

TM-ZE290HRS

For Small Size Vehicles

CARGO CRANE



Note: Some specifications may be subject to change.



TADANO QUALITY: advanced safety and power in a single package

The TM-ZE290HRS is a more powerful crane that comes with the sophisticated, high-quality Safety Eyes system as standard equipment. It delivers greater safety and peace of mind.

TM-ZE290HRS



Safety Eyes See p. 3-4

Radio Controller with Color LCD* Display

*Liquid Crystal Display

A radio controller for remotely operating the crane is provided as standard. In addition to displaying the actual load, rated load, and moment load ratio, it also features a large-screen and power-saving color LCD display, has a feature that can customize speed adjustment for various operations, and has an emergency stop function. The "load weight" function makes it possible to check the work progress and the load weight on the vehicle, and also prevents overloading. These features contribute not only to the safety of crane work, but also to the safety of the vehicle when it is traveling.

**The IP rating indicates waterproofness and dust protection as defined in IEC 60529. An IP66K rating indicates an exceptional level of waterproofness and dust protection ensuring peace of mind.



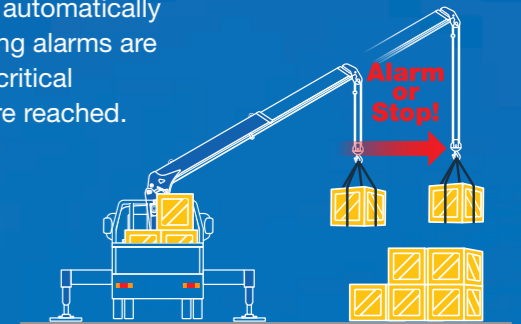
**WATER-
PROOFNESS
[IP66K**]**

Emergency stop

AML (Automatic Moment Limiter)

An AML that monitors crane work safety is equipped as standard. It includes a strength monitoring function which prevents crane overloading, and a stability monitoring function which prevents the crane from falling over.

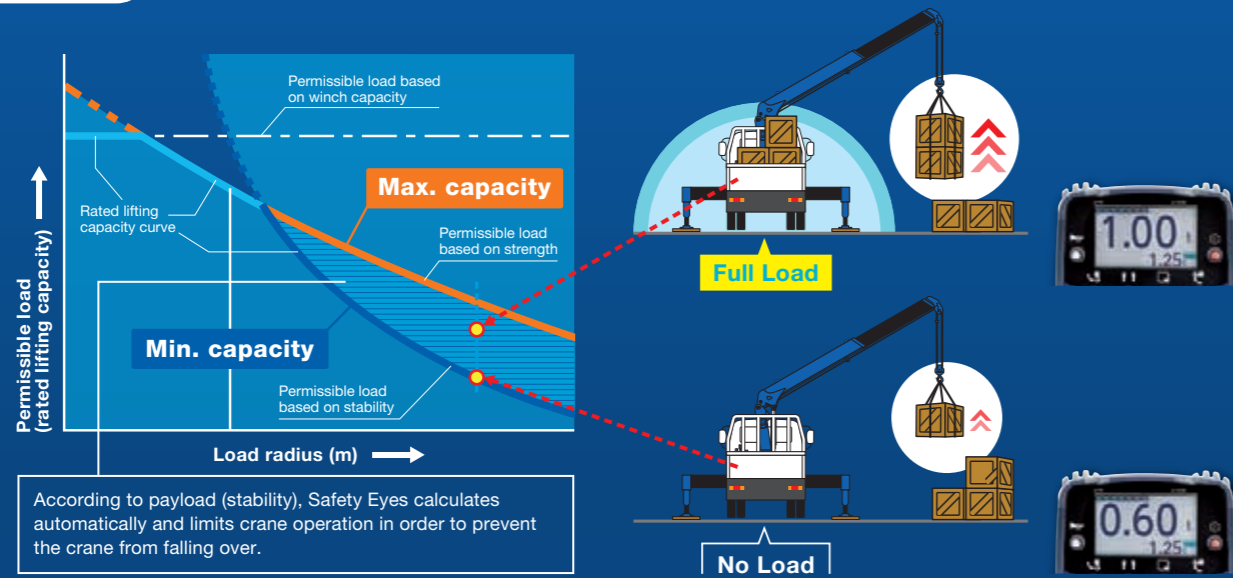
Manually entering the number of parts of line in use allows for fine-tuned controls. As the crane approaches rated performance, warning alarms and lamps are triggered. As an extra level of safety, operation is automatically stopped or warning alarms are triggered once critical parameters are reached.



Safety Eyes

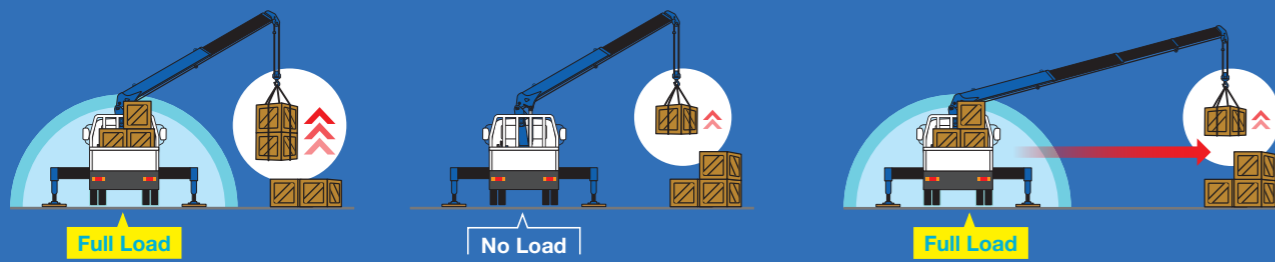


The Safety Eyes system consist of an Automatic Moment Limiter, a boom jack interlock system, a working height limiter, and other functions for monitoring operation. This system makes safe work possible.



Carry Heavier Loads When Close

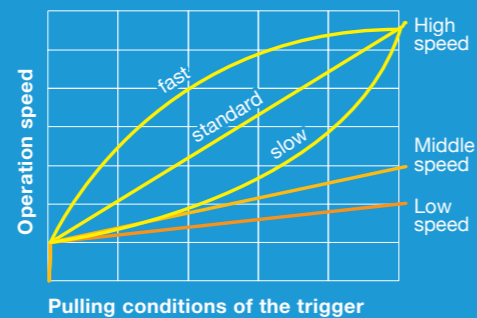
Carry Loads Farther When Light



Calculations are automatic and are based on loaded cargo (stability), allowing you to carry heavier loads farther when fully loaded.

Feeling Operation

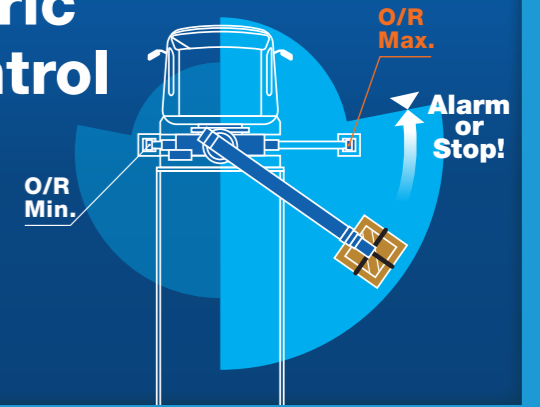
The operation speed of the machine when the trigger is pulled can be increased or decreased from the standard speed.



Outriggers Asymmetric Extension Width Control

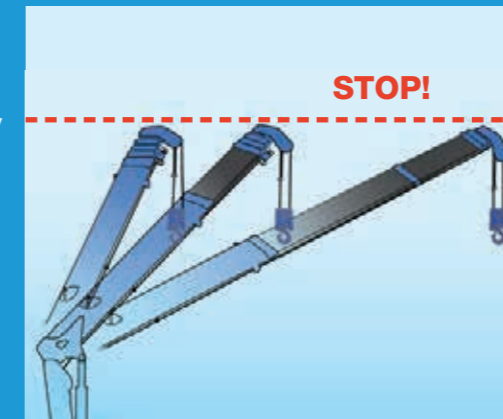
Optimum Lifting Performance at Any Outrigger Width

Constantly monitors the slewing angle and difference in outrigger extension widths. Crane motion is controlled according to the extension width of each outrigger.



Working Height Limit Function

This function presets the upper limit of the boom height (stop position). This is highly effective in work sites where attention is required to the boom height, such as under power lines and indoors.



Jack Interlock

Disables crane operation when the left or right jack is not in contact with the ground.



Centralized Control Panel Equipped with Safety Lamp

The lifting chart and switches for crane operation are grouped on both sides of the control panel, and warning lights are installed at the top of the panel.

Limit warning lamp

Outrigger extension state

Indicator lamp displays the outrigger extension width.

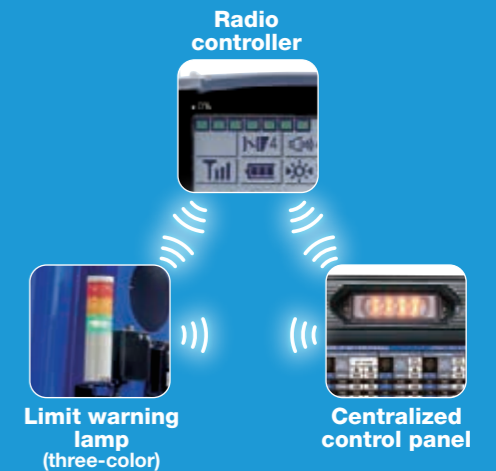
Mode indicator

Displays the actual load, height limit value, error code, etc.



Limit Warning Lamps

The warning lights on the control panel, moment indicator in the radio controller, three-color limit warning lamp on the crane post, and warning alarm function interlinked with one another.





Hook-in/out System

TADANO's hook-in system is equipped as standard and enhances work efficiency. During hook-out, the boom raises automatically to avoid hitting cargo.

Anti-two-block Function

This function stops crane operation (hoisting up, boom elevation, and boom extension) when the hook block touches the weight, and warns the operator with an alarm, to prevent the hook block from hitting the boom head.

Emergency Stop

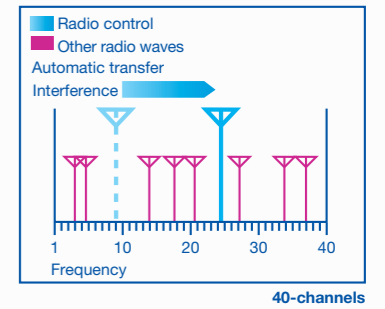
Use this switch to stop machine movement if the machine cannot be controlled during crane operation, or in an emergency. (Outrigger operation does not stop.)



On radio controller

High-powered Radio Controller

Radio Controller with powerful transmitting output automatically selects a frequency free of interference out of as many as 40 channels to avoid trouble caused by interference.



Automatic Slewing Lock System

This system prevents accidental boom slewing when no slewing operation takes place.

Cable Follower

The cable follower prevents disorderly cable (wire rope) winding by always pressing the cable onto the winch drum, and keeps the wire rope in the right position.

Powerful Heptagonal Boom

Tadano's unique heptagonal boom is made of high-tensile steel. The boom structure consists of a single piece of steel plate for lower boom weight and more powerful lifting capacity.

Special valves enable smooth boom extension and retraction for smoother operation to reduce shock when telescoping the boom. The cables and sheaves are all internal - for a clean, clutter-free appearance.



TM-ZE290HRS

Cargo Crane for Small Size Vehicles

Outrigger Mechanism for Quicker Work

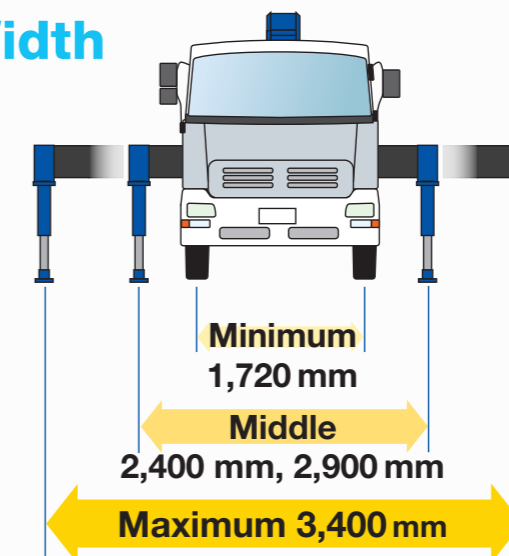
The outrigger sliders can be operated easy with grip to lock or release and extend or retract them. A lock system also prevents the outriggers from extending during driving.



Lock System

Broader Outrigger Width

The employment of parabox-type outriggers enables the outriggers to secure a four-stage extension width up to a maximum of 3.4 meters, substantially enhancing crane performance.



Spirit Level

Used to check that the machine is set level in lateral direction when the outriggers are set up.



Spirit Level

TM-ZE290HRS series

Technical Specifications

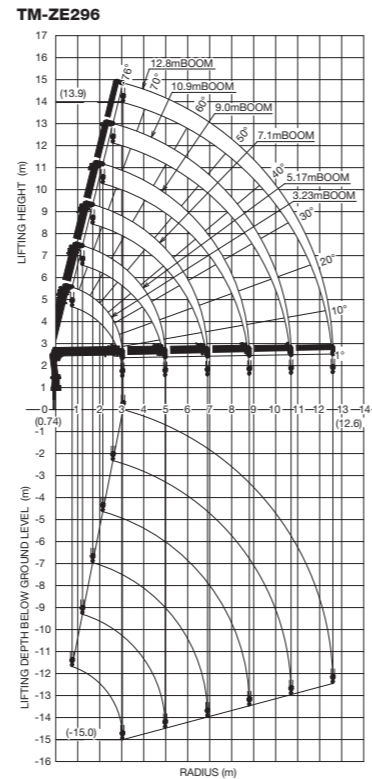
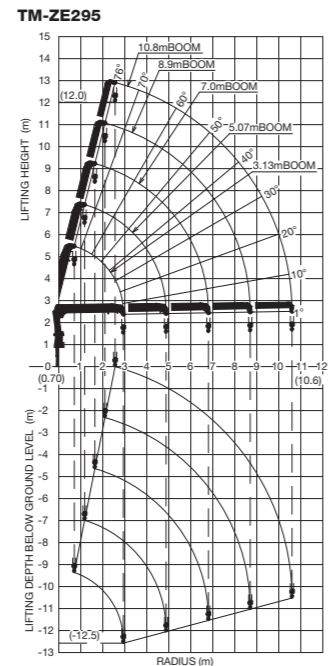
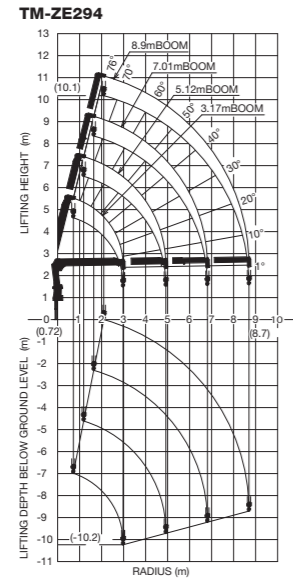
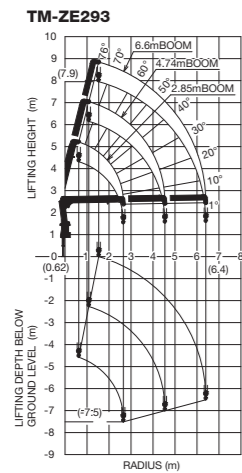
Model	TM-ZE293HRS	TM-ZE294HRS	TM-ZE295HRS	TM-ZE296HRS
CRANE CAPACITY	3,030 kg at 1.6 m (4-part lines)	3,030 kg at 1.6 m (4-part lines)	3,030 kg at 1.5 m (4-part lines)	3,030 kg at 1.5 m (4-part lines)
BOOM	Three-sectioned, fully hydraulic telescoping boom of heptagonal box construction	Four-sectioned, fully powered partly synchronized telescoping boom of heptagonal box construction	Five-sectioned, fully powered partly synchronized telescoping boom of heptagonal box construction	Six-sectioned, fully powered partly synchronized telescoping boom of heptagonal box construction
Retracted length	2.85 m	3.17 m	3.13 m	3.23 m
Extended length	6.6 m	8.9 m	10.8 m	12.8 m
Extending speed	3.75 m in 10.5 s	5.73 m in 13 s	7.67 m in 15.5 s	9.57 m in 17 s
Elevation	Elevated by a double-acting hydraulic cylinder			
Raising speed	1° to 76° in 6 s			
Boom point	2 sheaves			
WINCH	Hydraulic motor driven. Spur gear speed reduction, provided with mechanical brake and cable follower.			
Single line pull	7.45 kN (760 kgf)			
Single line speed	68 m/min (at 4th layer)			
Wire rope (Diameter x length)	8 mm x 45 m	8 mm x 56 m	8 mm x 66 m	8 mm x 75 m
Wire rope (Breaking strength)	43.1 kN (4.39 tf)			
Wire rope (Construction)	7 x 7 + 6 x WS (26)			
Hook block	2 sheaves			
HOOK STOWING DEVICE	Hook-in (Mechanically stowed beneath boom top portion)			
SLEWING	Hydraulic motor driven. Worm gear speed reduction. Continuous 360° full circle slewing on ball bearing slew ring. Automatic slewing lock			
Slewing speed	2.5 min ⁻¹ (rpm)			
OUTRIGGERS	Manually operated beams and hydraulically operated jacks. Integral with crane frame.			
Extension width	Min. 1,720 mm center to center(1,860 mm outer to outer), Mid. 2,400 mm center to center(2,540 mm outer to outer), Mid. 2,900 mm center to center(3,040 mm outer to outer), Max. 3,400 mm center to center(3,540 mm outer to outer)			
HYDRAULIC SYSTEM	Single gear pump			
Hydraulic pump	Axial piston type for winch. Axial piston type for slewing.			
Hydraulic motors	Multiple control valves with integral safety valve			
Control valves	Approx. 28.7 L			
Oil tank capacity	Model : RCS-F (with colored display). Control functions of telescoping, hoisting up and down, elevating, slewing, acceleration, Hook-in, Hook-out, horn, stop operation, outrigger operation and working height limit.			
RADIO CONTROLLER	40 frequencies in 433 MHz band			
Operating power supply	6V DC, Dry battery R6P (SUM-3) x 4			
Control unit	24V DC, Vehicle battery			
Transmitter mass	Approx. 670 g (includes batteries)			
SAFETY DEVICES	•Anti-two-block-device •AML (Automatic Moment Limiter) <Load indication, Load moment ratio indication, Warning alarm, Rated capacity indicator/limiter or Rated capacity indicator, Limit warning lamp, Outrigger length detector, Outrigger asymmetric extension width control> •WHL (Working Height Limiter) •Boom angle indicator •Load indicator •Load meter •Over-unwinding prevention •Hook safety latch •Spiral level •Jack interlock •Stop switch on radio controller •Hydraulic safety valves, check valves and holding valves •Limit warning lamp (three-color) •Emergency stop switch •Boom outrigger stowed warning			
OPTIONAL EQUIPMENT	•Emergency hydraulic pump •Outrigger pads •Tiltable jack float •Rear outriggers (outrigger beam extension type)**			
CRANE MASS	Approx. 870 kg (Except crane options and mounting parts.)	Approx. 970 kg (Except crane options and mounting parts.)	Approx. 1,110 kg (Except crane options and mounting parts.)	Approx. 1,130 kg (Except crane options and mounting parts.)

**TM-ZX296HRS only

Note: Each operating speeds show the value when there is no load conditions and the pump delivery is the following conditions.

- 32 L/min (Slewing speed)
- 53 L/min (•BOOM: Extending speed, Raising speed •WINCH: Single line speed)

Working Range



Note: The above lifting heights and boom angles are based on a straight (unladen) boom, and allowance should be made for boom deflection obtained under laden conditions.

Rated Lifting Capacities

Table A	Table C	Table D
TM-ZE293HRS • 2.85 m / 4.74 m Boom LOAD RADIUS (m) 1.6 ^{2nd} below 2.0 2.5 3.0 3.5 4.0 4.54 CRANE STRENGTH 3,030 2,330 1,880 1,500 1,250 1,080 980 EMPTY CHASSIS Extension with outriggers MAX. 3,030 2,330 1,730 1,230 930 730 630 MIN. 1,580 980 680 480 380 330 280	TM-ZE293HRS • 2.85 m / 4.74 m Boom LOAD RADIUS (m) 1.6 ^{2nd} below 2.0 2.5 3.0 3.5 4.0 4.54 CRANE STRENGTH 3,030 2,330 1,880 1,500 1,250 1,080 980 EMPTY CHASSIS Extension with outriggers MAX. 3,030 2,330 1,880 1,480 1,100 850 730 MIN. 1,580 980 680 480 380 330 280	TM-ZE293HRS • 2.85 m / 4.74 m Boom LOAD RADIUS (m) 1.6 ^{2nd} below 2.0 2.5 3.0 3.5 4.0 4.54 CRANE STRENGTH 3,030 2,330 1,880 1,500 1,250 1,080 980 EMPTY CHASSIS Extension with outriggers MAX. 3,030 2,330 1,880 1,500 1,250 1,080 980 MIN. 1,580 980 680 480 380 330 280
TM-ZE294HRS • 3.17 m / 5.12 m Boom LOAD RADIUS (m) 2.2 ^{2nd} below 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.4 CRANE STRENGTH 1,880 1,680 1,430 1,230 1,080 980 900 800 730 680 EMPTY CHASSIS Extension with outriggers MAX. 1,880 1,630 1,230 930 730 600 500 430 380 350 MIN. 1,580 980 680 480 380 280 250 230	TM-ZE294HRS • 3.17 m / 5.12 m Boom LOAD RADIUS (m) 2.2 ^{2nd} below 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.4 CRANE STRENGTH 1,880 1,680 1,430 1,230 1,080 980 900 800 730 680 EMPTY CHASSIS Extension with outriggers MAX. 1,880 1,680 1,400 1,100 850 700 600 530 480 430 MIN. 1,580 980 680 480 380 300 250 230	TM-ZE294HRS • 3.17 m / 5.12 m Boom LOAD RADIUS (m) 2.2 ^{2nd} below 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.4 CRANE STRENGTH 1,880 1,680 1,430 1,230 1,080 980 900 800 730 680 EMPTY CHASSIS Extension with outriggers MAX. 1,880 1,680 1,430 1,230 1,080 980 900 800 730 680 MIN. 1,580 980 680 480 380 300 250 230
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TM-ZE296HRS • 8.9 m Boom LOAD RADIUS (m) 3.0 ^{2nd} below 3.5 4.0 5.0 6.0 7.0 8.0 8.7 CRANE STRENGTH 1,080 1,080 980 780 650 550 480 430 EMPTY CHASSIS Extension with outriggers MAX. 1,080 930 730 500 350 280 230 200 MIN. 1,080 930 730 500 350 280 230 200	TM-ZE296HRS • 8.9 m Boom LOAD RADIUS (m) 3.0 ^{2nd} below 3.5 4.0 5.0 6.0 7.0 8.0 8.7 CRANE STRENGTH 1,080 1,080 980 780 650 550 480 430 EMPTY CHASSIS Extension with outriggers MAX. 1,080 1,080 880 600 450 350 280 250 MIN. 1,080 1,080 880 600 450 350 280 250	TM-ZE296HRS • 8.9 m Boom LOAD RADIUS (m) 3.0 ^{2nd} below 3.5 4.0 5.0 6.0 7.0 8.0 8.7 CRANE STRENGTH 1,080 1,080 980 780 650 550 480 430 EMPTY CHASSIS Extension with outriggers MAX. 1,080 1,080 980 780 650 550 480 430 MIN. 1,080 1,080 980 780 650 550 480 430
TM-ZE296HRS • 9.0 m Boom LOAD RADIUS (m) 4.0 ^{2nd} below 4.5 5.0 6.0 7.0 8.0 9.0 10.0 10.6 CRANE STRENGTH 680 630 580 480 400 350 300 250 230 EMPTY CHASSIS Extension with outriggers MAX. 680 600 530 400 300 230 200 180 150 MIN. 680 600 530 400 300 230 200 180 150	TM-ZE296HRS • 9.0 m Boom LOAD RADIUS (m) 4.0 ^{2nd} below 4.5 5.0 6.0 7.0 8.0 9.0 10.0 10.6 CRANE STRENGTH 680 630 580 480 400 350 300 250 230 EMPTY CHASSIS Extension with outriggers MAX. 680 630 580 480 400 350 300 250 230 MIN. 680 630 580 480 400 350 300 250 230	TM-ZE296HRS • 9.0 m Boom LOAD RADIUS (m) 4.0 ^{2nd} below 4.5 5.0 6.0 7.0 8.0 9.0 10.0 10.6 CRANE STRENGTH 680 630 580 480 400 350 300 250 230 EMPTY CHASSIS Extension with outriggers MAX. 680 630 580 480 400 350 300 250 230 MIN. 680 630 580 480 400 350 300 250 230
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TM-ZE296HRS • 12.8 m Boom LOAD RADIUS (m) 5.3 ^{2nd} below 6.0 7.0 8.0 9.0 10.0 11.0 12.6 CRANE STRENGTH 280 250 220 200 180 160 140 120 EMPTY CHASSIS Extension with outriggers MAX. 280 250 220 200 180 160 140 120 MIN. 280 250 220 200 180 160 140 120	TM-ZE296HRS • 12.8 m Boom LOAD RADIUS (m) 5.3 ^{2nd} below 6.0 7.0 8.0 9.0 10.0 11.0 12.6 CRANE STRENGTH 280 250 220 200 180 160 140 120 EMPTY CHASSIS Extension with outriggers MAX. 280 250 220 200 180 160 140 120 MIN. 280 250 220 200 180 160 140 120	TM-ZE296HRS • 12.8 m Boom LOAD RADIUS (m) 5.3 ^{2nd} below 6.0 7.0 8.0 9.0 10.0 11.0 12.6 CRANE STRENGTH 280 250 220 200 180 160 140 120 EMPTY CHASSIS Extension with outriggers MAX. 280 250 220 200 180 160 140 120 MIN. 280 250 220 200 180 160 140 120

Notes:

- Rated capacity indicator issues warning with the limit warning lamp and the buzzer when the working state approaches limit or the strength limit.
- When the AML is equipped with the rated capacity limiter, an operation stops automatically if the rated lifting capacity is exceeded.
- When the crane is front mounted, set up the front and rear outriggers so that the front and rear wheels are slightly in contact with the ground. (If tire deformation is large, AML may activate earlier.)
- Empty Chassis Rated Capacities in these tables depend on condition that crane is set level on firm level ground.
- This value includes the mass of lifting devices such as hook block (30kg).
- When the front outriggers are extended to the middle width, read the capacities rated for the minimum extension width.
- This load radius shows actual load radius which includes boom deflection.
- Rated lifting capacity is in consideration of the loading on the truck bed, and is within the range from the empty chassis rated lifting capacity to the crane strength rated lifting capacity.
- If the boom length exceeds the table value even a little, the performance is limited to the performance of the next boom length.
- Empty chassis rated lifting capacity varies according to the working area.
 - Front mounting <over-side, over-rear area>: 100% <over-front area>: 25% (*1) or 60% (*1) or 100% (*1)
 - Rear mounting <over-front, over-rear area>: 100% <over-side area>: 30%
- *1: Depend on the types of chassis
- Empty Chassis Rated Capacities table C and D depend on the types of chassis. (The following table shows guidelines for bodywork vehicles that can achieve the rated lifting capacity table C for vehicles. Be sure to carry out a stability inspection to determine which performance to apply.)

A	4.5 t ≤ GVW < 8.0 t, 2,750 mm ≤ WB (*2)
C	4.5 t ≤ GVW < 8.0 t, 3,395 mm ≤ WB (*2), 1,995 ≤ Vehicle width
TM-ZX296HRS only	
C	4.5 t ≤ GVW < 8.0 t, 3,395 mm ≤ WB (*2), 1,995 ≤ Vehicle width (Must be set up the rear outrigger.)

*2: From the front axle to the farthest rear axle.

Extension mark

