom is retracted and lowered by its own weight and load to minimize energy consumption

Massive simulating the steering motion of the entire vehicle, analyze the differences in the steering angles between the inner and outer wheels under various turning conditions.

The most optimal sizes of the steering cylinder, steering knuckle, and linkages.

Under the same working conditions, the same type of tire has a longer service life.



COMFORTABLE

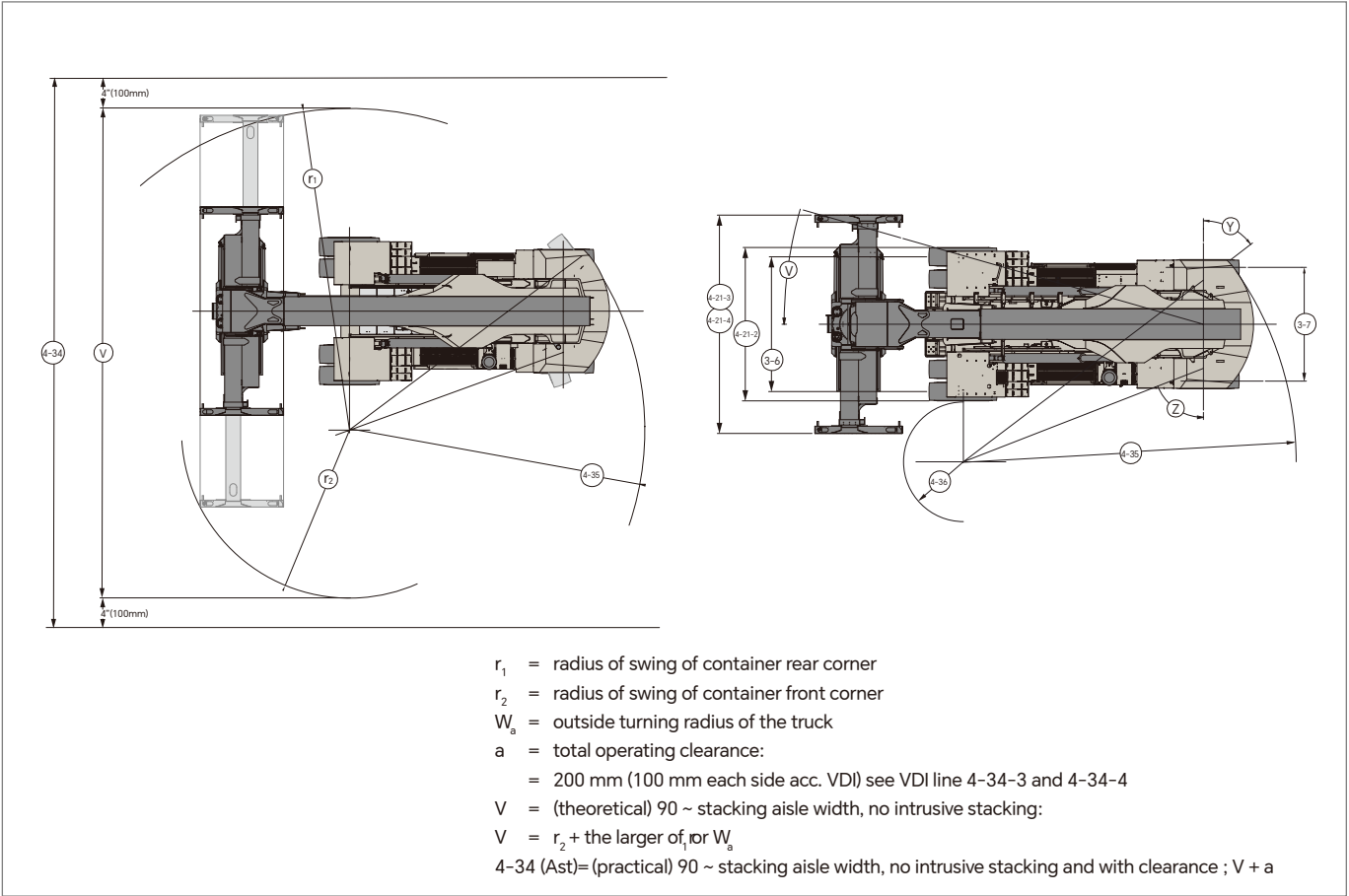
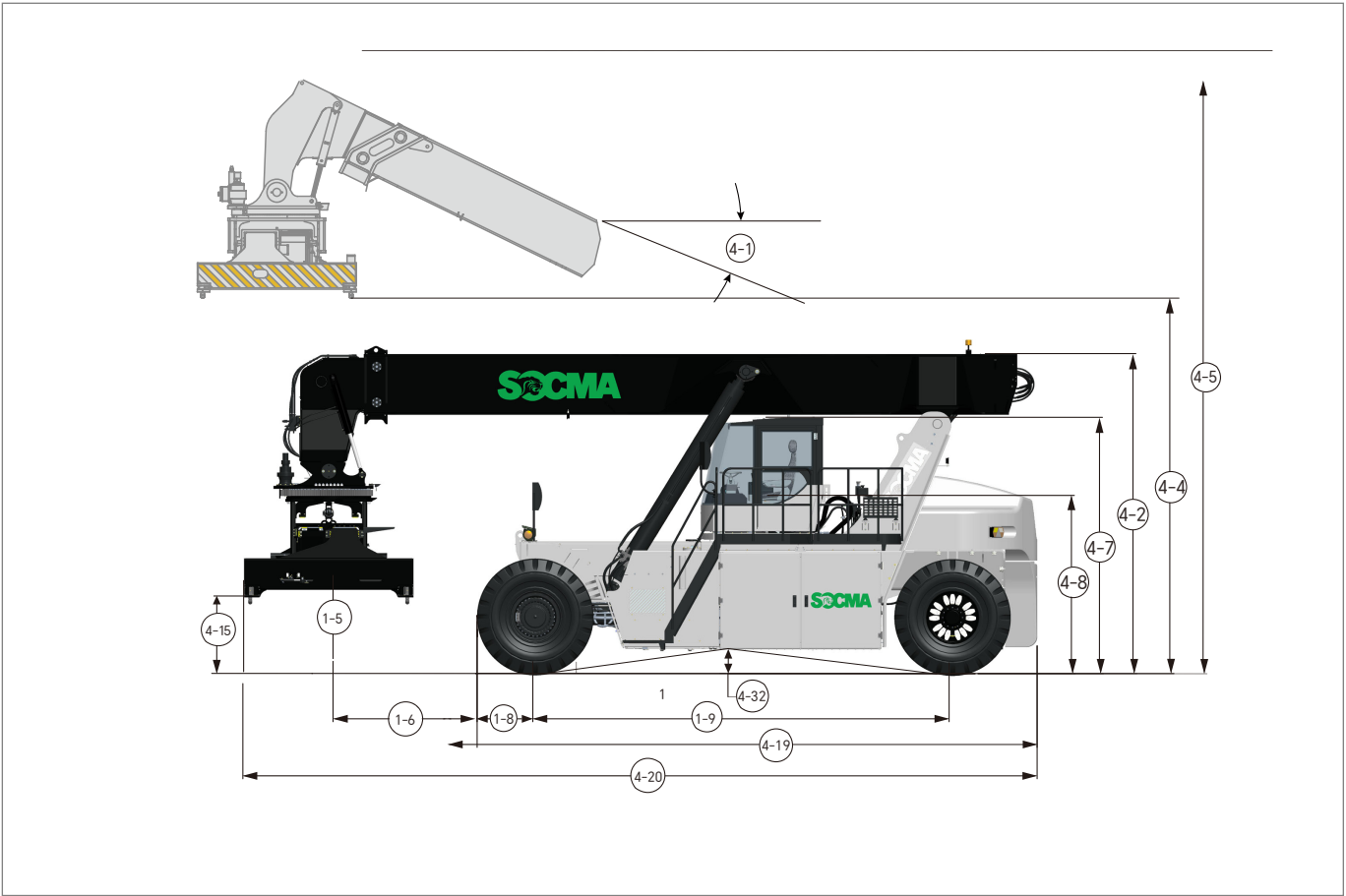
By employing flow amplification technology, even we use larger cylinders, our steering force is only 3N

Extra-large cab. Grammer suspension seat, Extra-large cooling capacity air conditioner.



		Unit	HNRS4531E
General	Battery type/Battery capacity		Lithium iron phosphate/507KWH
	1-5-1 Load capacity at load center distance c1, C2, C3	ton	45t/31t/15t
	1-6-1 Load center distance C1 ,C2, C3	mm	1965/3815/6315
	1-10 Stacking height at first row		5/5-5/4-4/3
	1-8 Load distance, center of drive axle to face of front tires	mm	838
Weight	1-9 Wheelbase	mm	6000
	2-1 Service weight	ton	118
	2-2-1 Axle loading with load (c1), front/rear	KN	101/17
Tire	2-3-1 Axle loading without load (c1), front/rear	KN	34/39
	3-1 Tire type/ Rated pressure	mpa	1.1
	3-2 Tire size, front		18.00-25 40PR
	3-3 Tire size, rear		18.00-25 40PR
	3-5 Number of tires, front/rear (X driven)		4/2
Dimensions	3-6 Tread, front	mm	3048
	3-7 Tread, rear	mm	2790
	4-1 Boom angle minimum/maximum	deg	0 ~ 60
	4-2 Height of boom lowered	mm	4625
	4-4-1 Lift height at load center c1 (2)	mm	15100
	4-4-2 Lift height at load center c2 (2)	mm	13700
	4-5 Height, boom extended	mm	17952
	4-7 Height of overhead guard (cabin)	mm	3656
	4-8 Seat height to SIP (3)	mm	2360
	4-15 Height under twistlock - lowered	mm	1181
	4-19 Overall length	mm	8021
	4-20 Overall length including boom retracted	mm	11370
	4-21-2 Overall width across all of truck	mm	4142
	4-21-3 Overall width across spreader 20'	mm	6053
	4-21-4 Overall width across spreader 40'	mm	12185
	4-32 Ground clearance, center or wheelbase	mm	480
	4-34-1 Aisle width: 20' container - Add 100mm clearance	mm	11797
	4-34-2 Aisle width: 40' container - Add 100mm clearance	mm	13965
	4-35 Outside turning radius	mm	8000
	4-36 Internal turning radius	mm	1200
Spreader	Side shift	mm	±800
	Rotation angle	deg	+105/-195
	Weight	ton	8.3
Hydraulic	Maximum Working Pressure Arm/Spreader	bar	260
	Hydraulic oil tank volume	L	850
Performance	5-1 Travel speed, with/without load	km/h	21/15
	5-2 Lifting speed, with/without load	mm/s	300/450
	5-3 Lowering speed, with/without load	mm/s	360/360
	5-7 Gradeability - with/without load (5)	%	20%/15%
	Traction	KN	198
Noise level (Inside cabin)		dB	72

Note: The above data are subject to change without prior notice





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