

**M-SERIES CRAWLER DOZERS**  
**1150M | 1650M | 2050M**

**CASE**  
CONSTRUCTION



**TECHNOLOGY**  
**THAT PAYS**

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**EXPERTS FOR THE REAL WORLD**  
**SINCE 1842**

# M-SERIES CRAWLER DOZERS



## EXPERTS FOR THE REAL WORLD SINCE 1842

**1842** Case is founded.

**1946** Allis-Chalmers is the first manufacturer to introduce a torque converter on dozers. In the 30s they had invented permanently lubricated track rollers and sealed and lubricated tracks.

**1951** First Case dozer made in cooperation with ATC and promoted under Terratrack brand.

**1956** Case acquires ATC and is the first manufacturer to introduce tracks counterrotation on the 1000 Series Terratrack dozer.

# HERITAGE

## A TRADITION OF INDUSTRY FIRSTS



- 1974** *FIAT acquires Allis-Chalmers and in the 70s introduces the exclusive “Equistatic” geometry on bulldozer machines. In the late 90s Case launches its exclusive “CASE Extended Life Track” undercarriage.*
- 2008** *Case introduces the “Dual Path” hydrostatic transmission on the “K” series.*
- 2013** *Case is the first to introduce SCR technology on the “M” series dozer.*
- 2015** *Case extends its European product line-up with the new grader range.*

# M-SERIES CRAWLER DOZERS



## LOW EMISSIONS

### Premium Tier 4 technology

The state-of-the-art common rail engine delivers top performance in load response, max torque, power and fuel economy.

The combustion is optimised for maximum efficiency: it occurs at high temperatures and uses 100% fresh, cool air, as the air intake is separated from the exhaust. The turbocharged engine with an Air-to-Air intercooler relies on well proven multi injection technology to maximize torque back-up and fuel efficiency with reduced engine noise and vibrations.



*The high temperature combustion produces a very limited amount of particulates*



*AdBlue is sprayed in the exhaust in order to eliminate NOx through Catalytic Reduction (SCR)*

**Tier 4 interim**

With SCR the engine runs with optimised efficiency. The M Series engine can run with 20% biodiesel, reducing even further its environmental impact. When the tractive effort grows and the rpm tends to drop, the engine power rises by up to 16% to 1800 rpm. The result: constant performance and higher pulling capacity. In addition, the ability to work with high torque at lower engine rpm reduces engine wear.



## SUPERIOR COOLING EFFICIENCY

### Fresh air breathing engine

The cooling package of the 1650M and 2050M has been redesigned and fitted with a hydrostatic reversible fan. In the new design, the radiators are mounted with no overlap, so that each radiator receives fresh air, maintaining constant fluid temperatures. The hydrostatic fan continuously adapts its speed to match the real cooling demand, reducing power absorption. The reversing mode reduces maintenance needs and lengthens cleaning intervals.

# ENGINE AND TRANSMISSION DRAWBAR PULL LEADERSHIP



## EXTRA POWERED TRANSMISSION

### Unmatched drawbar pull

The entirely re-engineered transmission offers best-in-class pulling capacity combined with the typical manoeuvrability of the hydrostatic solution.

The triple reduction final drive adds a planetary reduction to the standard double one. The hydrostatic transmission can work at a faster speed, reducing the overall pressure and consequently the effort on the single components. The two final drives are directly flanged on the main frame for better effort distribution and easy disassembling for extraordinary maintenance.



## HIGH RELIABILITY

### “CELT” Case extended life tracks

Case tracks technology supports the enormous drawbar pulling capacity of the M Series. The exclusive rotating bushing technology of the Case Extended Life Track (CELT) can double the tracks' life, dramatically reducing maintenance costs. In addition, the sprocket is made with 40% more material, extending the life of its teeth. When you consider that maintenance of the undercarriage represents on average 50% of a dozer maintenance costs, the Case solution brings a clear benefit for the most demanding customers.



# M-SERIES CRAWLER DOZERS



## VERSATILE CONTROLS

### Agile and strong

The operator has full control of the massive power of the M Series dozer. The electrohydraulic joystick enables them to customise the reversing and steering sensitivity for faster and more efficient cycles. The decelerator pedal can be set to reduce either travel speed only or both travel and engine speed.

### Automatic blade functions

The advanced electronics functions enable the operator to control specific functions in addition to the standard blade movements:

- the on-board computer can be set directly from the joystick;
- the blade reaction can be set choosing from 3 levels of sensitivity;
- the grading button immediately reduces the speed of the blade by 50% for more accurate soil contour;
- the shaking mode enables the operator to shed material quickly, especially when working with sticky soil.

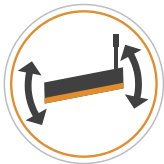


## HIGH VISIBILITY

### Drive your performance forward!

The M series cab is engineered for operator performance, comfort and safety. The new positioning, further forward on the machine, ensures complete blade visibility. The operator can work with confidence and more productively in every operation. The air suspended seat is easy to adjust, providing every operator with a perfect working position. The powerful air conditioning system combined with the best-in-class noise level provide an excellent working environment, reducing operator stress during long working days.

# CUSTOMIZABLE CONTROLS PRODUCTIVITY BOOSTING ELECTRONICS



## BLADE CONTROL SET UP

### Flexible performance

The M series is ready to work with the most common blade controls available on the market. The machine can be prepared in the factory for a specific configuration, ensuring perfect wire layout, visibility and component integration, guaranteeing the high standards of reliability of every Case product are maintained.



## HIGH VERSATILITY

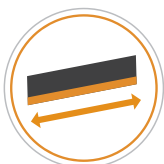
### Tools for every task

A wide offering of implements and equipments can be installed on the new CASE dozer:

- Drawbar • 3 shanks parallel ripper
- Front cab protections and grids • Winches predisposition

A choice of blades are available for optimum dozing performance:

- PAT • Foldable PAT (reduces the transport width within 3 m) • Straight • Semi-U



## BULLDOZER “EQUISTATIC” GEOMETRY

### Balanced pushing effort

All the Bulldozer units offer the patented «Equistatic» system that increases the tilting capability, while reducing the efforts on the pushbeams, increasing the overall frame reliability and reducing the overall wear of components.

# QUICK GROUND ACCESS FOR SERVICING



## SAFE AND EASY MAINTENANCE

### Ground access for servicing

The hydrostatic transmission brings less complexity and lower maintenance requirements than a traditional one. Belly plates on the bottom of the machine provide excellent access to controls and transmission components.

The final drive installation on the main dozer frame enables dismounting while leaving the hydrostatic components in place. The transmission can even be reached through the cab floor, so it can be serviced directly on the jobsite.

The refueling points (Fuel/Ad Blue/Hydraulic Oil) are conveniently placed on the rear of the cab in a well-protected place. The daily maintenance can be done quickly thanks to dedicated steps that make the access easier and safer.

The new single piece main frame enables you to service the main controls easily from the ground, simply opening the wide lateral shieldings.

Oil levels, battery status, electric components, filters and the emergency cut off switches are rationally grouped and clearly identified with colour coding. With the M Series, you can quickly get ready for your working day.







## THE SCIENCE BIT

The Case SiteWatch telematics system uses a high-tech control unit mounted on each machine to collate information from that machine and from GPS satellites. This data is then sent wirelessly through the mobile communication networks to the Case Telematics Web Portal.



## SiteWatch: centralised fleet control benefits at your fingertips

### Measure your true asset availability and optimise it

- Eliminate the “phantom fleet”: SiteWatch allows to identify spare units or under loaded machines on each site.
- Become able to reallocate units where they are more needed.
- Forward Maintenance Planning is easier since the actualised working hours are always available.
- Extend the benefits of SiteWatch to the rest of your fleet: SiteWatch can be installed on the units of other brands as well.

### Challenge your Total Cost of Ownership!

- Being able to compare the fuel usage of different machine types will allow you choose the right equipment.
- Save on transport costs with planned and grouped maintenance tasks.
- Peace of mind, optimised uptime and lower repair costs: with preventive maintenance you can for example be alerted if the engine needs to be serviced and avoid a disruptive breakdown.
- Be able to compare your asset Return On Investment on different sites.
- Your equipment is used only during working hours. You can set up alerts so that you know if it is in use during the weekend or at night.
- Integrate with the programmed maintenance package, so that you can be sure every machine is at the right place at the right time.

### More Safety, Lower Insurance Premium

- Keep thieves away: dissuade them from attacking your asset because it is geo-localised. SiteWatch is hidden so that thieves can't find it quickly.
- Your fleet is used only where you decide. You can define a virtual fence and receive an email when a machine exits that perimeter.

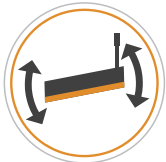


# MAIN REASONS TO CHOOSE THE M-SERIES



## EXTRA POWERED TRANSMISSION

- Dual path transmission - Continuous power transfer delivers more productivity, stepless shifting, absolute bulldozer controllability.
- 3 stages final drives - High transmission final reduction lessens stress on the hydrostatic transmission and increases drawbar pull.



## BLADE CONTROL SET UP

- Leading brands plug and play blade control system.



## HIGH VERSATILITY

- The wide variety of options and bulldozers offers every customer the possibility of creating a machine tailored for the most demanding applications in different environments.



## LOW EMISSIONS

- The only dozer with SCR in the market: exceptional efficiency and fuel savings, no losses due to extra cooling needs.



## VERSATILE CONTROLS

- Electronically controlled fast material drop from the blade in sticky conditions. All the main working parameters can be set to satisfy customer requirements.





## EASY MAINTENANCE

- The functional groups are located beside the cab for quick intervention.
- The transmission components can be checked directly under the cab floor.



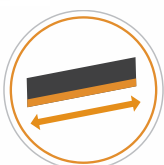
## HIGH VISIBILITY

- The cab, positioned 100 mm forward, ensures best-in-class visibility on the blade corner as well as better bulldozer weight distribution.



## SUPERIOR COOLING EFFICIENCY

- Double cooling surface and no overlapping of radiators. The reversible fan keeps the exchanging area clean and dramatically extends service intervals.



## BULLDOZER "EQUISTATIC" GEOMETRY

- Emphasizes blade tilting while compensating twisting effort on the push beams device.



## HIGH RELIABILITY

- "CASE Extended Life Tracks": dramatically reduces total cost of ownership by 50%.

# M-SERIES

## CRAWLER DOZERS

### 1150M SPECIFICATIONS

#### ENGINE

Model	Case Family 4, F4HFE613Z*A005 Tier 4 Interim
Cylinders	6
Displacement	6.7 l
Fuel injection	Direct
Fuel filter	Spin-on w/ in-line strainer
Air intake	Cross-flow
Cooling	Liquid
Engine speeds	RPM
High idle – no load	2200 +/- 50
Rated – full load	2000
Low idle	1100 +/- 25
Horsepower SAE J1349:	
Engine rated net power	127 hp - 95 kW @ 2200 rpm
Engine max net power	138 hp - 103 kW @2200 rpm
Rated net torque	612 Nm
Max net torque	632 Nm

#### Engine lubrication

Pump	Deep sump plate cooler w/ pressurized under-piston nozzles
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Pump operating angle ratings:

Side-to-side	35°
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Fore and aft	45°
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Radiator:

Core size area (Water Radiator)	0.26 m <sup>2</sup>
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Rows of tubes	25
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Fan

Diameter	662 mm
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Ratio	0,96:1
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#### POWERTRAIN

##### Dual path hydrostatic

Pump	Variable axial piston
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Motor	Variable bent axis piston
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Max. drawbar pull*	213.5 kN
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Transmission	Single lever control electronic straight tracking
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Oil filter	2 micron, spin-on, replaceable
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Travel speeds\*

Forward	0 – 9.3 km/h
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Reverse	0 – 9.3 km/h
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Parking brakes	Heavy-duty, spring-applied, hydraulic pressure release
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Steering brakes	Hydrostatic
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Final drive	2 helical gear reduction to planetary output
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Ratio	61.4:1
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#### TRANSMISSION COOLING

Type	Oil to air
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Core size	0.41m <sup>2</sup>
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\*Measured using standard track chain. Increase travel speeds by 4% and reduce drawbar pull by 4% w/ the optional CELT track chain

#### ELECTRICAL SYSTEM

Alternator	120 amps
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Batteries (2)	12-volt, low-maintenance 925 cold-cranking amps @ -18°C
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#### OPERATOR ENVIRONMENT

ROPS/FOPS cab; Pneumatically suspended seat; Seat belt; Adjustable armrests; Foot rests; Tool storage area; Headliner; Floor mat; Mirror; Noise level 78dbA.

##### Warning lights:

Air filter; Alternator; Diagnostic fault indicator; Engine coolant temperature; Engine oil pressure; Hydraulic filter; Low fuel level; Park brake engaged; Service soon indicator; Transmission filter; Transmission charge pressure.

##### Gauges:

Ad Blue Level; Battery voltage; Digital hourmeter/tachometer diagnostic/service reminder; Fuel level; Transmission oil temperature; Transmission speed indicator; Water temperature.

##### Audible warnings:

Engine coolant temperature; Engine oil pressure; Low fuel level, Transmission charge pressure; Transmission/hydraulic temperature; Rear wiper for cab; Internal mirror; Radio.

#### HYDRAULICS

Pump flow @ 2200 RPM	137 l/min
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Max pressure	206 bar
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Lift cylinder™	nr. 2
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Bore diameter	108 mm
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Rod diameter	50.8 mm
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Stroke	488 mm
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Angle cylinder	nr. 2
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Bore diameter	114.3 mm
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Rod diameter	63.5 mm
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Stroke	465.7 mm
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Tilt cylinder	nr. 1
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Bore diameter	127 mm
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Rod diameter	63.5 mm
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Stroke	148.3 mm
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#### SERVICE CAPACITY

Fuel tank	322 l
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Ad Blue tank	52 l
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Engine oil w/ filter	16.4 l
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Engine oil w/o filter	15.6 l
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Engine cooling system	26.5 l
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Hydraulic reservoir	116.4 l
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Final drive (per side)	14.2 l
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Track rollers (ea)	0.275 l
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Front idlers (ea)	0.225 l
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Carrier rollers – each	0.334 l
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# SPECIFICATIONS

## UNDERCARRIAGE

Track adjustment	Hydraulic
Frame	Oscillating equalizer beam suspension and pivot shaft
<b>Track link pitch</b>	175 mm
Track shoe height	52.5 mm
Pin diameter	36.58 mm
<b>Bushing diameter</b>	
CLT track	62 mm
CELT track	79 mm
<b>Track shoes per side</b>	
CLT track	43
CELT track	43
Track rollers per side	7
Carrier rollers per side	2
Track roller rail diameter	190 mm
<b>Track on ground</b>	
Shoe area	
508 mm	26323 cm <sup>2</sup>
559 mm	28965 cm <sup>2</sup>
660 mm	34199 cm <sup>2</sup>
762 mm	39484 cm <sup>2</sup>

## BLADE

Variable blade pitch	55° +/- 5°
Lift speed – per second	503 mm
Cutting edge	Reversible, replaceable
Width	203.2 mm
Thickness	19.1 mm

## RIPPER

Max. penetration	478 mm
Width	1711 mm
Cut	1635 mm
Max. ground clearance	424 mm
Max. number of shanks	3
Tooth spacing	
w/3 teeth	785 mm
Hydraulic cylinder	Double-acting
Diameter	102 mm
Stroke	254 mm
Rod	51 mm

## OPERATING WEIGHT

Unit equipped CAB, full fuel tank, 170 lb (77 kg) operator, side shield, track guides, backup alarm, horn, lights and rear retrieval hitch.

	Weight (kg)	Add-on weights	Weight (kg)	CELT chains	Weight (kg)
Long Track	14122	Drawbar	66	20" (508 mm)	2276
Wide Track	14549	Ripper (3 shank)	1043	22" (559 mm)	2422
Low Ground Pressure	14804	Front counterweight	432	26" (660 mm)	2592
				30" (762 mm)	2802
				Center rockguard	134
				Sweeps	63

## TRACK AND SHOE OPTIONS

### LT (Long Tracks)

508 mm	closed grousers and CLT
508 mm	open grousers and CELT
559 mm	closed grousers and CLT
559 mm	open grousers and CELT

### WT (Wide Tracks)

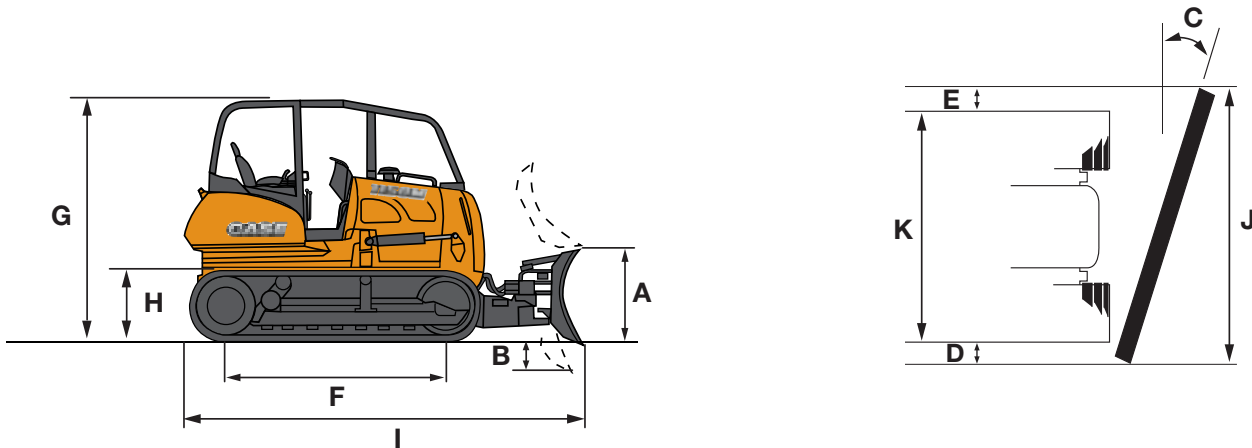
559 mm	closed grousers and CLT
559 mm	open grousers and CELT
660 mm	closed grousers and CLT
660 mm	open grousers and CELT

### LGP (Low Ground Pressure)

762 mm	closed grousers and CLT
762 mm	open grousers and CELT

# M-SERIES CRAWLER DOZERS

## 1150M GENERAL DIMENSIONS



Line drawings are for illustrative purpose only and may not be exact representation of unit.

	LT (Long Track)	WT (Wide Track)	LGP (Low Ground Pressure)
<b>BLADES</b>			
Blade width	3048 mm	3353 mm	3353 mm
SAE blade capacity	2.87 m <sup>3</sup>	3.18 m <sup>3</sup>	3.18 m <sup>3</sup>
<b>A</b> Blade height	1120 mm	1120 mm	1120 mm
Blade lift above ground	956 mm	956 mm	956 mm
<b>B</b> Blade depth below ground	539 mm	590 mm	590 mm
<b>C</b> Blade angle both directions	25°	25°	25°
Blade tilt, each end (up to 8.3°)	430 mm	450 mm	450 mm
<b>D</b> Cast reach track coverage	380 mm	370 mm	319 mm
<b>E</b> Cut reach track coverage	24 mm	12 mm	63 mm
<b>TRACKS</b>			
Track gauge	1830 mm	2030 mm	2030 mm
Max shoe width	559 mm	660 mm	762 mm
<b>F</b> Track on ground	2590 mm	2590 mm	2590 mm
Area of track on ground	2.90 m <sup>2</sup>	3.42 m <sup>2</sup>	3.95 m <sup>2</sup>
Ground pressure	0.44 kg/cm <sup>2</sup> *	0.37 kg/cm <sup>2</sup> **	0.32 kg/cm <sup>2</sup> ***
<b>DIMENSIONS</b>			
<b>G</b> Height to top of cab	2948 mm	2948 mm	2948 mm
<b>H</b> Ground clearance	330 mm	330 mm	330 mm
<b>I</b> Length			
- Blade straight with drawbar	5080 mm	5080 mm	5080 mm
- Blade straight with ripper	6150 mm	6150 mm	6150 mm
Width			
- Blade straight	3048 mm	3353 mm	3353 mm
<b>J</b> Blade angled	2773 mm	3050 mm	3050 mm
<b>K</b> Over track	2396 mm	2692 mm	2794 mm

\*with 559 mm shoes

\*\* with 660 mm shoes

\*\*\*with 762 mm shoes

NOTE: Ground clearance and overall height dimensions are with the grousers fully penetrated. Add 52.5 mm if unit is on solid surface.

# SPECIFICATIONS



# M-SERIES

## CRAWLER DOZERS

### 1650M SPECIFICATIONS

#### ENGINE

Model \_\_\_\_\_ Case Family 4, F4HFE613Z\*A008 Tier 4 Interim  
 Cylinders \_\_\_\_\_ 6  
 Displacement \_\_\_\_\_ 6.7 l  
 Fuel injection \_\_\_\_\_ Direct common rail  
 Fuel filter \_\_\_\_\_ Spin-on w/ in-line strainer  
 Air intake \_\_\_\_\_ Cross-flow  
 Cooling \_\_\_\_\_ Liquid  
 Engine speeds \_\_\_\_\_ RPM  
 High idle – no load \_\_\_\_\_ 2200 +/- 50  
 Rated – full load \_\_\_\_\_ 2000  
 Low idle \_\_\_\_\_ 800 +/- 25  
 Horsepower SAE J1349:  
 Engine rated net power \_\_\_\_\_ 150 hp - 112 kW @ 2200 rpm  
 Engine max net power \_\_\_\_\_ 164 hp - 122 kW @2200 rpm  
 Rated net torque \_\_\_\_\_ 666 Nm  
 Max net torque \_\_\_\_\_ 726 Nm

#### Engine lubrication

Pump \_\_\_\_\_ Deep sump plate cooler w/ pressurized under-piston nozzles

Pump operating angle ratings:

Side-to-side \_\_\_\_\_ 35°

Fore and aft \_\_\_\_\_ 45°

Radiator:

Core size area (Water Radiator) \_\_\_\_\_ 0.61 m<sup>2</sup>

Rows of tubes \_\_\_\_\_ 4

Fan

Diameter \_\_\_\_\_ 700 mm

Ratio \_\_\_\_\_ hydraulically driven

#### POWERTRAIN

##### Dual path hydrostatic

Pump \_\_\_\_\_ Variable axial piston

Motor \_\_\_\_\_ Variable bent axis piston

Max. drawbar pull\* \_\_\_\_\_ 311 kN

Transmission \_\_\_\_\_ Single lever control electronic straight tracking

Oil filter \_\_\_\_\_ 2 micron, spin-on, replaceable

Travel speeds\*

Forward \_\_\_\_\_ 0 – 9.3 km/h

Reverse \_\_\_\_\_ 0 – 9.3 km/h

Parking brakes \_\_\_\_\_ Heavy-duty, spring-applied, hydraulic pressure release

Steering brakes \_\_\_\_\_ Hydrostatic

Final drive \_\_\_\_\_ 2 helical gear reduction to planetary output

Ratio \_\_\_\_\_ 61.4:1

#### TRANSMISSION COOLING

Type \_\_\_\_\_ Oil to air

Core size \_\_\_\_\_ 0.31m<sup>2</sup>

#### ELECTRICAL SYSTEM

Alternator \_\_\_\_\_ 120 amps

Batteries (2) \_\_\_\_\_ 12-volt, low-maintenance  
 925 cold-cranking amps @ -18°C

#### OPERATOR ENVIRONMENT

ROPS/FOPS cab; Pneumatically suspended seat; w/ back adjustment; Seat belt; Adjustable armrests; Foot rests; Tool storage area; Headliner; Floor mat; Tilting seat platform; Noise Level 75 dbA.

##### Warning lights:

Air filter; Alternator; Diagnostic fault indicator; Engine coolant temperature; Engine oil pressure; Hydraulic filter; Low fuel level; Park brake engaged; Service soon indicator; Transmission filter; Transmission charge pressure.

##### Gauges:

Battery voltage; Digital hourmeter/tachometer diagnostic/service reminder; Fuel level; Transmission oil temperature; Transmission speed indicator; Water temperature.

##### Audible warnings:

Engine coolant temperature; Engine oil pressure; Low fuel level, Transmission charge pressure; Transmission/hydraulic temperature.

#### HYDRAULICS

Pump flow @ 2200 RPM \_\_\_\_\_ 137 l/min

Max pressure \_\_\_\_\_ 248 bar

**Lift Cylinder PAT** \_\_\_\_\_ nr. 2

Bore diameter \_\_\_\_\_ 114.3 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 428 mm

**Angle cylinder PAT** \_\_\_\_\_ nr. 2

Bore diameter \_\_\_\_\_ 114 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 502.7 mm

**Tilt cylinder PAT** \_\_\_\_\_ nr. 1

Bore diameter \_\_\_\_\_ 127 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 148.3 mm

##### Lift cylinder Bull Dozer

Bore diameter \_\_\_\_\_ 82.6 mm

Rod diameter \_\_\_\_\_ 50.8 mm

Stroke \_\_\_\_\_ 1000 mm

##### Tilt cylinder Bull Dozer

Bore diameter \_\_\_\_\_ 114.3 mm

Rod diameter \_\_\_\_\_ 36.5 mm

Stroke \_\_\_\_\_ 126 mm

\*Measured using standard track chain. Increase travel speeds by 4% and reduce drawbar pull by 4% w/ the optional CELT track chain



# SPECIFICATIONS

## SERVICE CAPACITY

Fuel tank	322 l
AD Blue Tank	52 l
Engine oil w/ filter	16.4 l
Engine oil w/o filter	15.6 l
Engine cooling system	30.2 l
Hydraulic reservoir	160 l
Final drive - per side	14.2 l
Track rollers - each	0.275 l
Front idlers - each	0.225 l
Carrier rollers - each	0.334 l

## UNDERCARRIAGE

Track adjustment	Hydraulic
Frame	Oscillating equalizer beam suspension and pivot shaft

### Track link pitch

CLT track	190 mm
CELT track	190 mm
Track shoe height	56 mm
Pin diameter	38 mm

### Bushing diameter

CLT track	65 mm
CELT track	86 mm

### Track shoes per side

CLT track	45
CELT track	45
Track rollers per side	8
Carrier rollers per side	2
Track roller rail diameter	171.5 mm

## TRACK ON GROUND

Shoe area	
559 mm	34093 cm <sup>2</sup>
610 mm	37204 cm <sup>2</sup>
711 mm	49524 cm <sup>2</sup>
819 mm	37204 cm <sup>2</sup>
864 mm	52695 cm <sup>2</sup>

## BLADE

Variable blade pitch - adjustable	55° +/- 5°
Lift speed - per second	483 mm
Cutting edge	Reversible, replaceable
Width	200 mm
Thickness	20 mm

## RIPPER

Max. penetration	570 mm
Width	1953 mm
Cut width	1889 mm
Max. ground clearance	592 mm
Max. number of shanks	3
Tooth spacing	
w/3 teeth	944 mm
Hydraulic cylinder	Double-acting
Diameter	155 mm
Stroke	596 mm
Rod	69 mm

## OPERATING WEIGHT

Operating weight includes cab, full fuel and hydraulic tanks, 170 lb (77 kg) operator, CLT chain, front pull hook, rear retrieval hitch, track guides, back up alarm, horn, lights, track shoe, C-frame and blade width as noted.

	Weight (kg)	Add-on weights	Weight (kg)	CELT Chains	Weight (kg)
Extra Long Track	17123 kg PAT	Drawbar	66	22" (559 mm)	3021
	18030 kg Semi-U	Ripper (3 shank)	1355	24" (610 mm)	3161
Wide Track	17531 kg PAT	Winch	2500	28" (711 mm)	3423
				32" (819 mm)	3602
Low Ground Pressure	17940 kg PAT			34" (864 mm)	3827
				Center rockguard	259
				Sweeps	63

# M-SERIES

## CRAWLER DOZERS

### 1650M TRACK AND SHOE OPTIONS

#### XLT (Extra Long Tracks)

559 mm	closed grousers and CLT
559 mm	open grousers and CELT
610 mm	closed grousers and CLT
610 mm	open grousers and CELT

#### WT (Wide Tracks)

711 mm	closed grousers and CLT
711 mm	open grousers and CELT
819 mm	closed grousers and CLT
819 mm	open grousers and CELT

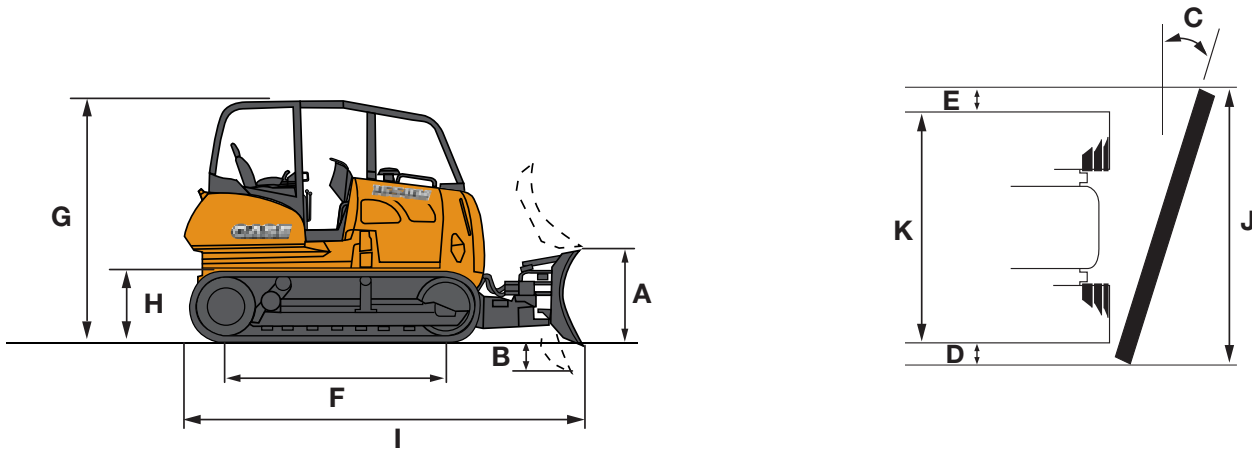
#### LGP (Low Ground Pressure)

864 mm	closed grousers and CLT
864 mm	open grousers and CELT

BLADE DIMENSIONS	Bull Dozer Semi-U	Straight PAT	Straight PAT	Foldable PAT
Blade Capacity SAE J1265	4.84 m <sup>3</sup>	3.27 m <sup>3</sup>	4.04 m <sup>3</sup>	4.04 m <sup>3</sup>
Undercarriage available	XLT	XLT	WT-LGP	WT - LGP
J Blade width	3322 mm	3302 mm	3962 mm	3962 mm
Blade width in transport position	3322 mm	3096 mm	3574 mm	2887 mm
A Blade height	1319 mm	1180 mm	1000 mm	1000 mm
Max. Tilt	+/- 420 mm	+/- 450 mm	+/- 550 mm	+/- 550 mm
Max. Pitch	+/- 5°	+/- 5°	+/- 5°	+/- 5°
C Max. Angle	-	+/- 28°	+/- 28°	+/- 28°
B Digging depth.	596 mm	539 mm	590 mm	590 mm
Max lift above ground	1133 mm	1130 mm	1130 mm	1130 mm
D Cast reach track coverage	468 mm	457 mm	558 mm	584 mm
E Cut reach track coverage	468 mm	53 mm	154 mm	80 mm

# SPECIFICATIONS

## 1650M GENERAL DIMENSIONS



Line drawings are for illustrative purpose only and may not be exact representation of unit.

	XLT (Extra Long Track)	WT (Wide Track)	LGP (Low Ground Pressure)
<b>TRACKS</b>			
Track gauge	1930 mm	2180 mm	2180 mm
Max shoe width	610 mm	819 mm	864 mm
F Track on ground	3050 mm	3050 mm	3050 mm
Area of track on ground	3.72 m <sup>2</sup>	4.30 m <sup>2</sup>	5.26 m <sup>2</sup>
Ground pressure	0.42 kg/cm <sup>2</sup> *	0.38 kg/cm <sup>2</sup> **	0.31 kg/cm <sup>2</sup> ***
<b>DIMENSIONS</b>			
G Height to top of cab	2948 mm	2948 mm	2948 mm
H Ground clearance	321 mm	321 mm	321 mm
<b>I Length</b>			
- Blade straight with drawbar	5678 mm PAT 5928 mm Semi-U	5678 mm	5678 mm
- Blade straight with ripper	6670 mm PAT 6920 mm Semi-U	6670 mm	6670 mm
<b>Width</b>			
- Blade straight	3302 mm PAT 3332 mm Semi-U	3962 mm PAT	3962 mm PAT
J Blade angled	3000 mm PAT	3574 mm PAT 2887 mm PAT Foldable	3574 mm PAT 2887 mm PAT Foldable
K Over track	2489 mm with 559 mm shoes	2997 mm with 819 mm shoes	3044 mm with 864 mm shoes

\* with 610 mm shoes and PAT blade  
 \*\* with 711 mm shoes and PAT blade  
 \*\*\* with 864 mm shoes and PAT blade

NOTE: Ground clearance and overall height dimensions are with the grousers fully penetrated. Add 52.5 mm if unit is on solid surface.

# M-SERIES

## CRAWLER DOZERS

### 2050M SPECIFICATIONS

#### ENGINE

Model \_\_\_\_\_ Case Family 4, F4HFE613W\*A004 Tier 4 Interim  
 Cylinders \_\_\_\_\_ 6  
 Displacement \_\_\_\_\_ 6.7 l  
 Fuel injection \_\_\_\_\_ Direct common rail  
 Fuel filter \_\_\_\_\_ Spin-on w/ in-line strainer  
 Air intake \_\_\_\_\_ Cross-flow  
 Cooling \_\_\_\_\_ Liquid  
 Engine speeds \_\_\_\_\_ RPM  
 High idle – no load \_\_\_\_\_ 2200 +/- 50  
 Rated – full load \_\_\_\_\_ 2000  
 Low idle \_\_\_\_\_ 800 +/- 25  
 Horsepower SAE J1349:  
 Engine rated net power \_\_\_\_\_ 214 hp - 160 kW @ 2200 rpm  
 Engine max net power \_\_\_\_\_ 232 hp - 173 kW @2200 rpm  
 Rated net torque \_\_\_\_\_ 1004 Nm  
 Max net torque \_\_\_\_\_ 1082 Nm

#### Engine lubrication

Pump \_\_\_\_\_ Deep sump plate cooler w/ pressurized under-piston nozzles

Pump operating angle ratings:

Side-to-side \_\_\_\_\_ 35°

Fore and aft \_\_\_\_\_ 45°

Radiator:

Core size area (Water Radiator) \_\_\_\_\_ 0.33 m<sup>2</sup>

Rows of tubes \_\_\_\_\_ 4

Fan

Diameter \_\_\_\_\_ 700 mm

Ratio \_\_\_\_\_ hydraulically driven

#### POWERTRAIN

##### Dual path hydrostatic

Pump \_\_\_\_\_ Variable axial piston

Motor \_\_\_\_\_ Variable bent axis piston

Max. drawbar pull\* \_\_\_\_\_ 372 kN

Transmission \_\_\_\_\_ Single lever control electronic straight tracking

Oil filter \_\_\_\_\_ 2 micron, spin-on, replaceable

Travel speeds\*

Forward \_\_\_\_\_ 0 – 9.3 km/h

Reverse \_\_\_\_\_ 0 – 9.3 km/h

Parking brakes \_\_\_\_\_ Heavy-duty, spring-applied, hydraulic pressure release

Steering brakes \_\_\_\_\_ Hydrostatic

Final drive \_\_\_\_\_ 2 helical gear reduction to planetary output

Ratio \_\_\_\_\_ 48.75 :1

#### TRANSMISSION COOLING

Type \_\_\_\_\_ Oil to air

Core size \_\_\_\_\_ 0.31m<sup>2</sup>

#### ELECTRICAL SYSTEM

Alternator \_\_\_\_\_ 120 amps

Batteries (2) \_\_\_\_\_ 12-volt, low-maintenance  
 1200 cold-cranking amps @ -18°C

#### OPERATOR ENVIRONMENT

ROPS/FOPS cab; Pneumatically suspended seat; w/ back adjustment; Seat belt; Adjustable armrests; Foot rests; Tool storage area; Headliner; Floor mat; Tilting seat platform; Noise level 78dbA.

##### Warning lights:

Air filter; Alternator; Diagnostic fault indicator; Engine coolant temperature; Engine oil pressure; Hydraulic filter; Low fuel level; Park brake engaged; Service soon indicator; Transmission filter; Transmission charge pressure.

##### Gauges:

Battery voltage; Digital hourmeter/tachometer diagnostic/service reminder; Fuel level; Transmission oil temperature; Transmission speed indicator; Water temperature.

##### Audible warnings:

Engine coolant temperature; Engine oil pressure; Low fuel level, Transmission charge pressure; Transmission/hydraulic temperature.

#### HYDRAULICS

Pump flow @ 2200 RPM \_\_\_\_\_ 160 l/min

Max pressure \_\_\_\_\_ 248 bar

**Lift Cylinder PAT** \_\_\_\_\_ nr. 2

Bore diameter \_\_\_\_\_ 114.3 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 428 mm

**Angle cylinder PAT** \_\_\_\_\_ nr. 2

Bore diameter \_\_\_\_\_ 114 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 502.7 mm

**Tilt cylinder PAT** \_\_\_\_\_ nr. 1

Bore diameter \_\_\_\_\_ 127 mm

Rod diameter \_\_\_\_\_ 63.5 mm

Stroke \_\_\_\_\_ 148.3 mm

##### Lift cylinder Bull Dozer

Bore diameter \_\_\_\_\_ 82.6 mm

Rod diameter \_\_\_\_\_ 50.8 mm

Stroke \_\_\_\_\_ 1000 mm

##### Tilt cylinder Bull Dozer

Bore diameter \_\_\_\_\_ 114.3 mm

Rod diameter \_\_\_\_\_ 36.5 mm

Stroke \_\_\_\_\_ 126 mm

\*Measured using standard track chain. Increase travel speeds by 4% and reduce drawbar pull by 4% w/ the optional CELT track chain

# SPECIFICATIONS

## SERVICE CAPACITY

Fuel tank	405 l
AD Blue Tank	60 l
Engine oil w/ filter	16.4 l
Engine oil w/o filter	15.6 l
Engine cooling system	30.2 l
Hydraulic reservoir	210 l
Final drive - per side	25 l
Track rollers - each	0.275 l
Front idlers - each	0.225 l
Carrier rollers - each	0.334 l

## UNDERCARRIAGE

Track adjustment \_\_\_\_\_ Hydraulic  
 Frame \_\_\_\_\_ Oscillating equalizer beam suspension and pivot shaft

### Track link pitch

CLT track	203 mm
CELT track	203 mm
Track shoe height	71.5 mm
Pin diameter	44 mm

### Bushing diameter

CLT track	72 mm
CELT track	93 mm

### Track shoes per side

CLT/CELT track	40 LT
	45 XLT /WT/LGP

### Track rollers per side

LT	7
XLT/WT-LGP	8
Carrier rollers per side	2
Track roller rail diameter	187.5 mm

## TRACK ON GROUND

Shoe area	
610 mm	32269 cm <sup>2</sup> LT
	39979 cm <sup>2</sup> XLT
711 mm	46599 cm <sup>2</sup> WT
762 mm	49941 cm <sup>2</sup> WT
914 mm	59904 cm <sup>2</sup> LGP

## BLADE

Variable blade pitch - adjustable	55° +/- 5°
Lift speed - per second	483 mm
Cutting edge	Reversible, replaceable
Width	200 mm
Thickness	20 mm

## RIPPER

Max. penetration	570 mm
Width	1953 mm
Cut width	1889 mm
Max. ground clearance	592 mm
Max. number of shanks	3
Tooth spacing	
w/3 teeth	944 mm
Hydraulic cylinder	Double-acting
Diameter	155 mm
Stroke	596 mm
Rod	69 mm

## OPERATING WEIGHT

Operating weight includes cab, full fuel and hydraulic tanks, 170 lb (77 kg) operator, CLT chain, front pull hook, rear retrieval hitch, track guides, back up alarm, horn, lights, track shoe, C-frame and blade width as noted.

	Weight (kg)	Add-on weights	Weight (kg)	CELT chains	Weight (kg)
Long Track	20213 kg PAT	Drawbar	66	24" (610 mm)	3182
	20206 kg Straight	Ripper (3 shank)	1355	28" (711 mm)	3928
	20485 kg Semi-U	Winch	2500	30" (762 mm)	4018
Extra Long Tracks	20599 kg PAT			36" (914 mm)	4628
	20592 kg Straight			Center rockguard	
	20871 kg Semi-U			LT	221
Wide Tracks	21269 kg PAT			XLT/WT/LGP	306
	21971 kg PAT Foldable			Sweeps	63
	21431 kg Straight				
Low Ground Pressure	22115 kg PAT				
	22790 kg PAT Foldable				
	22131 kg Straight				

# M-SERIES

## CRAWLER DOZERS

### 2050M TRACK AND SHOE OPTIONS

#### LT (Long Tracks)

610 mm	closed grousers and CLT
610 mm	open grousers and CELT

#### XLT (Extra Long Tracks)

610 mm	closed grousers and CLT
610 mm	open grousers and CELT

#### WT (Wide Tracks)

711 mm	closed grousers and CLT
711 mm	open grousers and CELT
762 mm	closed grousers and CLT
762 mm	open grousers and CELT

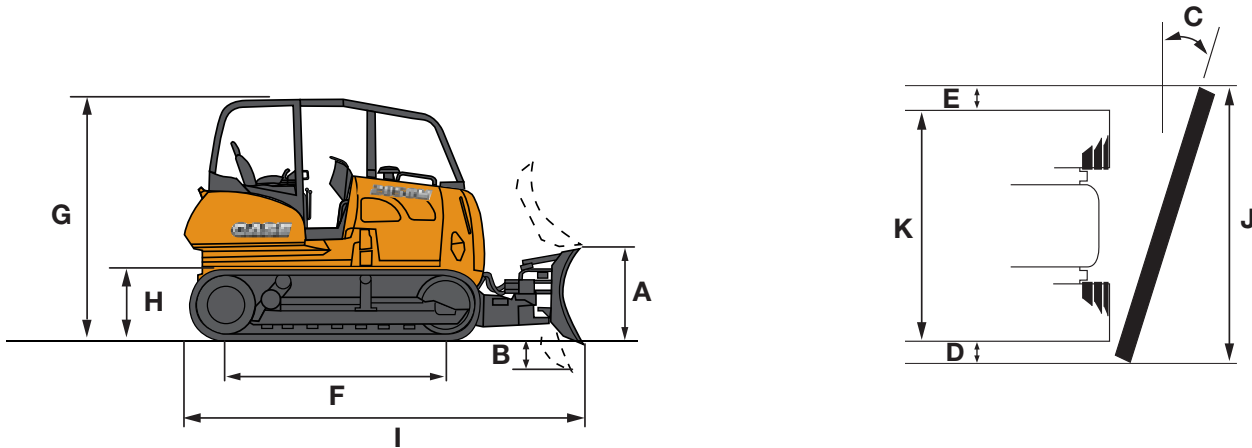
#### LGP (Low Ground Pressure)

914 mm	closed grousers and CLT
914 mm	open grousers and CELT

BLADE DIMENSIONS	Bull Dozer Straight	Bull Dozer Straight	Bull Dozer Semi-U	Straight PAT	Straight PAT	Foldable PAT
Blade Capacity SAE J1265	3.22 m <sup>3</sup>	3.78 m <sup>3</sup>	5.60 m <sup>3</sup>	4.83 m <sup>3</sup>	5.54 m <sup>3</sup>	5.54 m <sup>3</sup>
Undercarriage available	LT -XLT	WT - LGP	LT-XLT	LT-XLT	WT-LGP	WT - LGP
J Blade width	3334 mm	3901 mm	3426 mm	3606 mm	4064 mm	4064 mm
Blade width in transport position	3334 mm	3901 mm	3426 mm	3287 mm	3690 mm	3023 mm
A Blade height	1108 mm	1108 mm	1425 mm	1369 mm	1369 mm	1369 mm
Max. Tilt	+/-422 mm	+/-450 mm	+/- 411 mm	+/- 450 mm	+/- 550 mm	+/- 550 mm
Max. Pitch	+/- 5°	+/- 5°	+/- 5°	+/- 5°	+/- 5°	+/- 5°
C Max. Angle	-	-	-	+/- 28°	+/- 28°	+/- 28°
B Digging depth.	545 mm	539 mm	583 mm	590 mm	590 mm	590 mm
Max lift above ground	1169 mm	1165 mm	1244 mm	1130 mm	1130 mm	1130 mm
D Cast reach track coverage	393 mm	363 mm	438 mm	582 mm	472 mm	548 mm
E Cut reach track coverage	393 mm	363 mm	438 mm	154 mm	43 mm	119 mm

# SPECIFICATIONS

## 2050M GENERAL DIMENSIONS



Line drawings are for illustrative purpose only and may not be exact representation of unit.

	LT (Long Track)	XLT (Extra Long Track)	WT (Wide Track)	LGP (Low Ground Pressure)
<b>TRACKS</b>				
Track gauge	1940 mm	1940 mm	2260 mm	2260 mm
Max shoe width	610 mm	610 mm	762 mm	914 mm
F Track on ground	2645 mm	3277 mm	3277 mm	3277 mm
Area of track on ground	3.22 m <sup>2</sup>	4.65 m <sup>2</sup>	4.99 m <sup>2</sup>	5.99 m <sup>2</sup>
Ground pressure	0.62 kg/cm <sup>2*</sup>	0.44 kg/cm <sup>2**</sup>	0.42 kg/cm <sup>2***</sup>	0.36 kg/cm <sup>2****</sup>
<b>DIMENSIONS</b>				
G Height to top of cab	3103 mm	3103 mm	3103 mm	3103 mm
H Ground clearance	325 mm	325 mm	325 mm	325 mm
I Length				
- Blade straight with drawbar	5491 mm PAT 5387 mm Straight Semi-U	5902 mm PAT 5387 mm Straight Semi-U	5902 mm PAT 5894 mm Straight	5902 mm PAT 5894 mm Straight
- Blade straight with ripper	6974 mm PAT 6869 mm Straight Semi-U	7383 mm PAT 6869 mm Straight Semi-U	7383 mm PAT 6982 mm Straight	7383 mm PAT 6982 mm Straight
<b>Width</b>				
- Blade straight	3606 mm PAT 3334 mm Straight 3426 mm Semi-U	3606 mm PAT 3334 mm Straight 3426 mm Semi-U	4064 mm PAT PAT Foldable 3901 mm Straight	4064 mm PAT PAT Foldable 3901 mm Straight
J Blade angled	3287 mm PAT	3287 mm PAT	3690 mm PAT 3023 mm PAT Foldable	3690 mm PAT 3023 mm PAT Foldable
K Over track	2549 mm with 610 mm shoes	2549 mm with 610 mm shoes	3022 mm with 762 mm shoes	3175 mm with 914 mm shoes

\* with 610 mm shoes and PAT blade  
 \*\* with 711 mm shoes and PAT blade  
 \*\*\* with 762 mm shoes and PAT blade  
 \*\*\*\* with 914 mm shoes and PAT blade

NOTE: Ground clearance and overall height dimensions are with the grousers fully penetrated. Add 52.5 mm if unit is on solid surface.

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