CASE CONSTRUCTION

INTERNATIONAL

# F-SERIES WHEEL LOADERS

## 721F | 821F

## TIER 3


## FAST, PRODUCTIVE, FUEL EFFICIENT

# FAST, PRODUCTIVE, FUEL EFFICIENT

## Be ready for the best:

- Advanced Engine Technology
- High Efficiency Transmission
- High Productivity Differential and Axles
- Low Maintenance Cooling Design
- Premium Ergonomics

# F-SERIES WHEEL LOADERS

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## TIER 3

# ADVANCED ENGINE TECHNOLOGY
# EFFICIENT TRANSMISSION


## 10% Lower fuel consumption

The high combustion temperature result in optimum engine performance. The second generation common rail engine ensures better engine control at all rpm. The multiple injection technology delivers optimum combustion control.

## Outstanding flat torque

The second generation common rail engine ensures better engine control at all rpm and the 100% fresh air input further improves engine output. The multiple injection technology ensures optimum combustion control, while the 1600 bar injection delivers  best-in-class torque performance.


## 10% Additional fuel efficiency and less maintenance

Proshift delivers 10% more fuel savings than older type 4-speed transmissions and lengthens the life of transmission oil from 1000 to 1500 hours, resulting in maintenance intervals being 50% longer.
The premium performance of Proshift results in a superior resale value for the 721F and 821F, as no equivalent model offers such a superior performance.

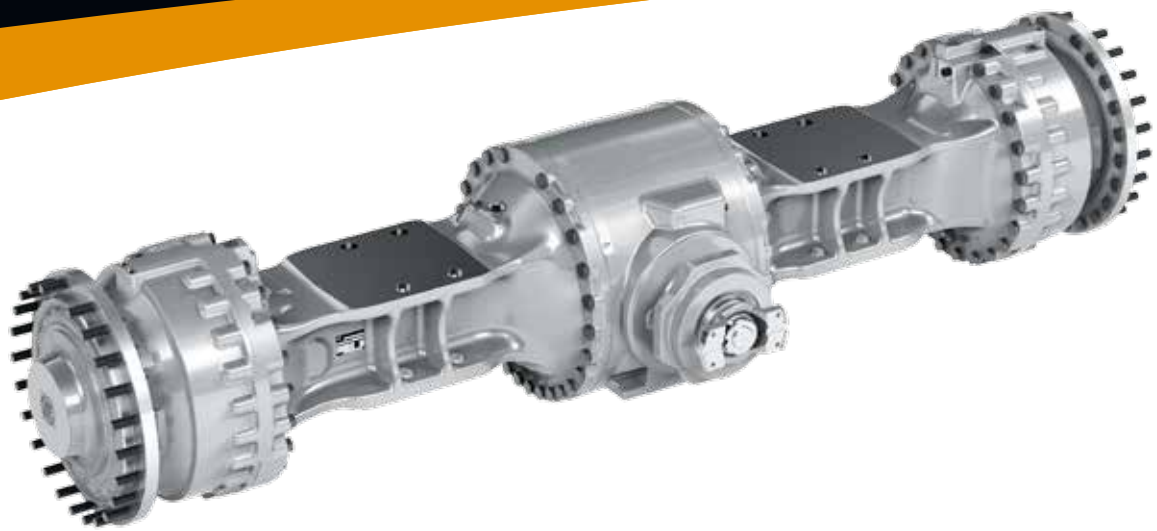
## Maximum productivity

Proshift delivers faster acceleration and, with the slightly shorter 2nd gear, more pushing power.

## Superior comfort

Proshift results in a remarkably comfortable ride, with exceptionally smooth gear change and, when braking, with engine de-rating.

# HIGH PRODUCTIVITY DIFFERENTIAL AND AXLES



## New heavy-duty axles

The new heavy-duty axles are tougher, bigger and easier to service with the 3-piece housing design. Wet multiple disc brakes made of resistant sinter bronze are located in each wheel hub.

## Front differential with 100% Auto-lock

With 100% Auto-lock, 100% of the available torque goes to the wheel with adherence, a big step up from the 75% of a limited slip differential! There is no slippage between the wheels and no friction in the differential.
The Auto-lock is activated automatically when a front wheel is about to slip, or you can easily do it manually with your left foot.

## Open differentials front and rear

With open differentials, no friction is applied to reduce wheel slip, resulting in less wear and lower energy losses.

To reduce your initial investment:

- 721F and 821F are also available with limited slip differentials, heavy-duty front axle and standard rear axles


With L5 tyres, needed for work in very abrasive environments, we recommend heavy-duty axles. Solid tires can be retrofitted

## More productivity

100% of available torque is transmitted to the wheels, delivering optimum pushing power.

## Greater return on investment

Tyre wear is reduced by 20-30% because there is no slippage between the wheels, fuel consumption is lower because there is no friction in the differential, less maintenance is needed because there are fewer moving components with open differentials. The result: better resale value.

## Always reliable

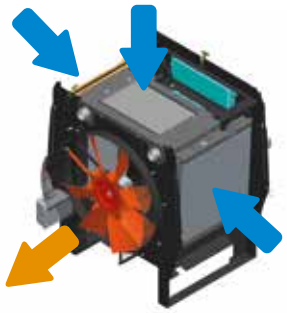
The heavy duty axles and open differentials result in superior reliability.

# LOW MAINTENANCE COOLING DESIGN


## Better weight distribution with the rear mounted engine

## The cooling cube

The unique design, with the five radiators mounted to form a cube instead of overlapping, ensures that each radiator receives fresh air and that clean air enters from the sides and the top, maintaining constant fluid temperatures. The high efficiency of the cooling system lengthens the life of the coolant to 1500 hours.
The standard reversible fan can be activated from the cab and is very effective thanks to the cooling cube
The engine is mounted at the rear of the machine. This, together with the lower fan speed (just 1200 rpm), results in lower noise and vibration levels in the cab.



## Designed for dusty environment

The cooling system is mounted behind the cab, far from the rear of the machine and from the ground - away from the dust.


## Less maintenance

The radiators are easy to clean with the reversible fan, which is activated from the cab. The cube design of the cooling system results in more effective cleaning of the radiators, and additional cleaning can be easily done manually, with separate access to each radiator. The efficient cube design also results in a longer life for the cooling fluid, which lasts 500 hours more, so that change intervals are 1500 hours.

## Increased reliability

The constant temperature of the fluid maximises its cooling performance and protects the axles, resulting in greater reliability. This is further enhanced by the easy maintenance and longer service intervals.
The better weight distribution means that a smaller counterweight or dead weight is needed, which reduces stress on the axles and the brakes.

## Upper class bucket payload

Don't be surprised to notice our wheel loader has the same payload as a competitive model of the upper class of weight: this happens because the rear engine position allows to reduce significantly the amount of dead weight in the machine

# PREMIUM ERGONOMICS

## Protected cab

Our reinforced cab guarantees protection against roll over (ROPS) and falling objects (FOPS)


## Low operator vibrations

Engine noise and vibrations are reduced by 3-step injection: pre-, main- and post-injection. To further increase the operator comfort the rear monted engine is distant from the cab and standard the seat air suspended. Heated seat is optional.

## All controls at your fingertips

## Outstanding all-round visibility

You'll feel more confident and work faster with the great all-round visibility provided by the very low shape of the curved rear hood and the ample glazed surfaces.
17 air vents ensure your comfort and prevent the windshields from steaming up.


CASE

# PREMIUM ERGONOMICS

## Hydraulic functions that add to your comfort

To maximise your focus on the job and reduce your stress levels, you can activate the following functions from the ergonomically positioned control panel under your right hand:

- Auto-shift : ensures the machine always operates in the most suitable gear according to speed, kick down and engine braking
- Reverse button on the joystick: activates front, neutral or reverse
- Return to dig : brings back the bucket in the right position for loading again
- Return to travel : lowers the boom to carry position, which can be adjusted
- Auto-lift : lifts the boom to the max height you have set
- Auto-Ride Control: reduces loader arm bounce during travel, maintaining maximum material retention. It activates from 8 km/h
- Auto-diff lock : The 100% differential lock can be activated manually with your left foot or automatically for greater focus on the job
- Auxiliary circuit lever: For hydraulic attachments such as high tip bucket, you can order the optional auxiliary circuit controlled by a lever next to the joystick for your ease of use.

## Joystick steering

Long days of repetitive cycles go faster with joystick steering (optional) because your sitting position is better.
The steering wheel is maintained for a better handling. You will appreciate it during transfers on uneven terrains, on a descending slope and in case of emergency

## Levers controls

Depending on your habits you may prefer the optional 2-lever control to the standard joystick control. The optional 3rd lever controls the attachment auxiliary circuit.
It can also be retrofitted as a kit.

# F-SERIES WHEEL LOADERS

## 721F | 821F

## TIER 3

# FAST AND EASY MAINTENANCE

## One-piece electric hood

The positioning of the engine at the rear and the easy-to-open electric hood ensure fast access to the service points. Jumper cables are available as standard for jump starting the engine if the battery is low.

## Ground level maintenance design

Don't be surprised if you don't see any safety handrails around the hood or steps behind the rear wheels, all service points are easily accessible at ground level. You can do a fast visual check of the hydraulic and transmission oil levels. The three drains are grouped together on the left side, below the hood and battery switches, so that fluids are easy and quick to replace.

## Less maintenance, more uptime

You can maximise the working time with these wheel loaders, with the long service intervals of 1500 hours for the transmission oil and filter, the axle oil and filter, and the coolant.
The positioning of the cooling system behind the cab means that it needs less cleaning, and the cooling cube design enables you to clean very efficiently with the reversible fan as well as manually.
Both pumps and engine distributions rely on one belt only for faster maintenance

## Greater Safety

All the main service points are easily accessible from the ground, so you can carry out your daily maintenance safely and efficiently.

*The layout of the components under the hood is optimized and results in easier maintenance.*


*Hood opening and battery on/off switches. In case of flat battery, hood opening can be done externally with remote jump start*

*Grouped drains*


CASE

# THE DNA OF YOUR 721F

## Productivity (50-meter distance cycle)

Considering: density: 1,8 t/m$^3$, fill factor: 100%, 52 cycles/hour and each hour includes a 5-minute break _____ 140 m$^3$/h or 280 t/h
52 loading cycles/h with standard bucket 2.7 m$^3$ or 5.4 ton

## Engine Tier 3

Compliant with Tier 3 (EU stage 3a)
FPT turbocharged engine F4HE9684F with:
- 100% fresh air combustion
- Air to Air intercooler
- Common rail (1.600 bar)
- Multiple injections similar to multi-jet automotive technology

to achieve best in class load response, max torque and power with the minimum fuel consumption.
6 cylinders -6,7 liters
Max power SAE J1995 _____ 145 kW / 195 hp @1800 rpm
Maximum torque SAE J1349 _____ 950 Nm @1300 rpm

## Transmission

All-wheel drive with planetary axles
Kick-down function
**4-speed torque converter**
4-speed auto Powershift switchable to manual shifting
ZF , switchable to manual shifting
forward speeds _____ 8-13-25-37 Km/h
reverse speeds _____ 8-13-26 Km/h
Adjustable transmission declutch

## Axles and differential

For outstanding traction with 50% longer maintenance intervals and 30% less tire wear
Front auto-lock differential _____ 100% of available torque is always guaranteed on the wheel(s) with traction
Front and rear ZF Heavy Duty axles (options) with Open Differential
Excellent traction:
Limited slip differential front and rear ___ when one wheel slips 73% of the available axle torque is guaranteed on the other wheel
Front _____ Heavy Duty axle +(ZF type MT-L3085-II)
Rear _____ standard axle (ZF type MT-L3075-II)
Rear axle total oscillation _____ 24°

## Tyres

Tyres _____ 20,5R25

## Brakes

Service brake _____ Maintenance free, self-adjusting wet 4-wheel disc brakes
Area _____ 0.39 m$^2$/hub
Parking brake _____ Disc brake on transmission activated from the cab cluster
Area _____ 82 cm$^2$

## Hydraulic

Valves _____ Rexroth Closed-center, Load sensing hydraulic system. Main valve with 3 sections
Steering _____ The steering orbitrol hydraulically is actuated with priority valve
Type of pump _____ Tandem Variable displacement pump (206 l/min @2000 rpm)
Automatic hydraulic functions
- Bucket Return-to-dig
- Boom Return-to-travel
- Auto.lift (to adjustableheight)

Control type _____ Pilot control with single joystick or two levers

## Capacities

Fuel tank _____ 246 usable litres
Cooling system _____ 28 litres
Engine oil _____ 15 litres
Hydraulic oil _____ Tank: 91 litres, total system: 180 litres
Transmission oil _____ 34 litres

## Cab and controls

For you safety the cab complies to:
protection against falling objects (FOPS) _____ ISO EN3449
protection against roll over (ROPS) _____ ISO EN13510

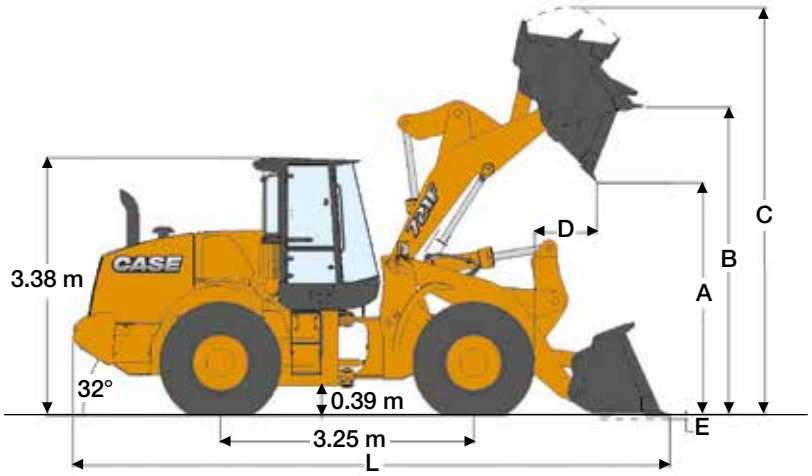
## Noise and vibration

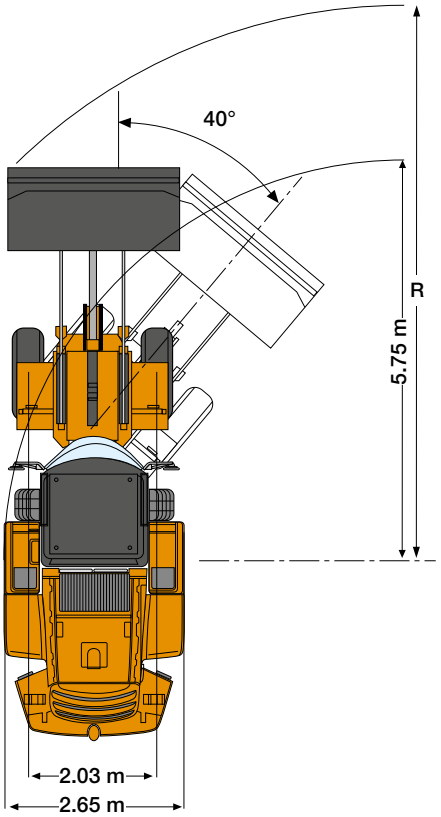
Driving noise in dB (A) 82 to SAE J88 @ 15 meters
Interior noise _____ 72 LpA as per ISO6395/6396/3744
Exterior noise _____ 71 dB(A) at 15 meters as per SAE J88 SEP80
103 LwA according to ISO6395/6396/3744
Switchable reverse gear alarm
Vibrations _____ air-cushioned seat MSG 95A/732
average 1.4m/s$^2$ as per ISO/TR 25398:2006

## Electrical system

24V. Batteries 2 x 12V.
Alternator _____ 65A

# 721F Specifications




| LOADER SPEED | |
|---|---|
| Raising time (loaded) | 5.2 sec |
| Dump time (loaded) | 1.2 sec |
| Lowering time (empty, power down) | 2.5 sec |
| Lowering time (empty, float down) | 2.4 sec |

| 721F | | Z-BAR buckets | | | | XR buckets (extra reach) | | | | XT buckets (parallel lift) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2.7 m³ | | 2.4 m³ w/QC | | 2.7 m³ bucket | | 2.4 m³ w/QC | | 2.4 m³ w/QC | |
| | Bucket with bolt on: | edge | teeth | edge | teeth | edge | teeth | edge | teeth | edge | teeth |
| Bucket volume (heaped) | m³ | 2.7 | 2.7 | 2.4 | 2.4 | 2.7 | 2.7 | 2.4 | 2.4 | 2.4 | 2.4 |
| Bucket Payload | kg | 5440 | 5369 | 5299 | 5325 | 4533 | 4464 | 4385 | 4409 | 4924 | 4946 |
| Maximum material density | tonnes/m³ | 2.0 | 2.0 | 2.2 | 2.2 | 1.7 | 1.7 | 1.8 | 1.8 | 2.1 | 2.1 |
| Bucket outside width | m | 2.73 | 2.73 | 2.47 | 2.47 | 2.73 | 2.73 | 2.47 | 2.47 | 2.47 | 2.47 |
| Bucket weight | kg | 1237 | 1344 | 1656 | 1619 | 1237 | 1344 | 1656 | 1619 | 1627 | 1590 |
| Tipping load - straight | kg | 12435 | 12292 | 11356 | 11405 | 10419 | 10280 | 10129 | 10177 | 11280 | 11326 |
| Tipping load - Articulated at 40° | kg | 10881 | 10738 | 10599 | 10649 | 9066 | 8927 | 8770 | 8818 | 9847 | 9893 |
| Breakout force | kg | 14236 | 12885 | 12185 | 11284 | 14160 | 12817 | 12040 | 11151 | 12016 | 11193 |
| Lift capacity from ground | kg | 13607 | 13480 | 13419 | 13462 | 11302 | 11177 | 11072 | 11115 | 13096 | 13111 |
| A - Dump height at 45° at full height | m | 2.93 | 2.86 | 2.82 | 2.74 | 3.33 | 3.26 | 3.21 | 3.14 | 2.77 | 2.69 |
| B - Hinge pin height | m | 3.98 | 3.98 | 3.98 | 3.98 | 4.37 | 4.37 | 4.37 | 4.37 | 4.16 | 4.16 |
| C - Overall height | m | 5.52 | 5.52 | 5.51 | 5.51 | 5.91 | 5.91 | 5.90 | 5.90 | 5.67 | 5.66 |
| D - Bucket reach at full height | m | 1.13 | 1.21 | 1.28 | 1.36 | 1.13 | 1.21 | 1.28 | 1.36 | 1.27 | 1.36 |
| E - Dig depth | cm | 7.4 | 7.4 | 6.2 | 6.7 | 7.6 | 7.7 | 6.5 | 6.9 | 21 | 21.3 |
| Overall length without bucket | m | 6.53 | 6.53 | 6.53 | 6.53 | 6.85 | 6.85 | 6.85 | 6.85 | 6.52 | 6.52 |
| L - Overall length with bucket on the ground | m | 7.65 | 7.76 | 7.83 | 7.95 | 7.65 | 7.76 | 8.18 | 8.30 | 8.12 | 8.24 |
| R - Turning radius to front corner of the bucket | m | 6.3 | 6.4 | 6.3 | 6.3 | 6.5 | 6.5 | 6.5 | 6.5 | 6.2 | 6.3 |
| Bucket rollback in carry position | ° | 43 | 43 | 38 | 38 | 41 | 41 | 36 | 36 | 58 | 58 |
| Dump angle at full height | ° | 55 | 55 | 61 | 61 | 55 | 55 | 61 | 61 | 54 | 54 |
| Machine operating weight | kg | 14225 | 14532 | 14844 | 14807 | 14644 | 14751 | 15063 | 15026 | 14915 | 14878 |

Note: bucket specification can slightly differ according to plant source. More bucket choice is available, please contact your local dealer.

# THE DNA OF YOUR 821F

## Productivity (50-meter distance cycle)

Considering: density: 1,8 t/m$^3$, fill factor: 100%, 52 cycles/hour and each hour includes a 5-minute break _____ 160 m$^3$/h or 320 t/h
52 loading cycles/h with standard bucket 3.4 m$^3$ or 6.2 ton

## Engine Tier 3

Compliant with Tier 3 (EU stage 3a )
FPT turbocharged engine F4HE9684E with:
- 100% fresh air combustion
- Air to Air intercooler
- Common rail (1.600 bar)
- Multiple injections similar to multi-jet automotive technology

to achieve best in class load response, max torque and power with the minimum fuel consumption.
6 cylinders -6,7 liters
Max power SAE J1995 _____ 172kW / 230 hp @1800 rpm
Maximum torque SAE J1349 _____ 1184 Nm @1300 rpm

## Transmission

All-wheel drive with planetary axles
kick-down function
**4-speed torque converter**
4-speed auto Powershift switchable to manual shifting
ZF , switchable to manual shifting
forward speeds _____ 7-12-23-37 Km/h
reverse speeds _____ 7-13-25 Km/h
Adjustable transmission declutch

## Axles and differential

For outstanding traction with 50% longer maintenance intervals and 30% less tire wear
Front auto-lock differential _____ 100% of available torque is always guaranteed on the wheel(s) with traction
Front and rear ZF Heavy Duty axles with Open Differential
Excellent traction:
Limited slip differential front and rear ___ when one wheel slips 73% of the available axle torque is guaranteed on the other wheel
Front _____ Heavy Duty axle +(ZF type MT-L3095-II)
Rear _____ standard axle (ZF type MT-L3085-II)
Rear axle total oscillation _____ 24°

## Tyres

Tyres _____ 23,5R25

## Brakes

Service brake _____ Maintenance free, self-adjusting wet 4-wheel disc brakes
Area _____ 0.39 m$^2$/hub
Parking brake _____ Disc brake on transmission activated from the cab cluster
Area _____ 82 cm$^2$

## Hydraulic

Valves _____ Rexroth Closed-center, Load sensing hydraulic system. Main valve with 3 sections
Steering _____ The steering orbitrol hydraulically is actuated with priority valve
Type of pump _____ Tandem Variable displacement pump (240 l/min @2000 rpm)
Automatic hydraulic functions
- Bucket Return-to-dig
- Boom Return-to-travel
- Auto.lift (to adjustableheight)

Control type _____ Pilot control with single joystick or two levers

## Capacities

Fuel tank _____ 288 usable litres
Cooling system _____ 30 litres
Engine oil _____ 15 litres
Hydraulic oil _____ Tank: 91 litres, total system: 180 litres
Transmission oil _____ 34 litres

## Cab and controls

For you safety the cab complies to:
protection against falling objects (FOPS) _____ ISO EN3449
protection against roll over (ROPS) _____ ISO EN13510

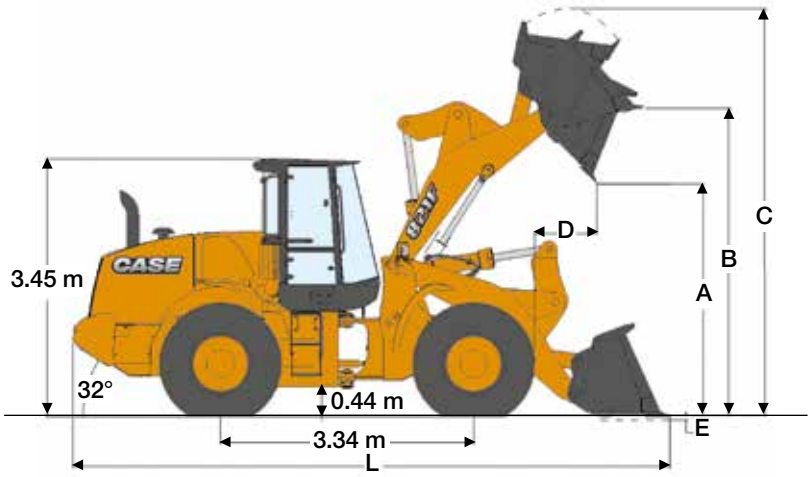
## Noise and vibration

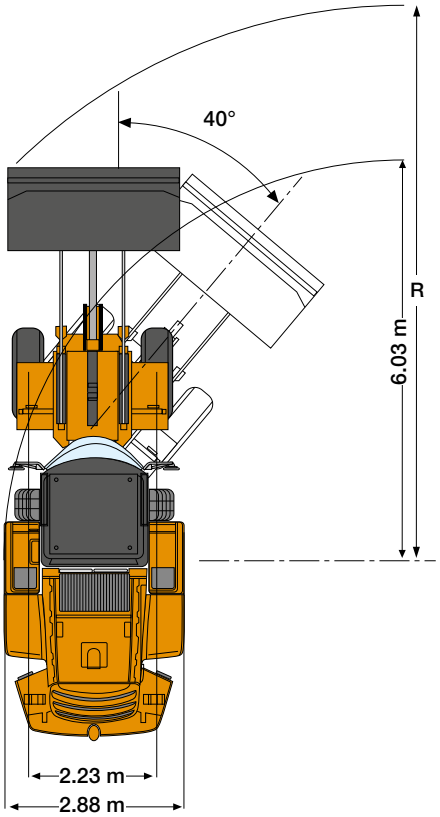
Driving noise in dB (A) 82 to SAE J88 @ 15 meters
Interior noise _____ 72 LpA as per ISO6395/6396/3744
Exterior noise _____ 71 dB(A) at 15 meters as per SAE J88 SEP80
103 LwA according to ISO6395/6396/3744
Switchable reverse gear alarm
Vibrations _____ air-cushioned seat MSG 95A/732
average 1.4m/s$^2$ as per ISO/TR 25398:2006

## Electrical system

24V. Batteries 2 x 12V.
Alternator _____ 65A

# 821F Specifications




| LOADER SPEED | |
|---|---|
| Raising time (loaded) | 6.2 sec |
| Dump time (loaded) | 1.2 sec |
| Lowering time (empty, power down) | 2.9 sec |
| Lowering time (empty, float down) | 2.5 sec |

| | | | | Z-BAR buckets | | | | XR buckets (extra reach) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 821F | | 3.4 m³ | | 3.2 m³ | | 2.8 m³ | | 3.2 m³ | | 2.8 m³ | |
| | Bucket with bolt on: | edge | teeth | edge | teeth | edge | teeth | edge | teeth | edge | teeth |
| Bucket volume (heaped) | m³ | 3.42 | 3.24 | 3.20 | 3.10 | 2.8 | 2.5 | 3.2 | 3.1 | 2.8 | 2.5 |
| Bucket Payload | kg | 6146 | 6268 | 6184 | 6295 | 6274 | 6478 | 4878 | 4970 | 4968 | 5123 |
| Maximum material density | tonnes/m³ | 1.80 | 1.94 | 1.93 | 2.03 | 2.24 | 2.59 | 1.53 | 1.60 | 1.77 | 2.05 |
| Bucket outside width | m | 2.95 | 2.95 | 2.94 | 2.94 | 2.95 | 2.94 | 2.95 | 2.94 | 2.95 | 2.94 |
| Bucket weight | kg | 1550 | 1460 | 1520 | 1430 | 1366 | 1276 | 1520 | 1430 | 1366 | 1276 |
| Tipping load - straight | kg | 14203 | 14465 | 14284 | 14523 | 14465 | 14917 | 11366 | 11562 | 11547 | 11889 |
| Tipping load - Articulated at 40° | kg | 12293 | 12536 | 12367 | 12590 | 12547 | 12955 | 9756 | 9941 | 9936 | 10246 |
| Breakout force | kg | 15076 | 16133 | 15473 | 16676 | 17751 | 19180 | 15721 | 16953 | 18032 | 19496 |
| Lift capacity from ground | kg | 17976 | 18137 | 18055 | 18201 | 18263 | 18559 | 13725 | 13885 | 13938 | 14237 |
| A - Dump height at 45° at full height | m | 2.94 | 2.86 | 2.96 | 2.88 | 3.06 | 2.99 | 3.34 | 3.33 | 3.50 | 3.43 |
| B - Hinge pin height | m | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 | 4.12 | 4.56 | 4.56 | 4.56 | 4.56 |
| C - Overall height | m | 5.49 | 5.49 | 5.45 | 5.45 | 5.29 | 5.29 | 5.89 | 5.89 | 5.73 | 5.73 |
| D - Bucket reach at full height | m | 1.17 | 1.13 | 1.15 | 1.27 | 1.02 | 1.14 | 1.26 | 1.38 | 1.14 | 1.26 |
| E - Dig depth | cm | 7 | 5 | 7 | 5 | 7 | 5 | 14 | 11 | 14 | 11 |
| L - Overall length with bucket on the ground | m | 7.94 | 8.06 | 7.90 | 8.03 | 7.74 | 7.86 | 8.39 | 8.52 | 8.23 | 8.35 |
| Overall length without bucket | m | 6.78 | 6.78 | 6.78 | 6.78 | 6.78 | 6.78 | 7.24 | 7.24 | 7.24 | 7.24 |
| R - Turning radius to front corner of the bucket | m | 6.6 | 6.7 | 6.6 | 6.6 | 6.6 | 6.6 | 6.9 | 6.9 | 6.8 | 6.8 |
| Bucket rollback in carry position | ° | 44 | 44 | 44 | 44 | 44 | 44 | 43 | 43 | 43 | 43 |
| Dump angle at full height | ° | 55 | 55 | 55 | 55 | 55 | 55 | 49 | 49 | 49 | 49 |
| Machine operating weight | kg | 17694 | 17604 | 17664 | 17574 | 17510 | 17420 | 18046 | 17956 | 17892 | 17802 |

Note: bucket specification can slightly differ according to plant source. More bucket choice is available, please contact your local dealer.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INTERNATIONAL

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NOTE: Standard and optional fittings can vary according to the demands and specific regulations of each country. The illustrations may include optional rather than standard fittings - consult your Case dealer. Furthermore, CNH reserves the right to modify machine specifications without incurring any obligation relating to such changes.

Conforms to directive 2006/42/EC CE

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CASE CONSTRUCTION
175 YEARS OF INNOVATION

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