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ROUGH TERRAIN CRANE

GR-1450EX

145 METRIC TON CAPACITY



Reaching new heights



GR-1450EX-3-E-17-11-03-86-540-A
Printed in Japan

ROUGH TERRAIN CRANE GR-1450EX

Crane capacity: 145,000 kg at 2.5 m
6-section long boom: 13.1 m - 61.0 m
2-staged bi-fold jib: 10.3 m / 18.0 m
Insert jib (option): 7.0 m (1 pce.)
14.0 m (2 pcs.)
Short jib (option): 3.6 m

The world's largest rough terrain crane just got better!

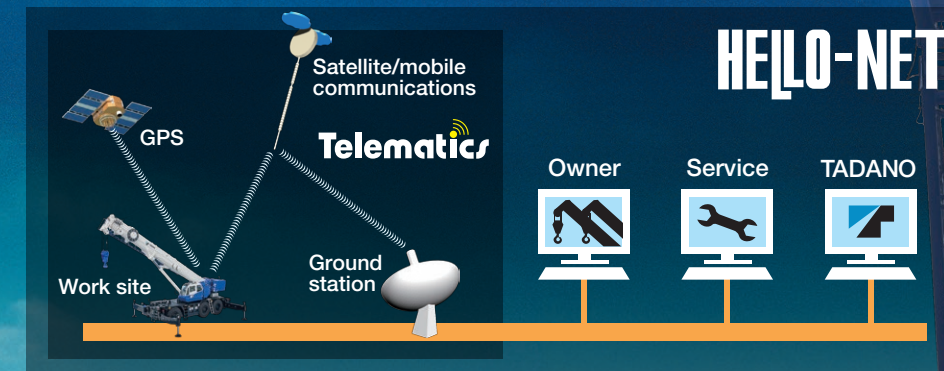
Introducing a brand-new option for Tadano's rough terrain crane with the highest lifting capacity in class worldwide! Get more done than ever before with our new heavy lift jib. Where previous generations of cranes would be limited, the GR-1450EX can lift higher and heavier loads with this addition. We are also now offering an insert lattice jib, which is a flexible option for operating at height in large facilities such as refineries or petrochemical factories. These new items were designed to maximize work efficiency and expand your abilities. The GR-1450EX never stops evolving.

Photo: Hydraulic offset jib

Plenty of new functions incorporated!

HELLO-NET

HELLO-NET is a tool that connects the crane operations with owners, their service staff and the manufacturer through satellite. This high quality telematic tool collects data of the crane including working history, maintenance data and machine location. HELLO-NET can be accessed by the manufacturer to assist with downtime and to help improve Tadano support services.



Telematics (machine data logging and monitoring system) with HELLO-NET via internet (*availability depends on the situation).
DETAILS: The availability of data communication systems, such as satellite or mobile communications which serve to widen the service area differs according to individual countries. Besides, there are some countries where the system itself is not in use yet. For details, please contact your distributor or our sales staff in charge.

Eco mode

The system controls the maximum engine speed during crane operation. In addition, due to curbing an unnecessary rise in the engine speed that occurs when accelerated to excess, the system enables CO₂ emissions and fuel consumption to decrease by max. 13 % with Eco mode 1 employed, and max. 21 % when Eco mode 2 is applied. In addition, it realizes a low level of noise.



Eco mode switch

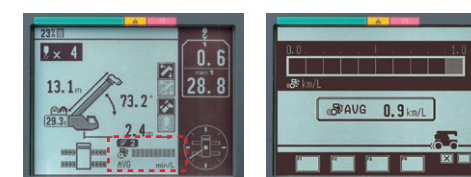
Positive control

The system effectively controls the quantity of hydraulic pump discharge at the time of crane operation in response to the amount of movement applied by the operating lever. Additionally, it keeps the quantity of hydraulic pump discharge to a minimum, reducing CO₂ emissions and fuel consumption by up to 20 %.



Fuel monitoring

The system constantly monitors and displays fuel consuming conditions on the AML screen. Checking the indicator enables you to prevent wasteful acceleration and wasteful standby.



During crane operation At traveling



Crane

The rounded boom is made of high tensile steel, which allows for decreased boom weight as well as increased boom strength. The high performance AML-C comes standard and helps the operator maintain safe operations.

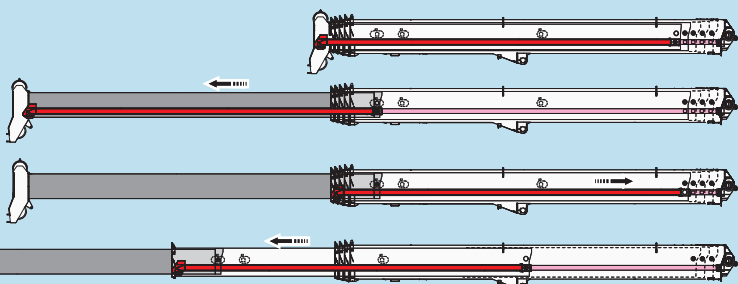
Single telescopic cylinder

For extension and retraction of sections, 6 section box type construction consist of 1 base section and 5 telescopic sections are extended by a single telescoping cylinder. All sections are fully extended/retracted automatically and locked in the selected working position.

Ultimate boom for rough terrain crane

Outline of telescoping mode

Boom telescoping of this crane is performed with one telescoping cylinder. Each telescopic section is extended and fixed with pins in sequence from the top with several telescoping modes based on the designated job plan.



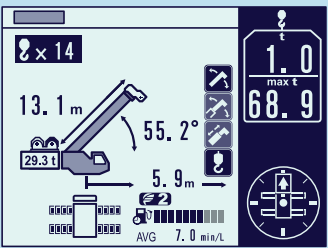
Display telescoping status

A single cylinder and each section of boom actual condition are displayed on the AML by Telescoping monitor switch.



Telescoping status indicator

AML displays load moment indicator



No.	m	1	2	3	4	5
1	13.1	0	0	0	0	0
2	17.4	0	0	0	0	45
3	21.8	0	0	0	0	90
4	26.2	0	0	0	45	90
5	30.6	0	0	0	90	90
6	35.0	0	0	40	90	90
7	39.4	0	0	90	90	90
8	43.8	0	40	90	90	90
9	48.2	0	90	90	90	90

Telescoping menu screen

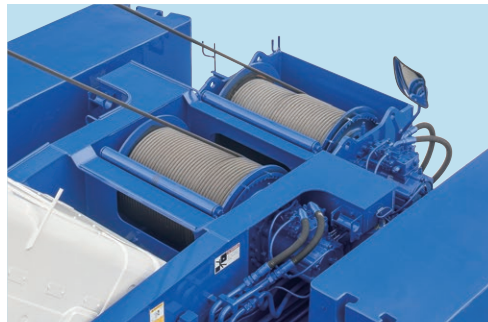
No.	m	1	2	3	4	5
1	13.1	0	0	0	0	0
2	17.4	0	0	0	0	45
3	21.8	0	0	0	0	90
4	26.2	0	0	0	45	90
5	30.6	0	0	0	90	90
6	35.0	0	0	40	90	90
7	39.4	0	0	90	90	90
8	43.8	0	40	90	90	90
9	48.2	0	90	90	90	90

Telescoping status screen

Two winches with cable follower

Both the main winch and the auxiliary winch with powerful line pull operate at high speeds, thus serving to enhance work efficiency.

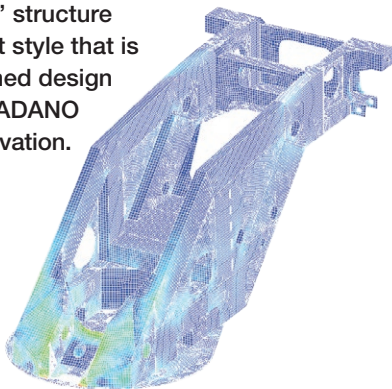
*Maximum permissible line pull may be affected by wire rope strength.



New crane structure

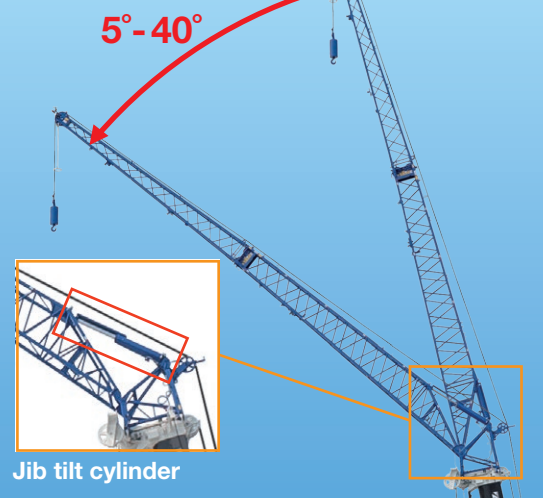
During the development of the structural shape of the crane, *FEM analysis was applied to achieve a design tailored for optimal operation. The slewing frames' structure ensures a highly rigid, compact style that is well suited for the overall planned design of the crane. Continuing the TADANO tradition of excellence and innovation.

*FEM: Finite Element Method



Hydraulic offset jib (5°-40°)

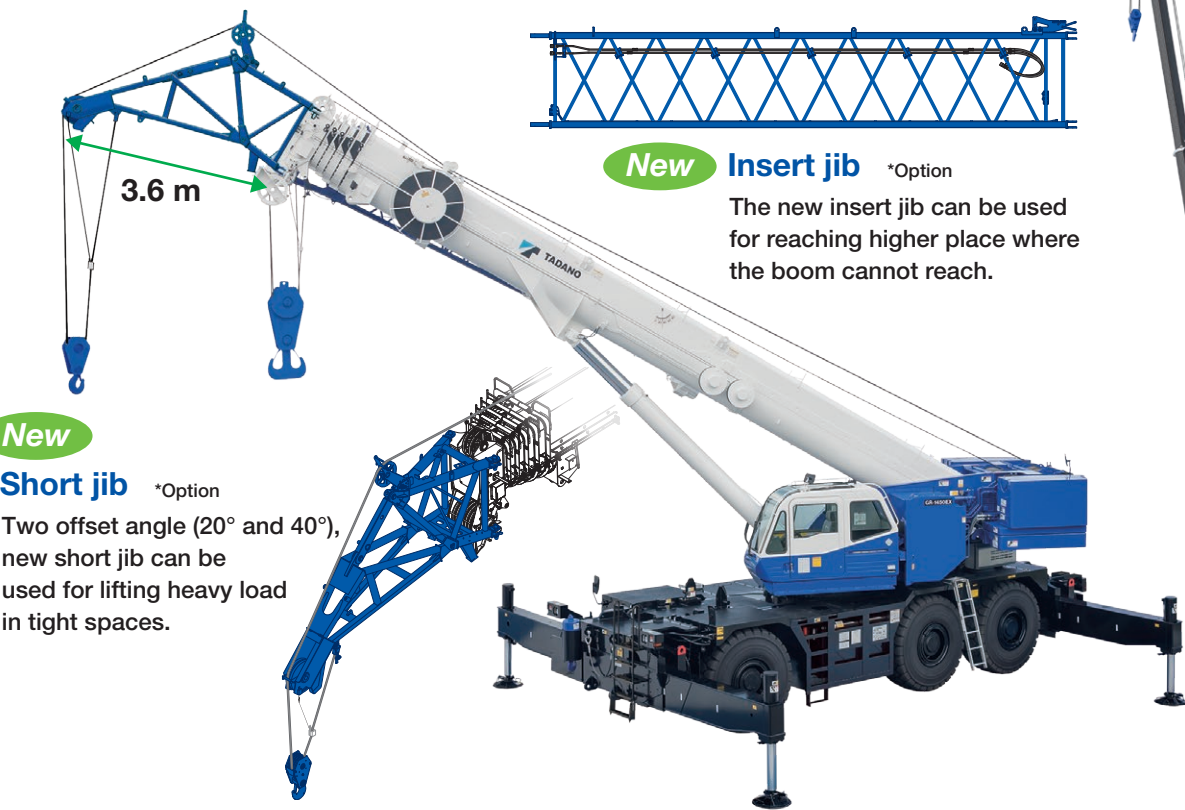
Hydraulic offset jib can be adjusted between 5° to 40° by the jib tilt cylinder.



Jib tilt cylinder

Bi-fold hydraulic offset jib

Extra reach is provided by a 2-staged bi-fold lattice type hydraulic offset jib that stows alongside the base boom section and features self-stowing jib mounting pins. When erected, the jib can be offset 5° - 40° from the main boom center line, thus increasing operating range.



New Short jib

*Option

Two offset angle (20° and 40°), new short jib can be used for lifting heavy load in tight spaces.

Tiltable cab

You can operate the crane comfortably by tilting the cab during high hoisting operations such as lifting with the jib.

The cab tilting angle is between 0° and 15°.



Cab tilt indicator and switch

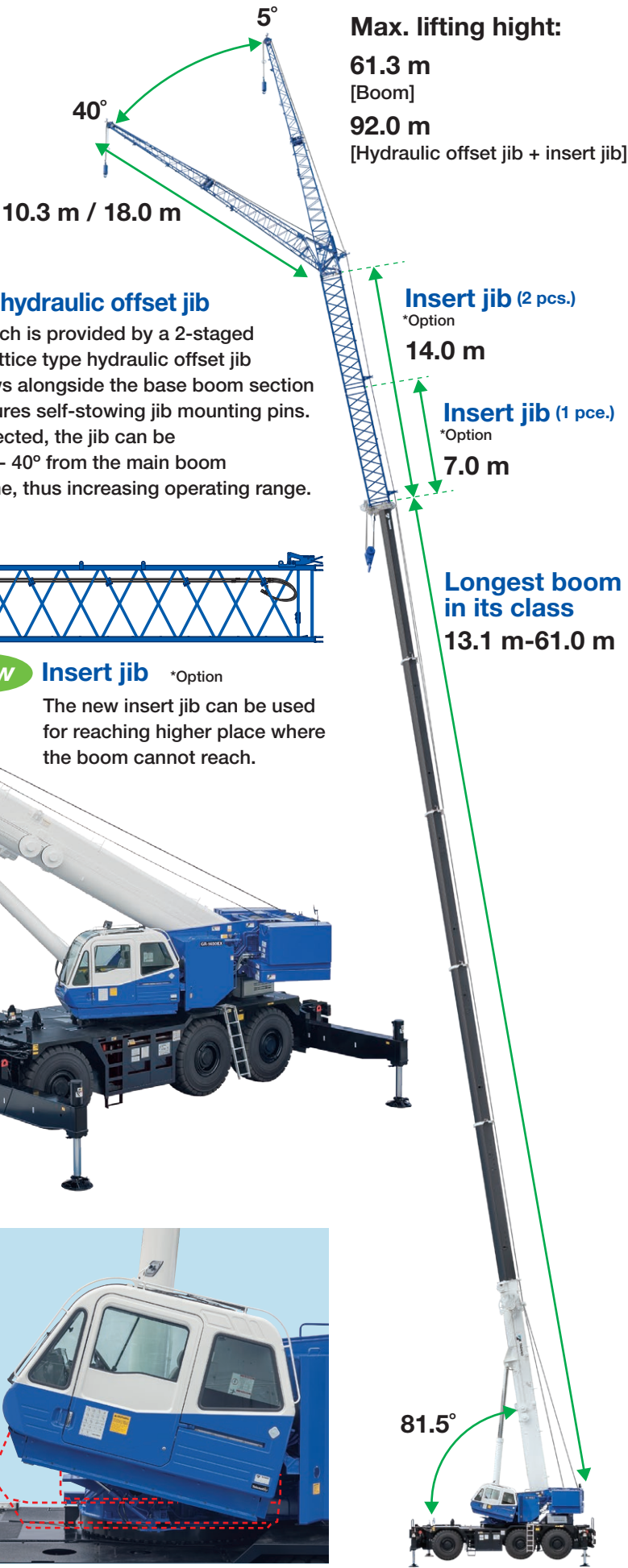


Max. lifting height:

61.3 m
[Boom]

92.0 m

[Hydraulic offset jib + insert jib]



Automatic moment limiter [AML-C]



Tadano's new AML-C is easy to use. It allows the operator to simultaneously monitor: boom angle, boom length, operating pressure of the elevating cylinder, the extension width of outriggers, slewing position, rated lifting capacity and present hook load. All of this enables the AML-C to move easily through lifting capacity changes without changing configurations and codes to make a lift.

The AML-C provides both audio and visual warnings when a condition exists that will overload the crane and automatically employs our slow stop function to avoid shock loads.

The AML-C with "OPERATOR" pre-set working range limits and automatic slow stop functions will assist the operator to deliver safe and smooth operations for years to come.



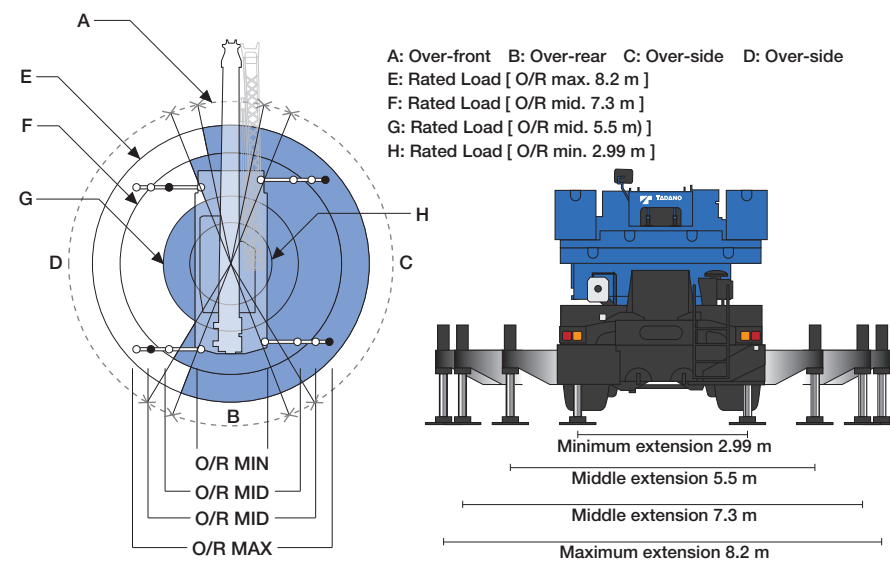
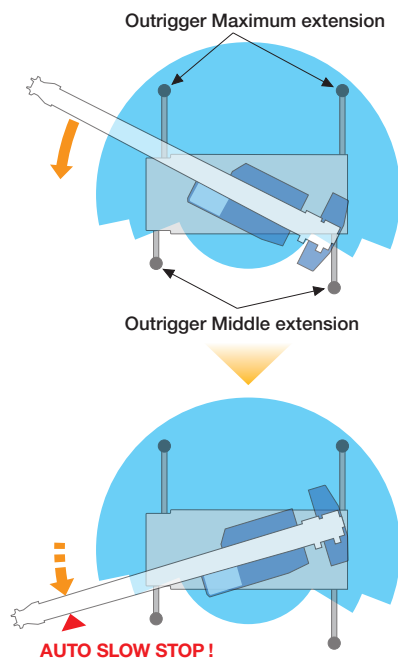
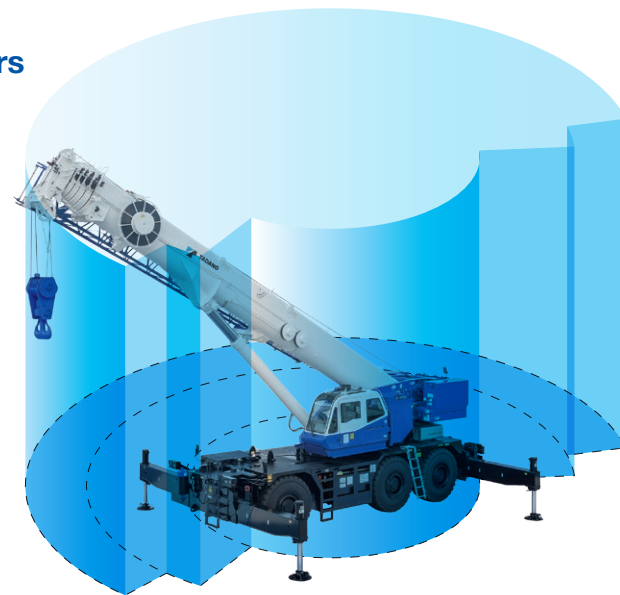
AML lamp

Control of asymmetric extension width of outriggers

When operating the crane with the asymmetric outriggers extended, the AML-C automatically detects the extension width of outriggers at the front and rear, and to the left and right of the crane to allow maximum work capacity in each area.

When slewing the boom from the longer outrigger area to the shorter outrigger area, the AML-C automatically detects the motion and displays the maximum capacity depending on each of the extension widths of outriggers, and brings the motion to a slow stop before it reaches the limits of the allowed capacity.

Therefore, even in the case of operator error, the AML-C's slow stop function will help to minimize any safety risk.



Operator comfort

The crane cab provides improved livability and offers the operator a more comfortable working environment.



The control levers are smooth and responsive to the operators touch.



Front steps



Rear steps



Left side steps



Right side steps

Tool box

Aviation obstruction light (option) and anemometer (option)

Air conditioner
Hot-water heater and air conditioning.



Compact carrier for rough terrain crane

The GR-1450EX has a 3-axle, compact width/height carrier which offers improved maneuverability and the ability to reduce space for transportation.

- Overall length: approx. 16,190 mm
- Overall width: approx. 3,315 mm
approx. 3,500 mm (+ Extra weights)
- Overall height: approx. 3,785 mm
- Min. turning radius (at center of extreme outer tire)
 - 2-wheel steering: 14.9 m
 - 6-wheel steering: 9.9 m
- Max. traveling speed (with counterweight): 15 km/h
- Gradeability ($\tan \theta$) - 44% (with counterweight 29.3 t), 52% (with counterweight 18.2 t), 57%*
- * Machine should be operated within the limit of engine crankcase design (30°: Cummins B6.7)

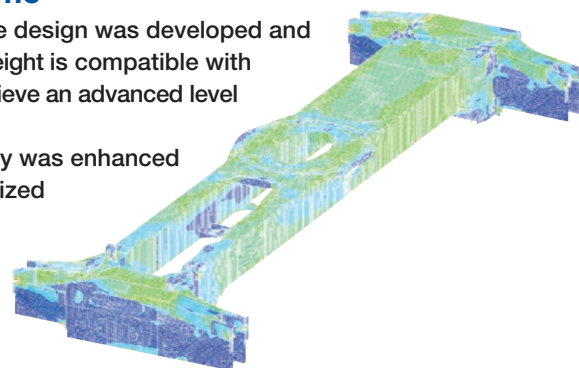
Smooth transmission

- Electronically controlled, fully automatic transmission.
- Torque converter driving full power shift with driving axle selector.
- 5 forward and 2 reverse speeds, constant mesh.
 - 2 speeds - High range - 2 wheel drive ; 4 wheel drive
 - 3 speeds - Low range - 4 wheel drive

New carrier frame

The new carrier frame design was developed and built so that its lightweight is compatible with its high rigidity to achieve an advanced level of performance.

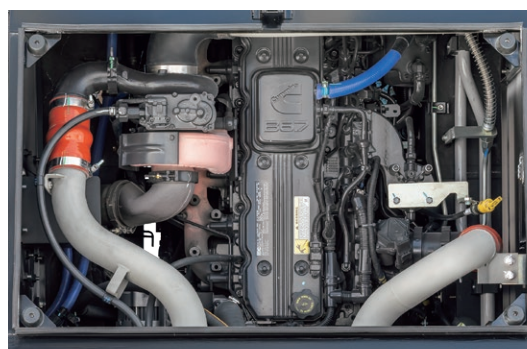
As a result, the rigidity was enhanced enabling highly stabilized maneuverability.



High-Performance Engine

Cummins QSB6.7 EPA [EU Stage IV]
4 cycle, turbo charged and after cooled

Max. output: Gross 201 kW at 2,000 min⁻¹ {rpm}
Max. torque: 990 N·m at 1,500 min⁻¹ {rpm}



Axle

- 1st: Full floating type, steering and driving axle with planetary reduction and open differential.
- 2nd: Steering and not driving axle.
- 3rd: Full floating type, steering and driving axle with planetary reduction and open differential.

Brake systems

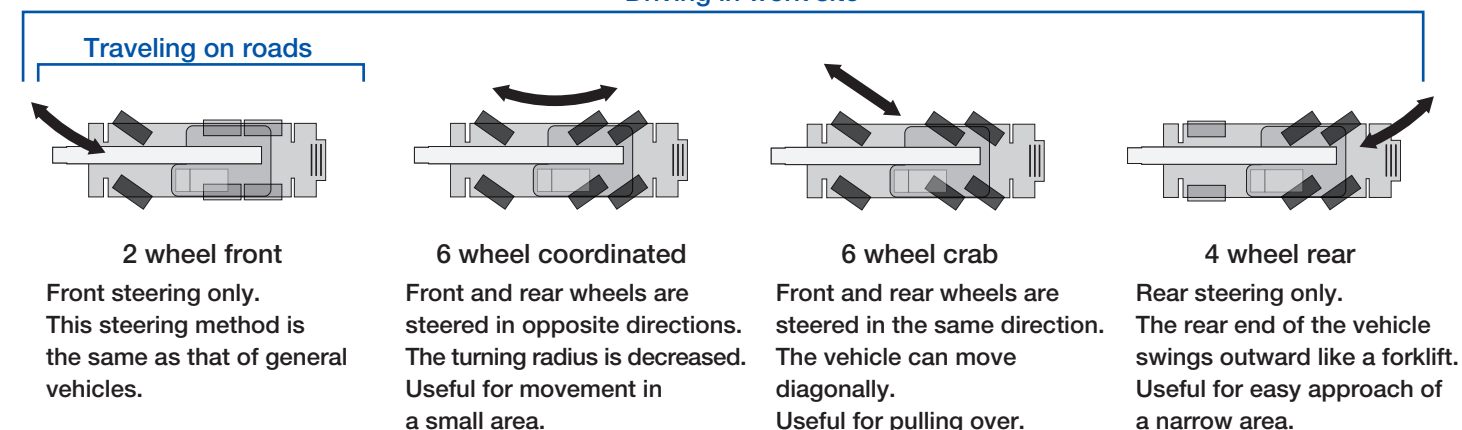
- Service: Air over hydraulic disc brakes on all 6 wheels.
- Parking/Emergency: Spring applied-air released brake acting on input shaft of 1st and 3rd axle.
- Auxiliary: Electro-pneumatic operated exhaust brake.



4 Steering mode

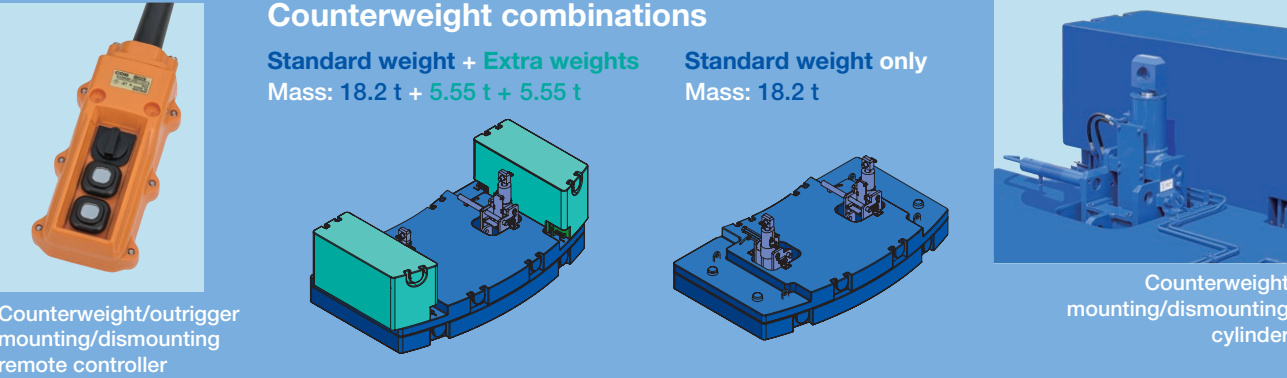
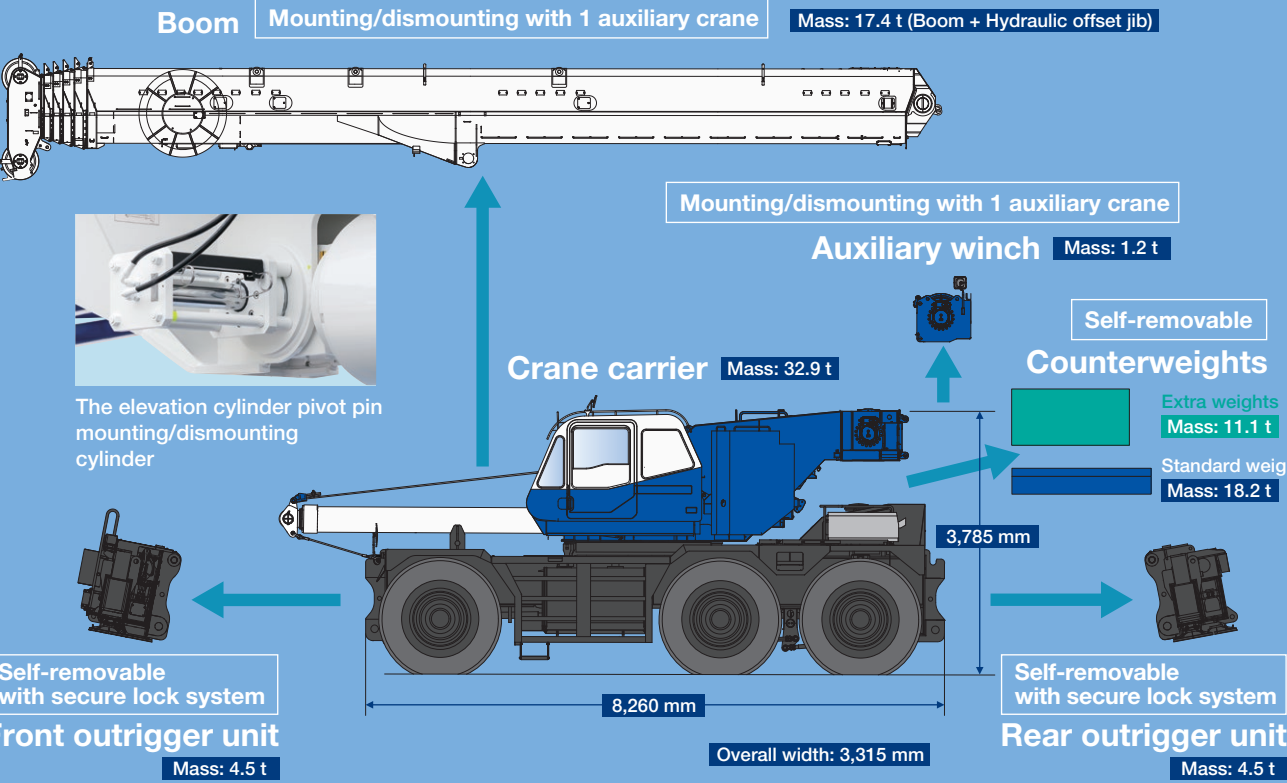
Hydraulic power steering controlled by steering wheel.

Driving in work site



Mounting and dismounting systems

The GR-1450EX has several mounting and dismounting systems for traveling and transportation. Only the boom mounting/dismounting system is optional.



Self-removable counterweight

Counterweight is hydraulically mounting/dismounting; in addition, dismounted counterweights can be lifted and moved for transport without a helper crane, as well as being re-mounted at a work site for operation.

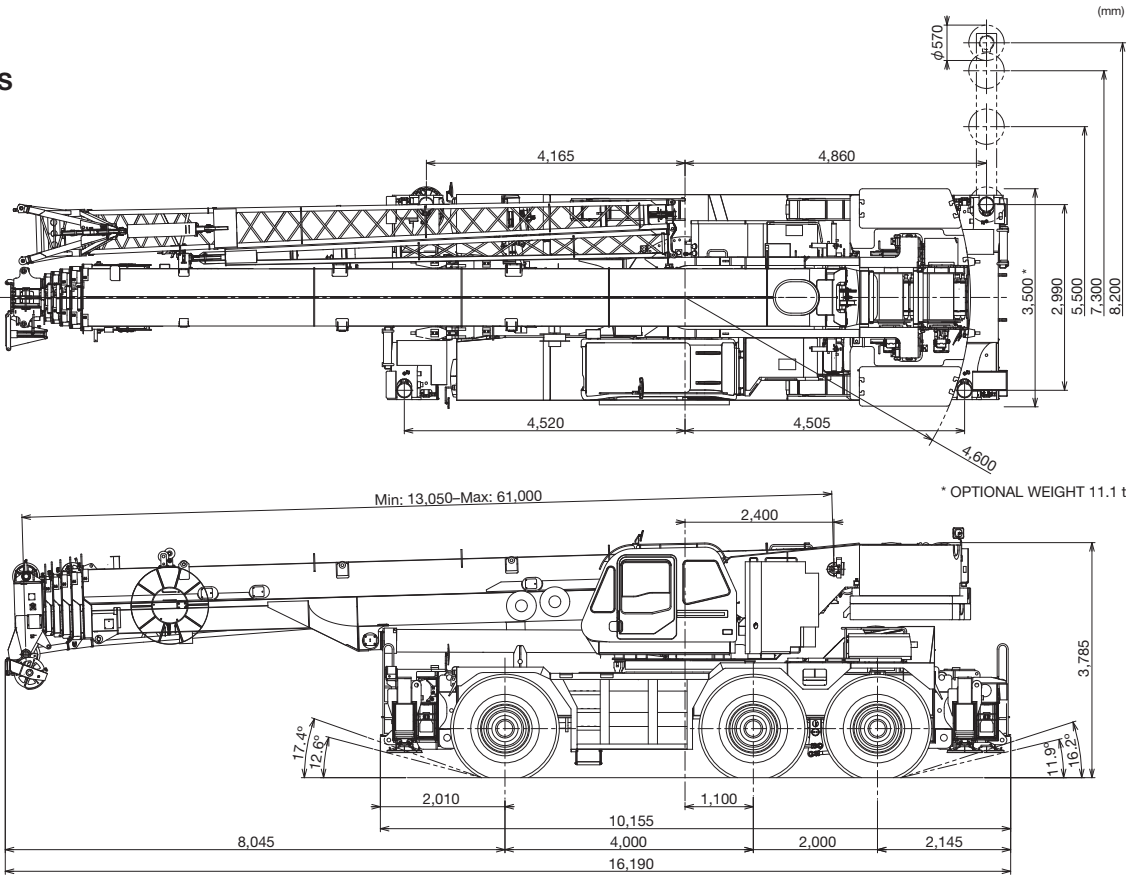


SPECIFICATIONS

MAXIMUM CAPACITY	145,000 kg at 2.5 m
PERFORMANCE	
Max. traveling speed (with counterweight)	15 km/h
Gradeability (tan θ)	44% (with counterweight 29.3 t), 52% (with counterweight 18.2 t), 57%* * Machine should be operated within the limit of engine crankcase design (30°: Cummins B6.7)
WEIGHT	
Gross vehicle mass	91,154 kg
-1st axle	29,398 kg
-2nd axle	30,640 kg
-3rd axle	31,116 kg
MIN. TURNING RADIUS	14.9 m (2-wheel steering), 9.9 m(6-wheel steering) (at center of extreme outer tire)
BOOM	
Fully retracted length	6-sections extended by single telescoping cylinder.
Fully extended length	13.1 m
Extension speed	61.0 m
Angle	47.9 m in 450 s
Elevation speed	-1.5° to 81.5°
JIB	
Offset	Two staged slewing around boom extension;
Length	5°-40°
Insert jib (option)	10.3 m and 18.0 m
Length	
Short jib (option)	7.0 m (1 pce.), 14.0 m (2 pcs.)
Offset	
Length	20°, 40°
MAIN WINCH	
Single line pull	3.6 m
Single line speed	Variable speed type with grooved drum driven by hydraulic axial piston motor.
Wire rope	70.6 kN {7,200 kgf}
AUXILIARY WINCH	
Single line pull	136 m/min. (at 4th layer)
Single line speed	19 mm x 320 m (Diameter x length)
Wire rope	Variable speed type with grooved drum driven by hydraulic axial piston motor.
SLEWING	
Slewing speed	70.6 kN {7,200 kgf}
Tail slewing radius	136 m/min. (at 4th layer)
HYDRAULIC SYSTEM	
Pumps...	19 mm x 225 m (Diameter x length)
Control valves...	2 variable piston pumps for crane functions. Tandem gear pump for steering, slewing and other equipment.
Reservoir...	Multiple valves actuated by pilot pressure with integral pressure relief valves.
Oil cooler...	763 liters capacity. External sight level gauge. Air cooled fan type.

Automatic Moment Limiter (Model: AML-C)	Following information is displayed: • Control lever lockout function with audible and visual pre-warning • Number of parts of line • Boom position indicator • Outrigger state indicator • Slewing angle • Boom angle / boom length / jib offset angle / jib length / load radius / rated lifting capacities / actual loads read out • Potential lifting height • Ratio of actual load moment to rated load moment indication • Permissible load • Automatic speed reduction and slow stop function for boom elevation and slewing • Working condition register switch • Load radius / boom angle / tip height / slewing range preset function • External warning lamp • Tare function • Main hydraulic oil pressure • Fuel consumption monitor • Main winch / auxiliary winch select • Drum rotation indicator (audible and visible type) main and auxiliary winch • On-rubber indicator
OUTRIGGERS	4 hydraulic, beam and jack outriggers. Vertical jack cylinders equipped with integral holding valve. Each outrigger beam and jack is controlled independently from cab.
Extension width	Max. ... 8,200 mm, Mid. ... 7,300 mm & 5,500 mm Min. ... 2,990 mm, Float size (diameter)... 570 mm
CARRIER	Rear engine, left-hand steering, driving axle 2-way selected type by manual switch. 6 x 2 1st drive, 6 x 4 1st and 3rd drive
ENGINE	Model... Cummins QSB6.7 EPA [EU Stage IV] Type... 4-cycle, turbo charged and after cooled, direct injection diesel. Piston displacement ... 6.7 liters Bore x stroke... 107 mm x 124 mm Max. output... Gross 201 kW at 2,000 min ⁻¹ {rpm} Max. torque... 990 N·m at 1,500 min ⁻¹ {rpm}
TRANSMISSION	Electronically controlled full automatic transmission.
STEERING	Hydraulic power steering. 4 steering modes available: 2-wheel front, 4-wheel rear 6-wheel coordinated, 6-wheel crab
SUSPENSION	1st... Rigid mounted to frame. 2nd, 3rd... "Hydro-Pneumatic suspension cylinders" with leveling adjustment and oscillation.
TIRES	26.5R25☆☆, Air pressure: 650 kPa
FUEL TANK CAPACITY	300 liters

DIMENSIONS



Note: Some specifications are subject to change.