

GMK5250L







GMK5250L specification

70 m
37 m
80 t
Mercedes OM 471 Euromot 4/ EPA Tier 4 final (390 kW/ 2460 Nm)
Mercedes G280-16 with VIAB
12t/ axle with 16" tires on steel rims, 10x6x10, brackets and hydraulic hoses for swing away jib, upper part of 3 sheave hook block (270 kg), 500 kg equipment (incl. tool box)
CCS, new carrier cabin, disc brakes, new MMI, swing away with jib inserts, 2-line aux. boom nose, "Fuel Saver" concept with electric air conditioning.



Main features & benefits

250 t rating:	\rightarrow	Highest rated 5 axle crane Convenience
	\rightarrow	Higher rental rates \$
70 m main boom	\rightarrow	More reach on height and radius
	\rightarrow	Higher utilization Time savings
Load charts	\rightarrow	Best load charts in class 🚺
	\rightarrow	Best utilization
	\rightarrow	5 axle crane gets jobs of 6 axle crane done!
Counterweight	\rightarrow	One global counterweight (resale globally)
	\rightarrow	Up to 21t roadable on the crane with boom \$
VIAB turbo clutch	\rightarrow	Best maneuvrability and comfort
	\rightarrow	Wear-free starting and breaking
	\rightarrow	No overheating and burning of the clutch 🔯
	\rightarrow	Less fuel consumption
	\rightarrow	Retarder is standard
Self-rig aux hoist	\rightarrow	No auxilary crane needed
	\rightarrow	Less mobilization and rigging costs





New serial specification

Carrier

- → New VIAB transmission with integrated retarder
- → Air condition in carrier cabin
- → Outrigger pad load indicator with read out on superstructure and carrier
- → CraneStar fleet management
- → One additional strobe light
- → Stereo radio/ CD Player
- → Work lights for outrigger beams
- → Suspension control in outrigger control boxes

Superstructure

- → Hoist camera incl. light
- → Second spotlight on superstructure cab
- → One additional strobe light
- → LMI status display (EN13000)
- → Working range limiter
- → Engine independent diesel air heater
- → Data logger



LMI status display (EN13000)





Product dimensions carrier







Product outrigger spread



5 Outrigger positions create an **ultimate flexibility** for every jobsite – also on very narrow terrain.

Advantages

Operator convenience:

- → More flexibility on job site access
- → Placing the crane in tighter spaces

Potential higher utilization:

 \rightarrow Get jobs done which competitors with less outrigger positions cannot.









Rigging on job site

Outrigger pad load indicator with read out on both superstructure and carrier is standard.







Driving and rigging on job site

The **GMK5250L** can be moved on jobsite with a maximum axle load of 28t in a configuration

- a) main boom plus full counterweight (80t)
- b) main boom, jib and extension plus 70t counterweight.
- Time efficiency on jobsites!
- → The new MMI display allows the driving of the MEGATRAKTM suspension from the carrier frame. Active adjustment of retracting and extending force without outriggers positioning possible

- Flexibility on jobsite to react to changing surfaces and required ground clearance.



Advantages

Operator convenience:

- → Shorter rigging time.
- \rightarrow Saves time when replacing the crane on the job site.

(no need to remove counterweight before driving on site)







Roading proposal boom over front

Weight per axle	Total				Counterweight		Equipment
in kg	in kg	Driveline	Tire size	Hook block	in t	Swing-away	in kg
12.000	60.000	10x6	445/95R25 on steel	3 sheave	0	brakets + drum	500
12.000	60.000	10x8	445/95R25 on aluminium	3 sheave	0	brakets + drum	500
16.500	82.500	10x8	445/95R25 on steel	1 sheave	21	swing-away jib incl. Attachments	500





Counterweight



→ One counterweight configuration for the



→ Heavy roadable configuration: 21t (23.1 USt) maximum on crane for 16.5t (18.2 USt) load per

axle* Best in class!



→ Base plate and first layer (21t (23.1 USt) = A, B and 2xC) rigable at once

	Α	В	С	D	E	F	G
	7,0 t (7.7 USt)	4,5 t (5.0 USt)	4,75 t (5.2 USt)	9,5 t (10.5 USt)	10,0 t (11.0 USt)	5,0 t (5.5 USt)	5,0 t (5.5 USt)
7,0 t (7.7 USt)	х						
16,5 t (18.2 USt)	x		2x				
21,0 t (23.1 USt)	х	х	2x				
26,0 t (28.7 USt)	х		2x	х			
30,5 t (33.6 USt)	х	х	2x	х			
35,5 t (39.1 USt)	x		2x	2x			
40,0 t (44.1 USt)	х	х	2x	2x			
45,5 t (50.2 USt)	x		2x	2x	х		
50,0 t (55.1 USt)	х	х	2x	2x	х		
70,0 t (77.2 USt)	x	х	2x	2x	х	2x	
80,0 t (88.2 USt)	x	x	2x	2x	x	2x	2x

* Optional adapter frame required to hold slab B on rear of crane for equal weight distribution





Counterweight interchangeability



Interchangibility with counterweight slabs of GMK6300L,GMK5180/5200 Possible to use same aux. hoist of GMK6300L (small update required)

\$ Advantages
 → Logistics. Storing counterweight on different locations → One hoist for two models saves costs



Counterweight and auxiliary hoist rigging





The **self rigging** procedure of the **auxiliary hoist** is possible with various counterweight configurations.

Advantages



→ No auxiliary crane needed for installation → less mobilization and rigging costs
 → Fast and operator friendly rigging



NEW! **Counterweight and auxiliary hoist rigging**



Optional: For the configuration with base plate only, a rigging frame simulates the counterweight.





Carrier Cabin

- → Adaption of new look of drivers cabin from big AT cranes
- → More driving comfort and better ergonomic instrumentation for driver
- → Improved heating- and cooling system with air-condition as standard
- → Better visibility thru cabin width

 $|_{\mathbf{X}}$

- → Better aerodynamic
- → Noise reduction
- → Increased quality
- → Rust free glass-fiber and aluminum composite



NEW!

Benefits

→ Best in class comfort and operator convenience
→ The "second" home for the operator.





Crane Control System (CCS) Carrier

- → Full graphic display
- → For better visibility
- → New ergonomic multi-function steering wheel







Cameras - rear view optional









Carrier engine: Mercedes-Benz

Latest engine technology including EPA Tier 4 final/Euromot IV



- → Six-cylinder in-line water-cooled diesel engine, turbocharged with intercooler OM471 (523 HP (390 kW)/ 1814 ft lb (2460 Nm)
- → EPA Tier 4 final/ Euromot IV compliant with limits for nitrogen oxides and particle emissions
- → High pressure fuel-injection system with unit injection pumps controlled by solenoid valves.
- → Electronic engine management
- → Selective Catalytic Reduction reduces the No_x by 90 %
- → Mercedes service and parts distribution all around the globe





Single engine concept

Carrier engine provides superstructure operation through one simple and reliable angular gear box. Hydraulic pumps are connected directly with the angular gear box in the center of the slew bearing.



→ Less maintenance (only one engine)







\$

Advantages

→ 26% less fuel consumption compared to Tier 4i (Euromot 3B) version

Potential fuel savings 10.000km/year = 2.340 EUR





Turbo retarder clutch VIAB





Wear-free Integrated Starting and Braking System

VIAB is a **turbo coupling** and integrated **retarder** all-in-one.

VIAB combines

- → Wear-free **starting** and **maneuvering**
- → Efficient **driving** with automated manual transmission
- → Wear-free braking

Benefits

- → Exceptional maneuverability
- → No overheating and burning of the clutch (less maintenance)
- → Smooth creeping on job site
- → Powerful integrated retarder standard
- → Less weight and less space





Turbo retarder clutch VIAB

- → Starting/ Maneuvering
 - → Full utilization of the engine torque of maximal 2,213 lb. ft. (3.000 Nm) up to the traction limit
 - → Maximal tractive power during start-up already at 1.100 rpm
 - Unlimited start-up/ maneuvering possible by high thermal stability (no overheating and burning of the clutch).
- → Driving
 - Short shifts by the combination with new Mercedes Benz PowerShift 3
 - → Lower fuel consumption when driving with friction clutch
- → Braking
 - → Most efficient braking effect
 - → Up to 2,213 lb. ft. (3.000 Nm) permanent braking torque in combination with highperformance engine brake throughout the whole speed range







Turbo retarder clutch VIAB benefits



i=17



Md= 3.000 Nm

Creeping mode included



High overall gear ratio allows

- → Low engine speed at cruise speed
- \rightarrow Creeping with closed clutch
- \rightarrow Hydrodynamic coupling/ converter
- → Hydrodynamic retarder
- \rightarrow Turbo clutch with variable oil-filling

Higher torque than competitive full automatic transmissions

Yes

Benefits

- → Optimal rpm range and lower fuel consumption
- → Wear-free creeping and breaking
- → No overheating and burning of the clutch due to variable oil filling depending on usage
- → Less maintenance

→ More power

→ No need of 2 speed transfer case





Suspension technology Megatrak[™]

MEGATRAK[™] is Grove's patented independent suspension and all- wheel steer System. Each wheel is able to remain on the ground at all times, so that stresses and weight are not continually transferred between axles.



Traditional suspension systems may raise the body of the crane, but does not increase ground clearance.





MEGATRAK™ does, as the differential is attached to the base of the carrier, offering a ground clearance up to 600 mm.



Suspension can be raised or lowered (both front/back and side to side by +170 mm/-130 mm on models with top steered **MEGATRAKTM** Cylinder +160 mm/-130 mm directly from the carrier cab and automatically leveled for road travel. **MEGATRAKTM** also allows the use of a deeper carrier cross section, which improves the overall torsion strength of the crane.







True ground clearance

Maximum ground contact

Driveline aligned

Steering linkage under and through carrier chassis

Deep carrier frame cross section

Travel on jobsite counterwieght

Reliable suspension system



Benefits

- → Easier access to unprepared job sites
- → No conventional axles
- → Weight evenly distributed
- → All axles remain in use all the time angles do not change
- ➔ Protected steering rods
- → Provides stronger lifting platform
- \rightarrow Driving the rigged crane with full
- → No maintenance required



Customer Benefits

- → Get more / different jobs done
- → Maintenance free Megatrak suspension
- → Less tire wear reduces operating costs
- → Equal axle weight distribution at all times
- → Less maintenance, less operating costs
- → No damages, maintenance free
- → Better load charts
- → Faster set-up and movement on job site
- → Less operation costs









GMK5250L Steer by wire



An easy to use all-wheel system gives the best steering on or off highway, eliminating tire scrub and stressed on non steering axles.

Exceptional maneuverability allows even the largest fully rigged GMK to get as close to the lift as possible. Other systems, where one or more "death weight" hanging axles remain fixed – lead to higher axle loads, driveline maintenance problems, increased ground pressure and tyre wall stress. All-wheel steer enables a fully laden crane to distribute weight evenly across all axles.



→ Less tire wear and less maintenance costs





Boom technology





No Stiffeners on Base Section (Saves Weight without loss of capacity) - 1100 Steel

MEGAFORM[™]

7 Section 13,27 m - 70,00 m Boom (with Megaform Shape Base Section)



Benefits

→ Weight optimized to get stronger load charts → see comparison slides (5 axle crane gets 6 axle jobs → higher rating, higher rate, higher utilization





Boom technology laser hybrid welding

NEW welding procedure:

Single weld layer with robotic laser hybrid





Old welding procedure: Manual 3 weld layers









Boom technology laser hybrid welding II

Boom section laser welding is full automised.

→ One single welding layer only instead of 3 welding layers in the past

Benefits
→ Weight savings
→ Higher quality
Laser hybrid weld seam



Traditional weld seam (old style)



Boom technology Grove Twin Lock[™]

TWIN-LOCK™ is a fully hydraulic system with electronic controls. It features a single telescopic cylinder that used **two horizontally-mounted pins** to move a boom section into the required position. The use of two pins **increases security** and their position in the side of the boom means they operate in the neutral zone. The use of a single telescope cylinder **reduces weight** used elsewhere to strengthen the crane, and increases lifting capacity.













Swetched end rope socket (standard)



Benefit

Operator convenience:

 \rightarrow Easy handling and reeving through the boom head and hook blocks







Swing-away jib configurations







Swing-away jib configurations



37 m jib with jib inserts

Easy installation of the swing-away jib with hydraulic pinning on the boom head









Heavy duty jib (optional)



• Heavy duty jib 13.5' (4m) for more flexibility on job sites

• 5-50° hydraulic off set-able for bigger working range

• Working indoors, turning loads with two hoist operation.

• Hydraulic pinning for easy and fast installation

• New jib and boom extension configurations

Benefits

Used for indoor operations and heavy lifts





Aux boom nose (optional)



Auxiliary boom nose with 2 lines of rope

Benefits

- → Often used for two hook block operation (in combination with the aux. hoist)
- → Turning loads (e.g. precasted loads)

Auxiliary boom nose with 1 line of rope

Benefits

- Used for two hook block operation (in combination with aux. hoist) with main hook block over boom head and small headache ball over the boom nose
- → Headache ball is used for fast and light lifts on one line of rope ´, whereas the main hook block is used for the heavy loads (reeved with more than 1 parts of lines)







Split hook block (optional)

- Hook block can be taken off, so that the sheaves stay on the machine
- → Easy and fast pinning to disconnect
- → 275 kg upper and 675 kg lower part





Benefits

Operator convenience and efficency with faster rigging and handling
 Less weight on the crane to comply with road regulation requirements





Crane Control System (CCS) superstructure





- → 2 Full graphic displays
- → Vertically mounted for better visibility



- \rightarrow Jog dial for easier input
- → New ergonomic joysticks





Operator convenience:

- \rightarrow Intuitive and user friendly operating system.
- → One Manitowoc system for all crane models (same as on new RTs, Crawler or Tower cranes)





Boom configurator main screen

The boom configurator allows inputs for:

- → Radius
- → Load
- → Boom length



Benefits

Operator convenience/ efficiency:

→ The boom configurator always selects out of the previously entered rigging configuration (outrigger base, counterweight, jibs,...)!







Boom configurator load input example

1. In this case the operator knows that he needs to lift: a load by 10m radius 2. In this case the operator knows that he needs to lift: a 10t load



Benefits



Operator convenience/ efficiency:
 → The boom configurator offers always best radius, maximum load, longest/shortest boom and the quickest sequence
 → Fast set-up





CCS new additional content

Joystick functions set-able for all crane functions (turning, hoisting, boom telescoping and jib operation).



Joystick response curves

Reset button for return to basic setting.



Operating speed preset between 0% and 100%.



Operator convenience: → Crane operation selection to the operator 's preference! (more sensitive use)

Benefit





CCS new additional content

Air condition icon

Ħ ດ 0.0 0.0 Q ? D LO ٤ı Q → ■:+:■ 1 °C/°F _ 73 -13 ₩ (]) \odot **E** 0 Χ ⚠ G X ON **₫** 555 OFF LIM 100 09:51

Air condition menu

Benefit

Operator convenience: → Easy and intuitive cont

→ Easy and intuitive control of the air conditioner and heater





CCS New Additional Content

- → Setting of 2 or more shortcuts (e.g outrigger or telescoping menu)
- → Easy and fast changeover between short-cut menu through
 - → Tab button below screen

or

→ Jog dial (located in operator seat)

Benefit

Operator convenience/ efficiency: → Faster and more convenient use of the operating system.







CCS New additional content

Displaying the operating hours

- The value indicates the total operating hours.
- → The value shows the individual (?) operating hours, which can be reset (e.g. to track rental duration).
- → Reset with pin code possible only.







GMK5250L Superstructure

More storage space on the left side of the superstructure for tools or lifting utilities.





Slewing gears (3) located in superstructure housing.









GMK5250L Working at height

Anti-slip protection on carrier decking.



Plane carrier deck

Benefit

Convenient and guided working environment for the operator





Guard rail around the superstructure





GMK5250L Working at height

Retractable foot walk.







Retractable foot walk is standard. Can be operated from carrier and superstrucure.

Benefit

→ Convenient and guided working environment for the operator







GMK5250L Superstructure periphery



Hydraulic tank in superstructure means no oil for crane operation through swivel. Carrier supplies power through Kessler gear connected to superstructure pumps. Hydraulic service connections and oil cooler inside superstructure housing.



Benefit

→ Good accessibility for maintenance work







GMK5250L Fuel saver

2 options:



Integrated power supply via small diesel engine unit



External electrical power supply via plug on job site or generator

Benefits

- → Good Less fuel consumption in idling mode
- → Less operating hours of the engine reduces maintenance costs



Reliability & maintenance

Product Quality Improvement





Better corrosion protection through painted valve blocks





Better corrosion protection trough usage of plasic coated hydraulic tubes





Better corrosion protection trough usage of zinc-nickel fittings

Benefit



→ Manitowoc sets new industrial standards with corrosion protection to extend the lifetime of your vehicle.



Crane Star

> A fleet management tool with several customer benefits!





Benefits

Manage your assets

→ Fleet management Improves your asset utilization
 → Machine location - Allows
 you to identify where your
 equipment is working,
 anywhere around the globe
 → Lift monitoring - Reports
 exact amount your crane is
 lifting
 → Work monitoring - See
 how productive your cranes
 are with real data
 → Machine performance
 and maintenance - Be

assured your cranes are working in top shape







Job site planning Cranimax



Benefits

- → Best state-of-the-art job site planning with simplified 3D function
- → Intuitive and easy to use software for a quick and accurate verification of load charts, degrees of freedom and calculation of outrigger loadings
- → Single or more cranes multi lift planning
- → All results are calculated depending on crane set-up
- → High class print-outs for job biddings

☆ \$





Job site planning Cranimax





Left picture: Visual job site layout **Top left:** Crane configuration including all lift details **Top right:** Outrigger pressure information

Benefits

→ Professional job site planning to win more jobs
 → Free-of-charge high end solution



Comparison vs. GMK5220 general specification

250 t vs. 220 t capacity rating2 m longer boom

12% stronger load charts in average 14,5 t @ 70 m boom vs 14 t @ 68 m boom 18,2 t @ 67 m boom vs. 14 t @ 68 m boom

More standard equipment (Air conditioning, heater, retarder, camera, WRL) Improved GVW with 16" tires... More jib configurations possible Aux boom nose with 2 lines of rope More stowage space Swetched end rope socket standard









Comparison vs. GMK5220 load charts





Comparison vs. GMK5220 Load charts – main boom



Main boom with maximum roadable counterweight: GMK5250L GMK5220 Counterweight 21t 16t Outrigger base 100% Advantage in % 100% Boom length in m 13,27 13,30 +10,47 17.85 18.57 +9.1228,54 27,20 +9,28 33,50 31,70 +6,24 +15,64 42,30 40,90 51.05 49.90 +14,66 61,49 59,10 +14,27 +32,59 66.87 68.00 +10,45 Overall

Main Boom Comparison

- \rightarrow 21 t roadable on the crane in boom over front configuration.
- \rightarrow 5 t more possible on crane then previous GMK5220 model.
- → Heavy roadable counterweight standard for every machine.





Comparison vs. GMK5220 Load charts – main boom

Main boom with 0 t counterweight (taxi):

	GMK5250L	GMK5220	
Counterweight	Ot	Ot	
Outrigger base	100%	100%	Advantage in %
Boom length in m	13,27	13,30	+0,02
	18,57	17,85	-0,75
	28,54	27,20	+4,65
	33,50	31,70	-2,42
	42,31	40,90	-1,22
	51,05	49,90	+2,15
	54,55	54,55	-13,16
	56,08	58,60	+19,31

Overall

+1,0	07

Taxi counterweight (0t):

- → Taxi load charts equal to previous model GMK5220
- → Slight advantages on long boom 56 m





Comparison vs. GMK5220 Load charts – swing-away jib





