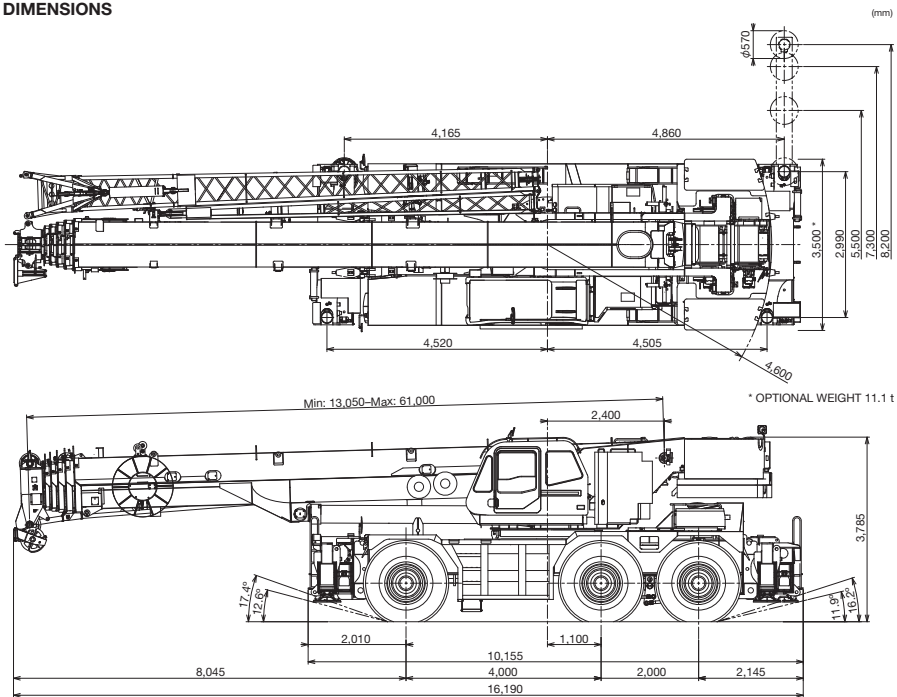


DIMENSIONS



Front



Left



Rear



Right

Photo: Hydraulic offset jib

*Some specifications are subject to change



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GR-1600XL-3-ESA-18-3-01-83-546-A
Printed in Japan



Lifting your dreams

ROUGH TERRAIN CRANE

GR-1600XL

145 METRIC TON CAPACITY (160 US TON)

**ROUGH
TERRAIN
CRANE**



*The GR-1600XL:
High Quality We Are Proud Of*

Photo: Hydraulic offset jib

ROUGH TERRAIN CRANE GR-1600XL

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-1600XL 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-1600XL never stops evolving.

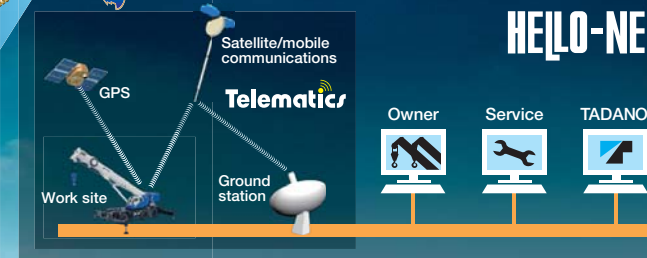
Photo: Hydraulic offset jib

Plenty of new functions incorporated!

HELLO-NET



It is a crane management system available to be used via the Internet that is capable of taking a grip on crane operating conditions, a machine location and so forth in a timely manner which serve to widen the service area differs according to individual countries.



Note: HELLO-NET availability varies by country.
For detail, 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

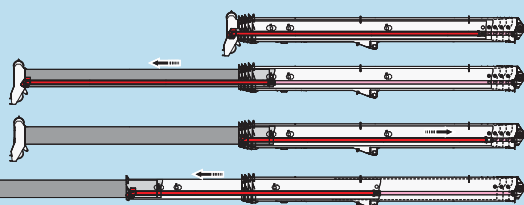
The rounded boom is made of high tensile steel, which allows for decreased boom weight as well as increased boom strength. The high performance AML-C comes standard and helps the operator maintain safe operations.

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 telescopic cylinder. All sections are fully extended/retracted automatically and locked in the selected working position.

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.



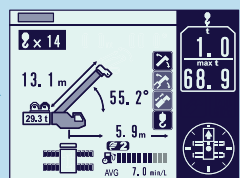
Display telescoping status

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

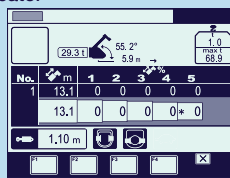


Telescoping status indicator

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	0	45
5	30.6	0	0	0	0	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

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.

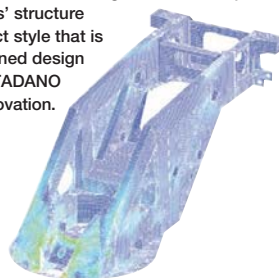
*Maximum permissible line pull may be affected by wire rope strength.



New crane structure

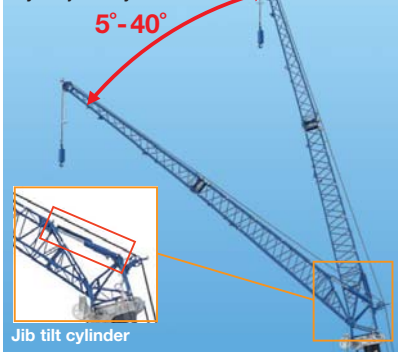
During the development of the structural shape of the crane, *FEM analysis was applied to achieve a design tailored for optimal operation. The slewing frames' structure ensures a highly rigid, compact style that is well suited for the overall planned design of the crane. Continuing the TADANO tradition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

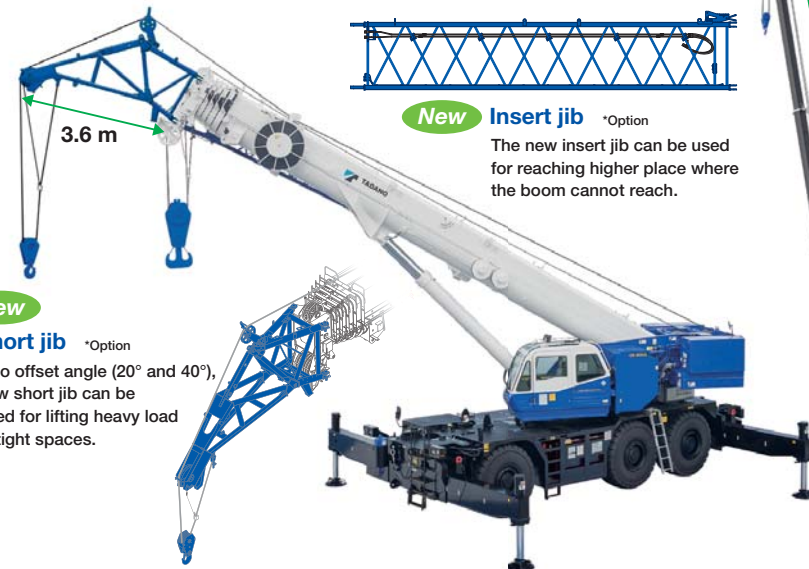


Jib tilt cylinder

New

Short jib

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



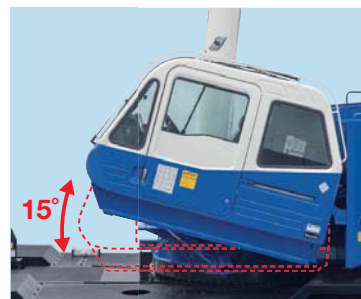
Tiltable cab

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°.

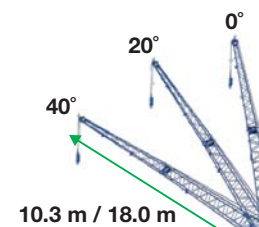


Cab tilt indicator and switch



Max. lifting height:

61.3 m
[Boom]
92.0 m
[Hydraulic offset jib + insert jib]
92.2 m
[Manual offset jib + insert jib]



Bi-fold jib

A two-stage, bi-fold lattice-type jib can be offset at 0°, 20°, and 40° to enable the operator to carry out jobs that require extra reaching ability.

Insert jib (2 pcs.)

*Option

14.0 m

Insert jib (1 pce.)

*Option

7.0 m

Longest boom in its class

13.1 m-61.0 m

81.5°

Photo: Manual offset 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 smooth operations.



AML lamp

Control of asymmetric extension width of outriggers

When operating the crane with the asymmetric outriggers extended, the AML-C detects the extension width of all of the crane's outriggers (front, rear, left and right) to measure maximum work capacity in each area. When slewing the boom from the longer outrigger area to the shorter outrigger area, the AML-C detects the motion and displays the maximum capacity according to the extension width of each of the outriggers, and brings the motion to a slow stop before it reaches the maximum capacity. Regardless of operator awareness, the AML-C's slow stop function will help to minimize any safety risk.

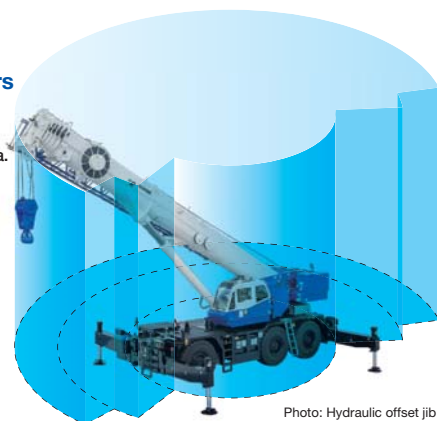
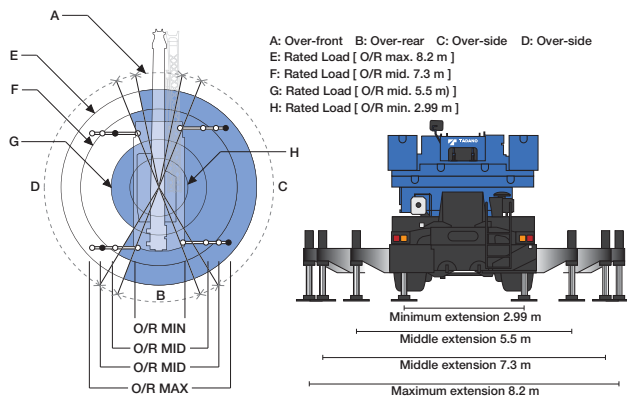
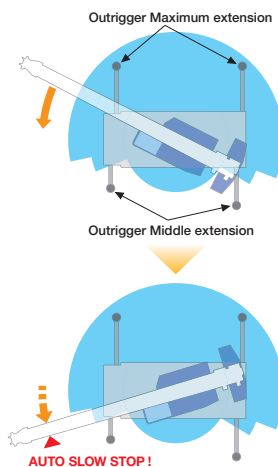


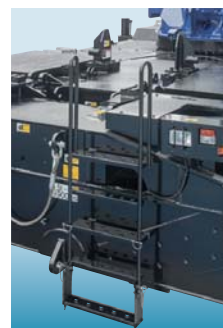
Photo: Hydraulic offset jib



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



Air conditioner
Hot-water heater and air conditioning.



Tool box



Aviation obstruction light (option)
and anemometer (option)



Compact carrier for rough terrain crane

The GR-1600XL 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 θ) (with 18.2t counterweight): computed 52 % (at stall) *30 %

* Machine should be operated within the limit of engine crankcase design (17": Mitsubishi 6M60-TL).

Photo: Hydraulic offset jib

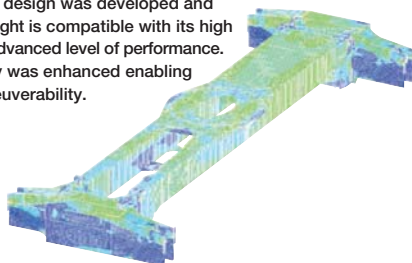
Smooth transmission

- 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

Mitsubishi 6M60-TL

4 cycle, turbo charged and after cooled,
6 cylinder in line, direct injection, water cooled diesel engine.

Max. output: 200 kW at 2,600 min⁻¹ {rpm}

Max. torque: 785 N-m at 1,400 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.

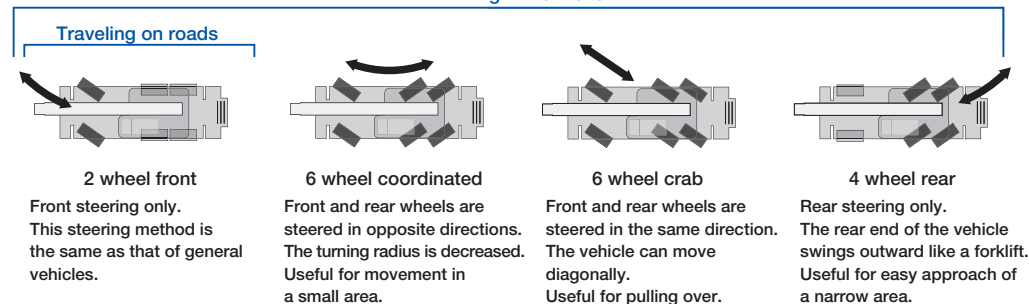


Photo: Hydraulic offset jib

4 Steering mode

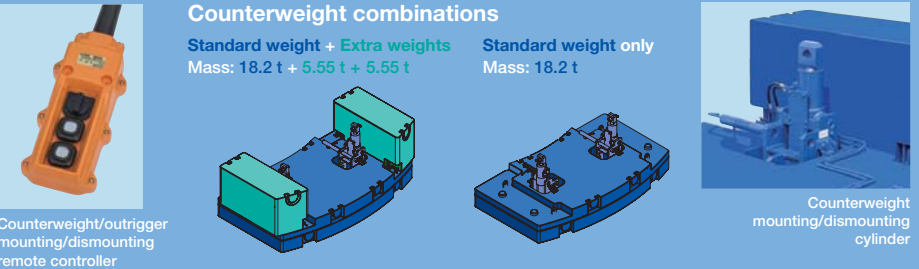
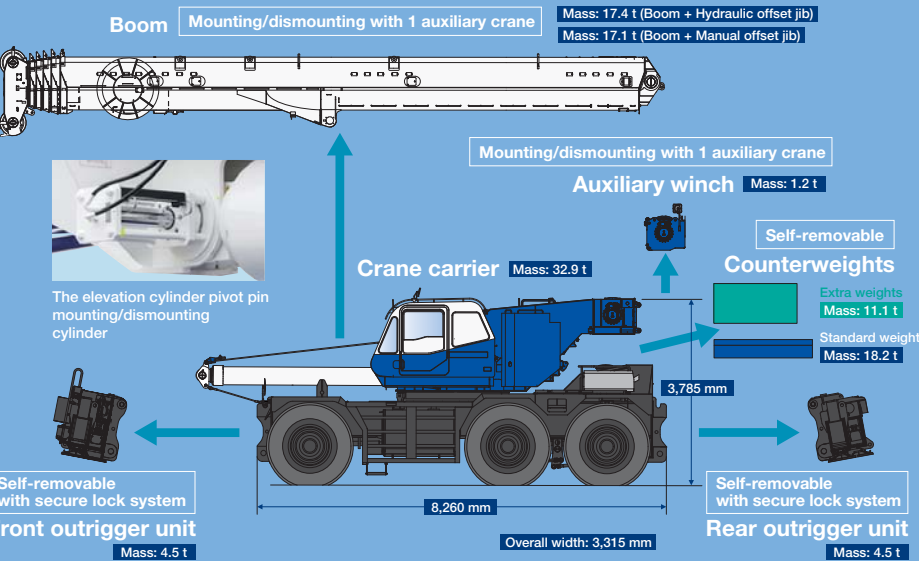
Hydraulic power steering controlled by steering wheel.

Driving in work site



Mounting and dismounting systems

The GR-1600XL 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, dismantled counterweights can be lifted and moved for transport without a helper crane, as well as being re-mounted at a work site for operation.

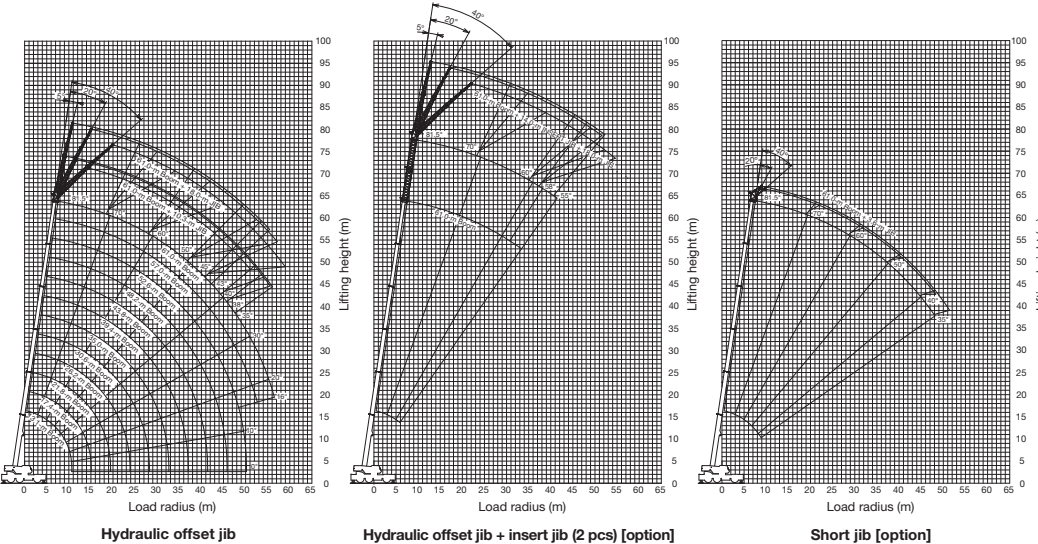


SPECIFICATIONS

MAXIMUM CAPACITY	145,000 kg at 2.5 m (160 US TON)
PERFORMANCE	15 km/h
Max. traveling speed (with counterweight)	52% (at stall), 30% ^{*1}
Gradeability (tan θ) (with 18.2 t counterweight)	^{*1} Machine should be operated within limit of engine crankcase design (17: MITSUBISHI 6M60-TL).
WEIGHT	Gross vehicle mass 91,154 kg 90,805 kg ^{*2} -1st axle 29,398 kg 28,701 kg ^{*2} -2nd axle 30,640 kg 30,814 kg ^{*2} -3rd axle 31,116 kg 31,290 kg ^{*2}
MIN. TURNING RADIUS	14.9 m (2-wheel steering), 9.9 m (6-wheel steering) (at center of extreme outer tire)
BOOM	6-sections extended by single telescoping cylinder. Fully retracted length 13.1 m Fully extended length 61.0 m Extension speed 47.9 m in 450 s Angle -1.5° to 81.5° Elevation speed 20° to 60° in 28 s
JIB	Offset Length 5'-40" 0", 20", 40" ^{*2} Insert jib (option) 10.3 m and 18.0 m Short jib (option) 7.0 m (1 pcs), 14.0 m (2 pcs.) Offset Length 20°, 40° 3.6 m
MAIN WINCH	Variable speed type with grooved drum driven by hydraulic axial piston motor. Single line pull 70.6 kN (7,200 kgf) Single line speed 136 m/min. (at 4th layer) Wire rope 19 mm x 320 m (Diameter x length)
AUXILIARY WINCH	Variable speed type with grooved drum driven by hydraulic axial piston motor. Single line pull 70.6 kN (7,200 kgf) Single line speed 136 m/min. (at 4th layer) Wire rope 19 mm x 225 m (Diameter x length)
SLEWING	Slewing speed 1.3 min ⁻¹ (rpm) Tail slewing radius 4,600 mm
HYDRAULIC SYSTEM	Pumps... 2 variable piston pumps for crane functions. Tandem gear pump for steering, slewing and other equipment. Control valves... Multiple valves actuated by pilot pressure with integral pressure relief valves. Reservoir... 783 liters capacity. External sight level gauge. Oil cooler... Air cooled fan type.

TADANO 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 angle / boom length / 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... MITSUBISHI 6M60-TL (Tier2) Type... 4-cycle, turbo charged and after cooled, 6 cylinder in-line, direct injection, water cooled diesel engine. Piston displacement... 7,540 cm ³ Bore x stroke... 118 mm x 115 mm Max. output... 200 kW at 2,600 min ⁻¹ (rpm) Max. torque... 785 N·m at 1,400 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 ^{1/2} 32 ⁺ , Air pressure: 650 kPa
FUEL TANK CAPACITY	300 liters

WORKING RANGE



There are two specification sheets available, Hydraulic offset jib and Manual offset jib, so please see specification sheet to clarify all your technical concerns. Working range and dimension chart show Hydraulic offset jib.

Note: Some specifications are subject to change.