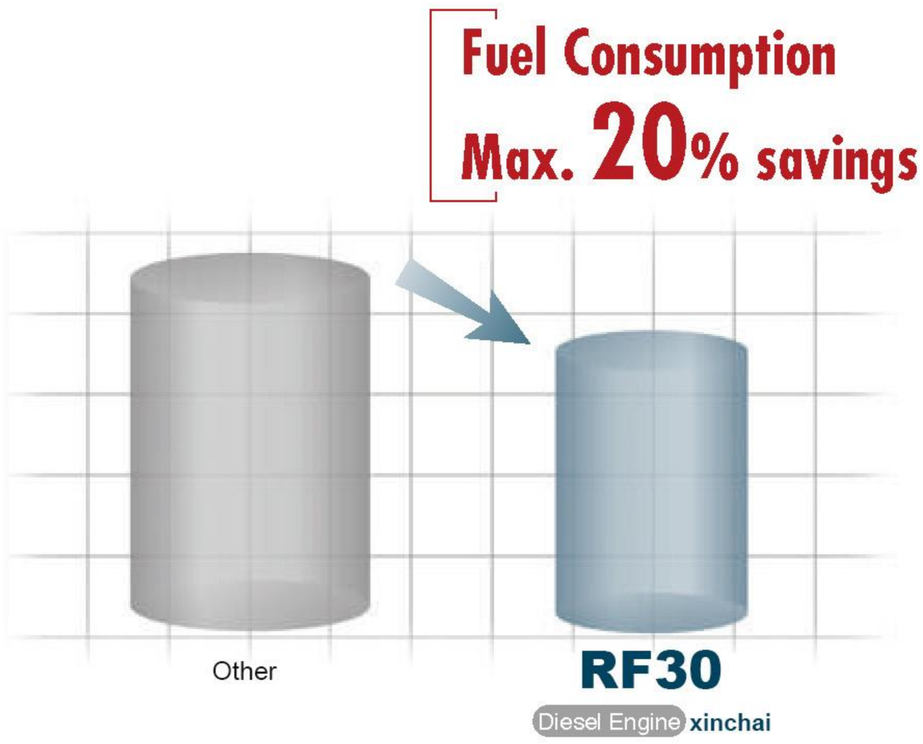
"Reducing Total Operating Costs" with Rippa Innovative Technologies

"Reducing Total Operating Costs" with Rippa Innovative Technologies,The fusion of advanced engine technologies and Rippa's unique hydraulic system enables the new RF30 series to achieve a significant reduction in total operation costs and facilitates superior working performance. Our innovative machines challenge the conventional concept of the forklift.

BEST ENGINE	*An optimum engine achieves lower fuel consumption and higher performance.*
HYDRAULIC SYSTEM	*Provides smooth and precise operation experience, especially in complex and multi-tasking operations*

Rippa's Hydraulic System and the NEW Diesel Engine reduce Fuel Consumption

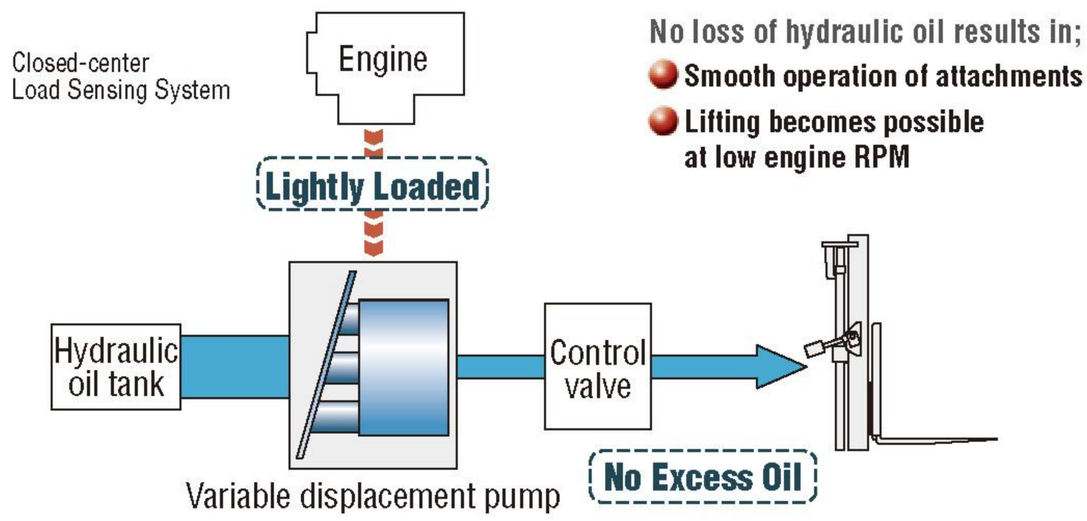
To minimize hydraulic losses and reduce engine load, the new RF30 series uses the tried-and-tested hydraulic system from RIPPA construction machinery. The compact diesel engine offers outstanding performance and reduces fuel consumption by up to 20%.



RIPPA tested data, comparison with other models.
The results may vary depending on conditions.

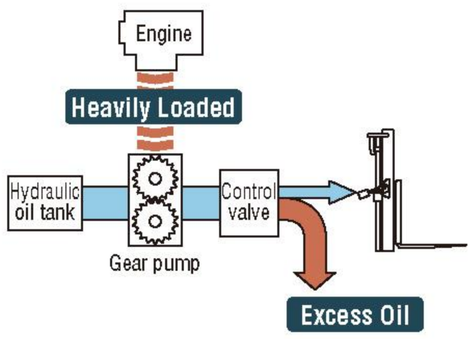
Contributes to Lower Fuel Consumption and Higher Productivity

The hydraulic load is automatically detected and only the appropriate amount of oil is supplied via a variable displacement pump. This system eliminates the loss of hydraulic oil and reduces the engine load.



Previous hydraulic system

A fixed amount of oil is supplied from the gear pump and excess oil is returned to the hydraulic oil tank. This resulted in increased engine load.



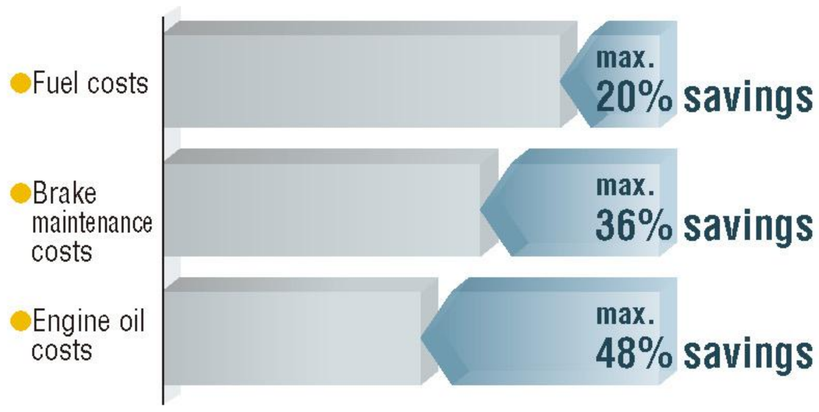
Greatly Reduced Total Operating Costs (Diesel)

Standard hydraulic brake system design, braking effect is fast and smooth. The size of the braking force can be flexibly controlled, only the brake fluid needs to be replaced regularly and the oil pipe needs to be inspected, and no other operating costs are required

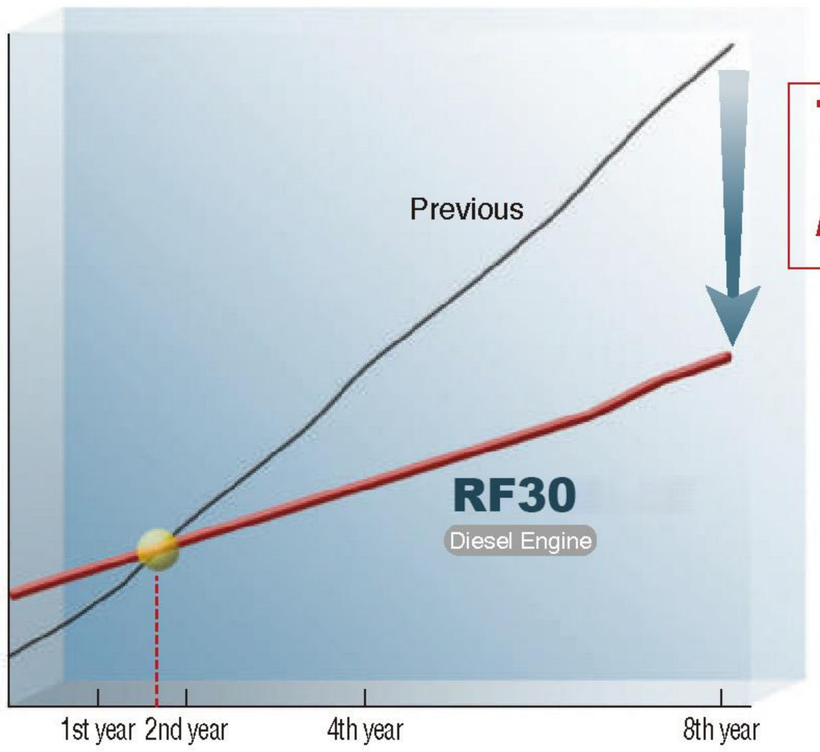
*A periodic check and oil replacement are necessary.

Running cost (Accumulated costs for 8 years)

Assuming RF30 as 100%



Total operating cost (*Image)



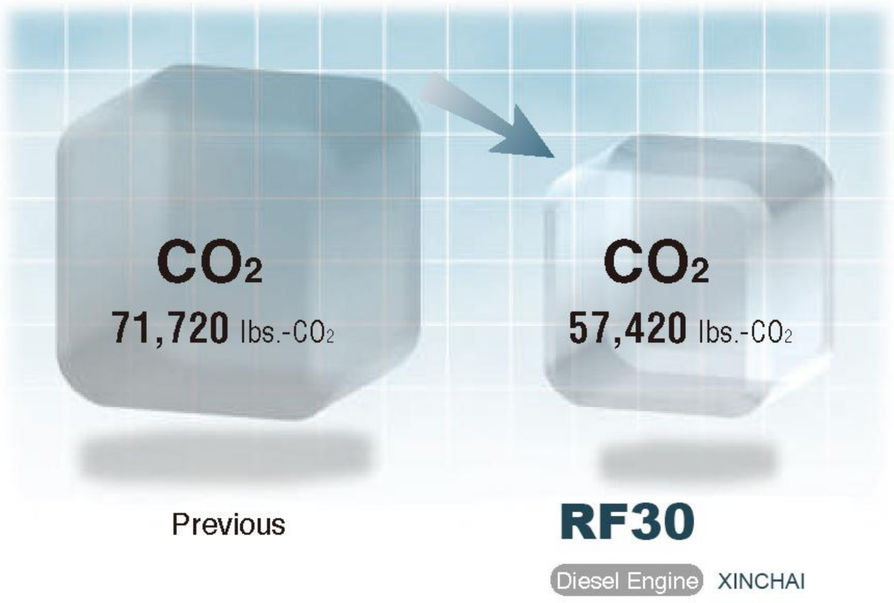
Total operating cost
Approx. 14% savings
(8 years)

Rippa tested data,
Comparison with RF30 model.
Operation hours: 5 h/day,
25 days/month (Total: Approx. 1500 h/year),
Maintenance intervals to manufacturer's recommendation.The results may vary depending on conditions.

Advanced Technology Offers Reduced CO_2 Emissions (Diesel)

The diesel model uses a new diesel engine combined with a high-efficiency hydraulic system, which can reduce carbon dioxide emissions by approximately 7.2 tons per year.

Annual CO_2 emissions
About 7.2 tons reduction



Rippa tested data, Comparison with Xinchai model.The results may vary depending on conditions.

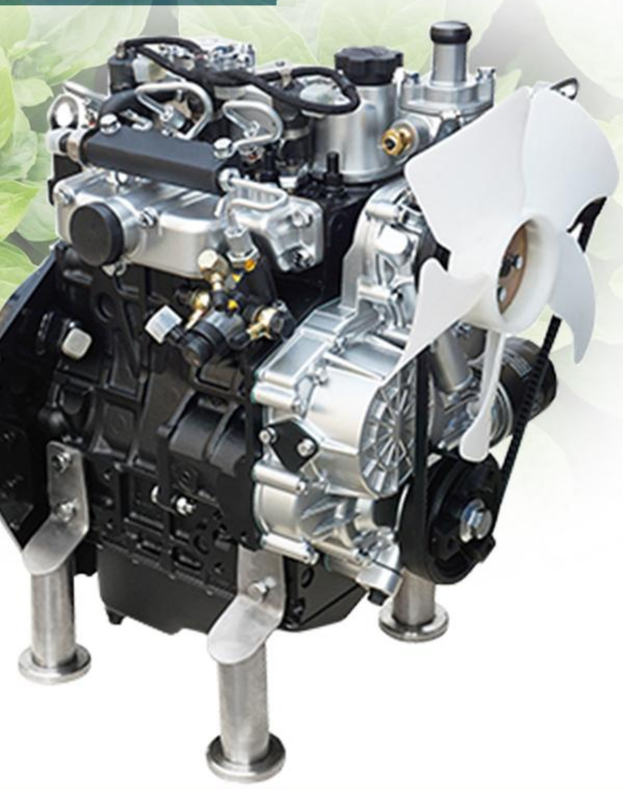
An Advanced Diesel Engine conforms to the Latest Emission Regulations

Low fuel consumption and low environmental impact are enabled by elimination of excess combustion and the use of the combined technologies of the high pressure common rail system, electronic control system, new combustion system and air-to-air charge air cooling system.

EPA TIER 4/EURO 5 EMISSION COMPLIANT

XINCHAI
POWER

POWER:
37KW
50HP



Cylinder oil seal

The oil cylinder is specially used for Chinese first-tier brand forklifts, and the oil seal is NOK imported from Japan

EPA and Euro 5 emission standards

RF30
Lifting height
3000mm
Full load climbing grade
15°/20°
Front track/Rear track
1030/992mm

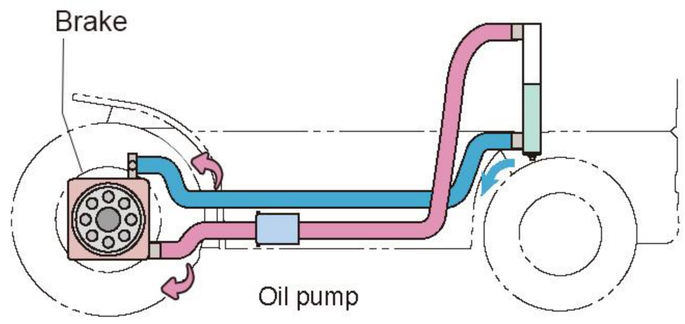
Superior "Productivity" and "Reliability" Satisfy Demanding Operational Needs

Durable hydraulic brakes with good braking feel

Strong braking force, good braking feel, fast response, high stability and easy maintenance. The component connection method makes maintenance and replacement of parts more convenient.

Liquid conduction improves braking stability

Liquid conduction is more stable and is not easily affected by environmental factors such as temperature and humidity. The driver can feel the force and degree of braking more clearly, thus better controlling the vehicle.



A Cushioning Valve improves the Braking Feel

Rippa's unique cushioning valve enables controlled braking force that precisely reflects the pressure on the brake pedal. The braking behavior is improved, and the operator has greater control.

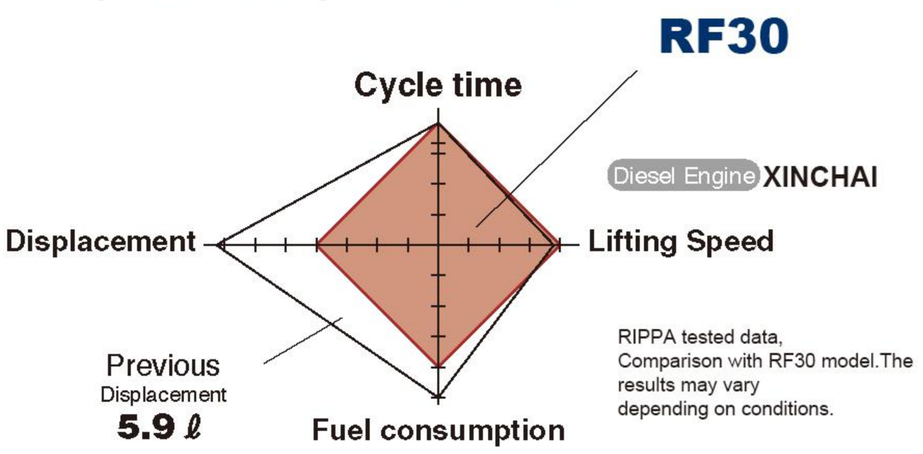
- **Strong braking force**
- **Rapid and smooth braking effect**
- **Good braking feel, leading to better vehicle control**
- **downtime and maintenance costs are reduced.**

First-class Productivity is achieved

First-class Cycle Time

The diesel models utilize a compact xinchai engine with the advanced hydraulic system to achieve high productivity and first class cycle times. The gasoline engine model is also designed to achieve higher productivity.

- **The NEW RF30 Series achieves high productivity equivalent to the previous R Series.**



- **Speed increase** (full load/no load)

350/500mm

- **Speed decreasefull** (full load/no load)

550/450mm

- **Maximum traction** (full load/no load)

17kn

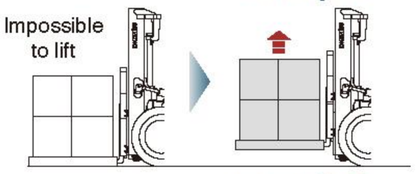
The CLSS enables Lifting at Low Engine RPMs

The CLSS makes it possible to lift the load for fine height adjustment without increasing the engine speed.

Reduced engine RPM in the following cases:

- **Fine adjustment of fork height**
- **Lifting fork tips before starting**
- **Fine adjustment for side shifting**

(FD40-10, Unloaded)



The CLSS enables advantages such as:

- **Smooth traveling during hydraulic operation**
- **Superior productivity when fitted with attachments**
- **Fuel consumption reduced by up to 20% (Diesel)**

Fully Hydrostatic Power Steering for Superb Maneuverability

The Fully Hydrostatic Power Steering (FHPS) system facilitates fully stationary steering as well as switchback operations using the small diameter steering wheel. The system has a superior response capability so that the operator can maneuver easily with a load even in a tight area.

Excellent Durability To Handle Demanding Work Cycles

Rugged Design with High Rigidity

The highly rigid mast, frame, and front and rear axles ensure outstanding reliability even when performing heavy-duty work.

[Mast]
A heavy mast rail profile for excellent rigidity.

[Frame]
Increased thickness for greater durability of the counterweight mounting section.

[Front axle]
New field proven design adopted from Komatsu wheel loader construction equipment.

[Rear axle]
The durability of the Power Steering cylinder is improved.

Improved Reliability in the Hydraulic and Electrical Systems

The main hydraulic pipe connectors use O-ring face seals to reduce the possibility of leaks. Waterproof connectors are used in the main harnesses and the system controller in order to provide higher resistance to water and dust. Hydraulic and electrical piping systems are in separate configurations to improve reliability and ease of service.

Engine Protection Systems to Keep the Engine in the Best Operating Condition

The electronic engine controls upgrade the performance of the engine protection system (fail-safe functions).

- Trouble diagnosis:
  Engine malfunctions are automatically detected and an alarm lamp blinks.
- Overheating prevention (Diesel):
  The engine output and RPMs are reduced when the coolant temperature is high.
- Automatic engine warm-up (Diesel):
  The RPMs are accelerated to warm up the engine at low temperatures.
- Automatic air pre-heating (Diesel):
  The engine is automatically pre-heated when starting at low temperatures.

Display Instruments

The Compact 3t model

The compact 3t. model features a shorter wheelbase and better maneuverability while maintaining the power and speed capable of achieving high productivity.

— Full height roof protection frame:
2186mm

— Fork pitch outside max/min
1100/240mm

- Wheelbase (front/rear)
1030/992mm

Advanced Design in Pursuit of "Safety and Comfort"

The reinforced gantry adopts independent side roller design.

Chain

Branded chains can bear more than five times the weight and have third-party test reports

Side scroll wheel

Adopt independent side roller design, the gap between door frames is small and does not wear the door frames, and the door frames will not shake after long-term use

Parking Brake Alarm

If the operator fails to engage the parking brake, an alarm will sound.

A Neutral Safety Function to Prevent an Inadvertent Start

The engine cannot be started unless the F-R switch is in the neutral position.

Neutral indicator for at-a-glance information

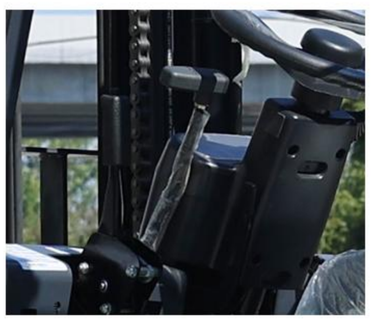
An Optional Wide Angle Center Mirror enables an Easy View Rearward

ANSI/ITSDF B56.1 Compliant Enhanced Overhead Guard for Operator Protection and

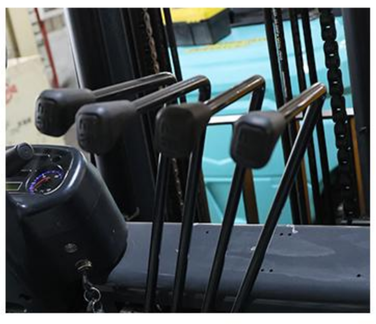
A Safety Mechanism that prevents starting the engine unless the brake pedal is depressed

Secure Operation Controls Improve Operator Work Efficiency

Secure Lever Controls with Minimum Movement



Finger-tip operation with the electric F/R lever



Control levers with contoured knobs for ease of control

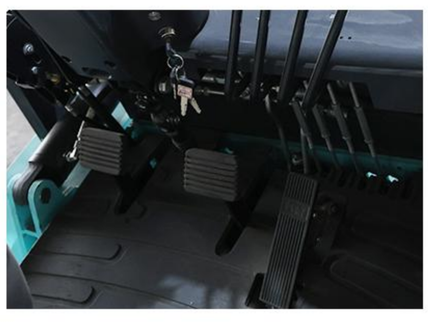
A Smaller Steering Wheel Permits Widened Forward Visibility

Use of a smaller steering wheel and redesigned dashboard have improved the visibility to the bottom of the forks, thus enhancing the lifting function.

Steering wheel diameter: 11.8”

Improved Braking Feel

Rippa’s unique cushioning valve enables control of the braking force in proportion to the pressure on the brake pedal and improves the braking feel.

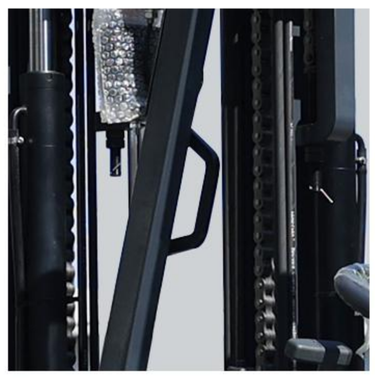


Greater Operator Comfort and Reduced Fatigue in Even the Toughest Applications

Dual Floating Structure Reduces Vibrations

A unique dual vibration cushioning system reduces vibrations in the compartment, steering wheel, control levers and the mast. Any vibrations transmitted from the engine or road surface are quickly absorbed. The system is friendly to both the operator and the load.

Smooth Entry and Exit



Enlarged assist grip

Improved engine hood and wide open step design

The Low Noise Design

The low-noise design of the engine and the fully sealed floorboard area reduce offending noise during operation.

Full Suspension Seat for Improved Operator Comfort

The deluxe full suspension seat features improved vibration resistance and reduced stress on the body.

- Seat cushion adjustment dial
- Retractable seat belt
- Semi-enclosed seat, more comfortable

Reduced Exposure to Hot Air/Exhaust Gas When Driving in Reverse

Two counterweight air outlets are provided on the left and right sides and an exhaust pipe outlet is provided at a lower position so that the operator is not exposed to hot air from the radiator or to exhaust gasses when driving in reverse.

Exhaust outlet

Exhaust gas purification device

Reduce the emission of harmful gases from the engine and effectively protect the environment

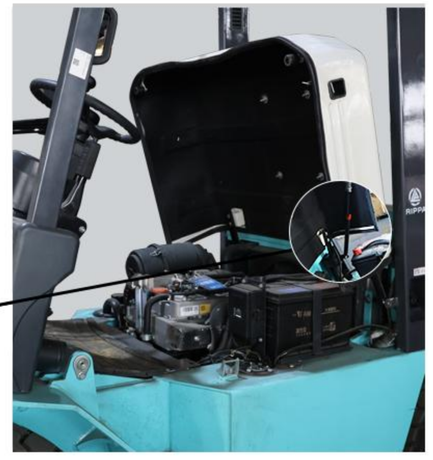
Careful Designs Facilitate Easier Serviceability

Easy Radiator Cleaning

Filter Layout Optimized for Improved Serviceability

A fully-opening floor plate.

Wide Opening Engine Hood with a Lock for Easy Servicing



■PRODUCT PARAMETERS

Model	Name	Unit	RF30
Model	Power type		Internal combustion engine (diesel)
	Rated load	Kg	3000 (6614)
	Load center distance	mm (in)	500 (19.7)
Sizel	Maximum lifting height of fork shelf with blocking	mm (in)	4260 (167.7)
	Maximum lifting height	mm (in)	3000 (118.1)
	Full height of gantry fork landing, gantry vertical	mm (in)	2081 (81.9)
	Free lifting height	mm (in)	100 (3.9)
	Height of blocking rackcalculated from the fork surface of gantry	mm (in)	1227 (48.3)
	Distance from seat surface to roof protection frame	mm (in)	1022 (40.2)
	Full height roof protection frame	mm (in)	2186 (86.1)
	Full lengthwithout fork	mm (in)	2852 (112.3)
	Front overhang distance	mm (in)	455 (17.9)
	Rear overhang	mm (in)	498 (19.6)
	Wheel base	mm (in)	1800 (70.9)
	Towing pin height	mm (in)	310 (12.2)
	Minimum ground clearance	mm (in)	174 (6.9)
	Full width	mm (in)	1234 (48.6)
	Fork pitch outside max/min	mm (in)	1100/240 (43.3/9.4)
	Track width front/rear	mm (in)	1030/992 (40.6/39.1)
	Outside of minimum turning radius	mm (in)	2407 (94.8)
	Inside of minimum turning radius	mm (in)	1582 (62.3)
	Minimum right angle radius width	mm (in)	2507 (98.7)
	Gantry tilt Angle(front/back)	mm (in)	6 front and 12 rear
	Fork size	mm (in)	1070*45*120 (42.1*1.8*4.7)
Mechanical properties	Maximum driving speed full load/no load	Km/h (mph)	18/20 (11.2/12.4)
	Speed increase full load/no load	mm/s	350/500
	Speed decreasefull load/no load	mm/s	550/450
	Maximum traction full load/no load	KN (lbf)	17 (3822)
	Maximum climbing capacity full load/no load	%	15/20
Weight	Total weight	Kg (lb)	4320 (9524)
	Weight distribution full load front/rear	Kg (lb)	6480/920 (14286/2028)
	Weight distribution no load front/rear	Kg (lb)	1730/2580 (3814/5688)
Wheels and tires	Number of wheels x/drive wheel		2X/2
	Tire type front/rear		Pneumatic tire
	Front tire		28*9-15
	Rear tire		6.50-10
	Service brake		Hydraulic brake
	Parking brake		Mechanical
Drive, transmission control device	Engine model		changchai/Yanmar
	Reducer model		4G33TC/498
	Engine power	kw (hp)	37/44(50/59)
	Engine speed	r/min	2300/3000
	Number of transmission shifts		2 front and 2 rear