

GRADER

ENGINE

| | |
|---------------------------|--|
| Brand | CASE/FPT |
| Model | F4HE9687C*J108 |
| Type | Electronic, diesel, 4-stroke, direct injection, turbocharged, Tier 3 certified |
| Cylinders | 6 |
| Bore and stroke | 4.09 x 5.19 in (104 x 132 mm) |
| Cylinder volume | 408.86 in ³ (6,7 l) |
| Power @ 2200 rpm | |
| Gross (SAE J1995) | 193/205/220 hp (144/153/164 kW) |
| Net (SAE J1349) | 178/190/205 hp (133/142/153 kW) |
| Maximum torque @ 1500 rpm | |
| Gross (SAE J1995) | 612/649/685 lbf.ft (830/880/930 Nm) |
| Net (SAE J1349) | 548/581/613 lbf.ft (743/788/832 Nm) |

POWER TRAIN

| | |
|---|--|
| Rear axle | |
| Ground clearance | 1 ft 3 in (380 mm) |
| Differential | Conventional planetary with electro-hydraulic lock 100%, operator driven |
| *Brakes | Disk, in oil bath |
| Number of disks per brake | 5 |
| Tandem | |
| Type | Welded panel |
| | 7' 2.7" x 2' 0.8" x 8" (2204 x 631 x 201 mm) |
| Oscillation | 20° in each direction |
| Command chain pitch | 2 in (50,8 mm) |
| Thickness of inner and external side wall | 0.75 in (19 mm) |
| Front axle | |
| Type | Welded high resistance steel |
| Oscillation | 15° in each direction |
| Wheel lean | 20° in each direction |
| Ground clearance | 1 ft 11 in (580 mm) |

| | |
|------------------------------------|-----------------------------|
| Tyres | 17,5 X 25 12P - L2 tubeless |
| Rims | 14" (3 piece) |
| *SAE J150 3450 (brake performance) | |

ELECTRICAL SYSTEM

| | |
|----------------------------------|---------------------------------------|
| Voltage | 24 V (with grounding) |
| Alternator | 90 A |
| Batteries | 2x100 Ah – low maintenance |
| Lights | |
| | Front headlight with turn signals (2) |
| | Brake light and rear turn signals (2) |
| | Rear cab mounted work light (2) |
| | Front cab mounted work light (2) |
| Monitoring of electronic systems | |

HYDRAULIC SYSTEM

| | |
|---------------------------|---|
| Type | Closed centre, load-sensing |
| Hydraulic pump | Axial piston pump, variable flow, equipped with load sensing system |
| Nominal flow @ 2200 rpm | 49 gpm (186 l/min) |
| Control valve | 9 sections |
| Diagnostic quick couplers | 8 |

TRANSMISSION

| | |
|--------------------------|---|
| Brand | ZF |
| Model | ZF TC LOCK UP 6WG – 160 |
| Type | Torque converter with lock up (also working as Direct Drive) Powershift, electronic gear shift control, automatic, no inching pedal for progressive advance |
| Rated flow @ 2.000 rpm | 22.4 gpm (85 l/min) |
| Crankcase | Integral |
| Drive gears | 6 forward / 3 reverse |
| Travel control | Automatic electronic control, single “pulsing” lever and automatic module |
| Fault diagnostics system | On-board |
| Speeds – mph (km/h) | |
| | Forward Reverse |
| 1st | 3.35 (5,4) 3.41 (5,5) |
| 2nd | 5.03 (8,1) 8.13 (13,1) |
| 3rd | 7.70 (12,4) 18.82 (30,3) |
| 4th | 11.93 (19,2) - |
| 5th | 18.83 (28,7) - |
| 6th | 27.40 (44,1) - |

STEERING

| | |
|-------------------------------------|--|
| Type | Hydrostatic steering |
| Angle - right and left | 42° |
| Steering wheel turns (lock-to-lock) | 4,5 |
| Pump capacity @ 2.200 rpm | 11 gpm (42 l/min) |
| Pressure relief | 2530 psi (175 bar) built into the steering priority valve |
| Cylinders | 2 |
| Diameter | 2 in (50,8 mm) |
| Stroke | 11.8 in (301 mm) |
| Rod diameter | 1 in (25,4 mm) |
| Supplemental steering | Built-in |
| SAE J53 and J1511 | |

ARTICULATION

| | |
|----------|---|
| Type | Hydraulically driven (with lock out system) |
| Range | 25° left/right |
| Controls | Hydraulic |

DRAWBAR

| | |
|-----------------------------|--|
| Type | "A" frame welded construction with centre mounted circle turn motor |
| Connection with the chassis | Shim adjustable ball stud |

CIRCLE

| | |
|---|---|
| Type | Welded construction |
| Maximum outside diameter | 5 ft 9 in (1752,6 mm) |
| Rotation | 360° |
| Speed | 1,2 rpm (7,2°/second) |
| Power drive | Hydraulic motor |
| Type | Gearmotor |
| Displacement | 15.25 in ³ /rev (0.25 l/rev) |
| Nominal hydraulic flow | 25 gpm (95 l/min) |
| Number of phenolic resin support plates | 4 |

CAPACITIES

| | |
|-----------------------------|-------------------|
| Engine | 4 gal (15 l) |
| with filter change | 4.2 gal (16 l) |
| Fuel | 90 gal (341 l) |
| Transmission | 6.6 gal (25 l) |
| with filter change | 6.9 gal (26 l) |
| Engine water cooling system | 8.5 gal (32 l) |
| Hydraulic oil reservoir | 23.8 gal (90 l) |
| Total hydraulic system | 39.10 gal (148 l) |
| Circle gearbox | 2.95 qt (2,8 l) |
| Tandem case (each) | 18.2 gal (69 l) |

MISCELLANEOUS

| | |
|---------------------|---|
| Front counterweight | With no front implement and with rear ripper |
| Sadle | 5 positions |

MOLDBOARD

| | |
|------------------------------|------------------------|
| Type | High-carbon steel |
| Shape | Involute curve |
| Width | 13 ft (3962 mm) |
| Height (curved profile) | 2 ft 2 in (671 mm) |
| Thickness | 0.86 in (22 mm) |
| Cutting edge | 2, Interchangeable |
| Blade pitch positions | |
| Normal pitc | 47° |
| Minimum pitch | 42° |
| Maximum pitch | 87° |
| Blade shift | |
| Right | 2 ft 3 in (686 mm) |
| Left | 1 ft 9 in (533 mm) |
| Maximum bank cutting angle | |
| Rear (left and right) | 90° |
| Ground penetration (max.) | 2 ft 4 in (711,2 mm) |
| Lift above the ground (max.) | 1 ft 5.5 in (444,5 mm) |
| Blade side shift and pitch | Hydraulic type |

SCARIFIER

| | |
|-----------------------|--|
| Type | Mounted on the front |
| Cutting width | 3 ft 10 in (1168 mm) |
| Teeth | 5 (optional, 11) |
| Spacing between teeth | 9 in 229 mm 4.5 in (114 mm, optional) |
| Lift above ground | 1 ft 8 in (527 mm) |
| Maximum penetration | 1 ft 0.5 in (318 mm) |
| Weight | 1256 lb (570 kg) |

OPERATING WEIGHT

| | |
|--|----------------------|
| With a blade of 13 ft (3962 mm), ful tank, cab, headlights, STD batteries, 17,5 X 25 12L - L2, light ripper and front counterweight. | |
| | 35860 lb (16.266 kg) |
| Weight, front axle | 9682 lb (4.392 kg) |
| Weight, rear axle | 26177 lb (11.874 kg) |
| Blade pull force | 23558 lb (10.686 kg) |
| Blade penetration force | 16466 lb (7.469 kg) |
| Ripper penetration force | 18609 lb (8.441 kg) |

CHASSIS

| | |
|---------------|------------------------------|
| Type | Full welded box |
| Front section | |
| Size | 10 x 11.7 in (254 x 298 mm) |
| Weight | 432 lb/ft (196 kg/m) |
| Rear section | |
| Size | 467 x 11.7 in (121 x 299 mm) |
| Weight | 190 lb/ft (86,3 kg/m) |

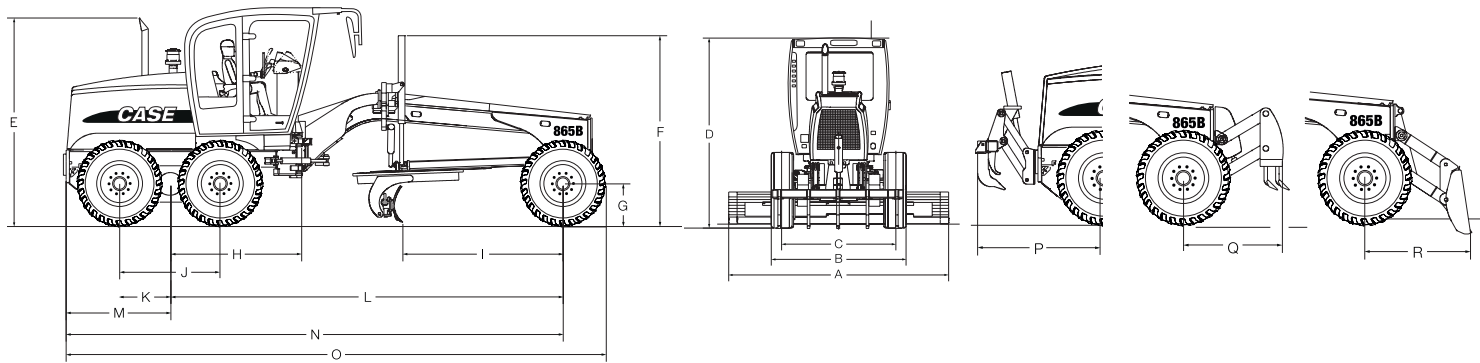
REAR RIPPER

| | |
|---------------------|----------------------|
| Type | Parallelogram |
| Cutting width | 7 ft 2 in (2.195 mm) |
| Ripper teeth | 3 large + 5 small |
| Optional teeth | + 2 large + 4 small |
| Lift above ground | |
| Large teeth | 1 ft 8 in (518 mm) |
| Small teeth | 2 ft 4 in (703 mm) |
| Maximum penetration | |
| Large teeth | 1 ft 5 in (437 mm) |
| Small teeth | 9.9 in (252 mm) |
| Weight | |
| 3 large + 5 small | 1.873 lb (850 kg) |

FRONT BLADE

| | |
|-------------------|-----------------------|
| Type | Front mounted width |
| Width | 9 ft 0.7 in (2762 mm) |
| Height | 3 ft 1.5 in (953 mm) |
| Lift above ground | 2 ft 0.4 in (622 mm) |
| Penetration | 6.5 in (165 mm) |
| Weight | 2568 lb (1165 kg) |

DIMENSIONS



| | |
|--|---|
| A – Blade width | 13' (3.962 mm) |
| B – Distance between wheels measured at outside of tyres (Total width for transport) | 8' 8" (2.663 mm) |
| C – Distance between the wheels | 7' 1" (2.168 mm) |
| D – Height to top of cab High profile cab Low profile cab | 11' 6.7" (3.400 mm) 10' 10" (3.200 mm) |
| E – Height to top of engine exhaust pipe | 10' 1" (3.323 mm) |
| F – Height to top of the blade lift cylinder | 9' 1.9" (3.047 mm) |
| G – Static tyre radius | 2' 4" (610 mm) |
| H – Distance from centre of tandem to chassis pivot pin | 6' 5" (1.958 mm) |
| I – Distance between front axle and blade | 8' 9.7" (2.562 mm) |
| J – Distance between centre of rear tyres | 5' 3.7" (1.572 mm) |
| K – Distance between centre of tandem and wheel | 2' 1.8" (786 mm) |
| L – Wheelbase | 20' 4" (6.219 mm) |
| M – Distance between centre of tandem and rear section of the equipment | 5' 10" (1.650 mm) |
| N – Distance between the front wheel axle and the rear of the equipment | 25' 10" (7.868 mm) |
| O – Total length | 27' 10" (8.534 mm) |
| P – Distance between rear tyres and ripper | 6' 3.6" (2.028 mm) |
| Q – Distance between front tyres and ripper | 4' 7.6" (1.520 mm) |
| R – Distance between front tyres and front blade | 5' 8" (1.626 mm) |
| Turning radius (outside the tyres) | 23' 11" (7.250 mm) |

All units equipped with 17,5 X 25 12L - L2 tyres, ROPS/FOPS open cab, standard battery, full fuel tank, operator weighing 165 lb (75 kg), specifications per ISO 7134.

STANDARD EQUIPMENT

Operator Cab

ROPS/FOPS high closed cab
(fixed front window) with:
Air conditioning (*)
Adjustable cloth mechanical suspension
seat with 2" (50.8 mm) seat belt
Adjustable operator console
Pedal accelerator
Manual accelerator
Front upper windshield wiper with washer
Safety glass
Dome light
Internal and external rearview mirrors
12 V socket (*)
Automatic master switch
Steps on the right-hand and left-hand sides
(*) Only available in closed cabs

All ROPS/FOPS cabs are certified according to standards SAE J1040 (ROPS) and SAE J231 (FOPS).

Engine

Case/FPT 6.7 l turbocharged, diesel,
Tier 3 certified
Electronic fuel injection
Dry air filter with primary and secondary
safety elements
Air pre-filter with cyclonic dust ejector
90 A alternator
5.4 hp (4.0 kW) starter motor
Swing-up hood

Hydraulic System

Closed centre, load-sensing hydraulic system
9-section control valve
Hydraulic control for all functions:
blade lifting (right and left side), circle turn,
circle side shift, wheel lean, chassis
articulation, blade side shift and pitch,
front and rear accessories
Diagnostic centre with 8 quick couplers
Movable saddle with 5 service positions and
electro-hydraulic lock
Blade 13' x 2' 2" x 0.86" (3962 x 671 x 22 mm)
Hydraulic axial piston pump
Hydraulic engine fan

Brakes

Multi-disk oil-bathed service brakes with nitrogen
accumulator safety system.
Transmission-integrated disk parking brakes,
with warning light.

Tyres

14" Rim 3 pieces / 17,5 x 25 - 12L - L2
Tubeless

Other

Standard tool set
Drawbar / Standard circle

Axles

Conventional differential with four-wheel brake
and differential lock with activation electro-
hydraulic (rear axle)

Steering

Hydrostatic steering with built-in
emergency system

Instruments

Electronic Information Centre
Indicators/gauges:
Speedometer
Tachometer
F/N/R direction selected
Transmission modes – automatic/manual
Selected Gear
Engine coolant temperature
Fuel level
Transmission oil temperature
Hydraulic oil temperature
Hour meter
Fuel consumption
Engine diagnostics
DeClutch activation indicator
Transmission diagnostics

Indicator lights

Low fuel level
Flood lights
High Beam
Brake pressure
Main alert
Parking brake

Audible alerts

Caution alert
Emergency alert
Reverse alarm

Electrical System

Lights
Front headlight with turn signal (2)
Brake light and rear turn signals (2)
Rear cab mounted work light (2)
Front cab mounted work light (2)
24 V system (2 12 V / 1010 CCA batteries)
Electronic systems monitoring
Hooter
Hour meter
Reverse alarm

Transmission

ZF Transmission, torque converter type with
lock up (also functions as Direct Drive),
Powershift, 6 forward and 3 reverse speeds,
automatic gear shifting, emergency device in
case of electrical failure (Limp-Home).

Rear Implement

Ripper with 3 large teeth and 5 small teeth
1.873 lb (850 kg)

Front Implement

Front counterweight 1084 lb (492 kg)

OPTIONAL EQUIPMENT

Cabine (ROPS/FOPS)

Open cab
Closed high cab (front flip-down window)
Closed low cab (fixed front window)
Closed low cab (front flip-down window)

Other

Heater and fan for closed cab
Acoustic insulation for closed cab
Fire extinguisher
Windshield washer and lower windshield wipers
Rear windshield washer and wipers
Radio
Tandem locking device
Sun visor (front and rear)
Rear defroster

Front implement

| | |
|--|-------------------|
| Dozer blade | 2568 lb (1165 kg) |
| Light push plate | 1084 lb (492 kg) |
| Heavy push plate | 1763 lb (800 kg) |
| Front scarifier with 5 teeth, 6 additional teeth for front scarifier | 1521 lb (690 kg) |
| Dozer blade float electrovalve | |

Rear implement

Additional teeth for ripper 2 large and 4 small
Rear pull hook
Machine lifting bracket

Blade

| | |
|-------------------------|--|
| Blade | 12' x 2' x 0.86" (3658 x 622 x 22 mm) |
| Blade | 14' x 2' 2" x 0.86" (4267 x 671 x 22 mm) |
| Right blade extension | 2' (610 mm) |
| Left blade extension | 2' (610 mm) |
| Heavy Duty cutting edge | Additional |

Work lights

2 work lights behind the blade
2 service lights in front of the moldboard
2 rear implement work lights

Lock/Floating/Anti-shock – Moldboard and circle

Moldboard lifting cylinder lock valve
Moldboard float electrovalve (incorporates lock valve)
Anti-shock electrovalve with 2 accumulators for moldboard
Anti-shock electrovalve with 3 accumulators for moldboard and circle

Seat/Safety belt

Vinyl seat with mechanical suspension
Cloth seat with air suspension
Seat belt 3" (76,5 mm)

Other optional items

Beacon light
Luxury tool box
Toolbox without tools with support, fixed on front chassis
Slow moving vehicle sign
Electric pump to inflate tires
Spare tire bracket

Tires and rims mounted

Tubeless tires
10" rim – 3-piece / 14x24 tyre – 12L – G2
13" rim – one-piece / 17.5x25 tyre – 12L – L2
14" rim – 3-piece / 17.5x25 tyre – 12L – L2
14" rim – 3-piece / 17.5x25 tyre – 16L – L3

Tube tires

9" rim – one-piece / 14x24 tyre – 12L – G2
10" rim – 3-piece / 14x24 tyre – 12L – G2

Tubeless radial tires

9" rim – single-piece / 14x24 tyre – 12L – L2
RADIAL XGLA2
10" rim – 3-piece / 14x24 tyre – 12L – L2
RADIAL XGLA2
13" rim – single-piece / 17.5x25 tyre – XTLA
14" rim – 3-piece / 17.5x25 tyre – XTLA

Rims

9" rim – one-piece with valve
10" rim – 3-piece with valve
13" rim – one-piece with valve
14" rim – 3-piece with valve



Fleet monitoring and tracking management system through satellite or mobile phone

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