

TADANO CARGO CRANE

MODEL : **TM-ZE296** series

MODEL	SPEC.	SPEC. No.
TM-ZE296HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-29Z-6-03017
TM-ZE296HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-29Z-6-03027
TM-ZE296HS	Hook-in Safety device (AML : Rated capacity indicator/limiter)	TM-29Z-6-03057

CRANE SPECIFICATIONS

CRANE CAPACITY

3,030 kg at 1.5 m (4-part lines)

BOOM

Six-sectioned, fully powered partly synchronized telescoping boom of heptagonal box construction

Fully retracted length ----- 3.23 m

Fully extended length ----- 12.8 m

Extending speed ----- 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 75 m

Breaking strength ----- 43.1 kN {4.39 tf}

Construction ----- 7 x 7 + 6 x WS (26)

Hook block ----- 2 sheaves

HOOK BLOCK 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)

REAR OUTRIGGERS (Locally provided)

Minimum extension width ----- 1,700 mm or more

HYDRAULIC SYSTEM

Hydraulic pump ----- Single gear pump

Hydraulic motors ----- Axial piston type for winch

Axial piston type for slewing

Control valves ----- Multiple control valves with integral
 safety valve

Oil tank capacity ----- Approx. 28.7 L

(*1) RADIO CONTROLLER

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.

Frequency ----- 40 frequencies in 433 MHz band

Operating power supply

Transmitter ----- 6 V DC, Dry battery R6P (SUM-3) x 4

Control unit ----- 24 V 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
 Limit warning lamp(three-color)
 WHL (Working Height Limiter)
 Boom angle indicator
 Load indicator
 Load meter
 Over-unwinding prevention
 Hook safety latch
 Spirit level
 Jack interlock
 Boom/outrigger stowing reminder alarm
 Emergency stop switch
 (*1) Stop switch on radio controller
 Hydraulic safety valves, check valves and holding valves

OPTIONAL EQUIPMENT

Emergency hydraulic pump
 Outrigger pads
 Tilttable jack float
 Rear outriggers (outrigger beam extension type)

CRANE MASS

Approx. 1,130 kg
 (Except crane options and mounting parts.)

- NOTE : 1. 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)
2. *1 mark applies only to HRS specifications.

RATED LIFTING CAPACITIES (kg)

Table C

LOAD RADIUS	3.23 m / 5.17 m BOOM			LOAD RADIUS	7.1 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS			CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers				extension width of outriggers
		MAX.	MIN.			MAX.
1.5 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880
2.0 m	2,180	2,180	1,130	2.5 m	1,680	1,680
2.5 m	1,730	1,730	730	3.0 m	1,430	1,430
3.0 m	1,430	1,430	530	3.5 m	1,180	1,150
3.5 m	1,230	1,230	380	4.0 m	1,030	930
4.0 m	1,050	1,030	280	4.5 m	880	780
4.5 m	900	830	230	5.0 m	780	680
4.97 m	800	680	180	5.5 m	680	580
				6.0 m	600	480
				6.9 m	500	380

LOAD RADIUS	9.0 m BOOM		LOAD RADIUS	10.9 m BOOM		LOAD RADIUS	12.8 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS		CRANE STRENGTH	EMPTY CHASSIS		CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers			extension width of outriggers			extension width of outriggers
		MAX.			MAX.			MAX.
3.0 m and below	900	900	4.0 m and below	680	530	5.3 m and below	280	280
3.5 m	900	900	4.5 m	630	450	6.0 m	250	250
4.0 m	830	800	5.0 m	580	400	7.0 m	220	220
5.0 m	680	600	6.0 m	480	330	8.0 m	200	190
6.0 m	580	480	7.0 m	400	280	9.0 m	180	160
7.0 m	500	380	8.0 m	350	250	10.0 m	160	140
8.0 m	430	280	9.0 m	300	200	11.0 m	140	130
8.8 m	350	230	10.0 m	250	180	12.6 m	120	120
			10.7 m	230	150			

Table D

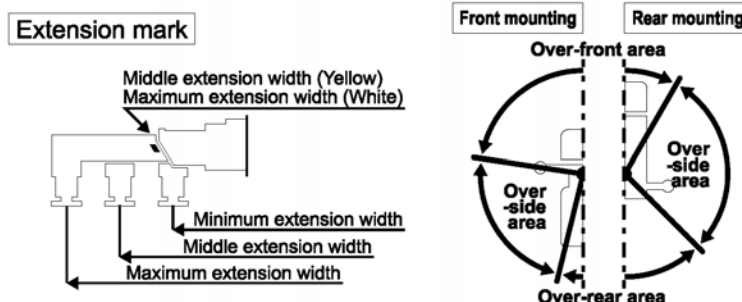
LOAD RADIUS	3.23 m / 5.17 m BOOM			LOAD RADIUS	7.1 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS			CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers				
		MAX.	MIN.			
1.5 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880
2.0 m	2,180	2,180	1,130	2.5 m	1,680	1,680
2.5 m	1,730	1,730	730	3.0 m	1,430	1,430
3.0 m	1,430	1,430	530	3.5 m	1,180	1,180
3.5 m	1,230	1,230	380	4.0 m	1,030	1,030
4.0 m	1,050	1,050	280	4.5 m	880	880
4.5 m	900	900	230	5.0 m	780	780
4.97 m	800	800	180	5.5 m	680	680
				6.0 m	600	600
				6.9 m	500	500

LOAD RADIUS	9.0 m BOOM		LOAD RADIUS	10.9 m BOOM		LOAD RADIUS	12.8 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS		CRANE STRENGTH	EMPTY CHASSIS		CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers			extension width of outriggers			extension width of outriggers
		MAX.			MAX.			MAX.
3.0 m and below	900	900	4.0 m and below	680	680	5.3 m and below	280	280
3.5 m	900	900	4.5 m	630	630	6.0 m	250	250
4.0 m	830	830	5.0 m	580	580	7.0 m	220	220
5.0 m	680	680	6.0 m	480	480	8.0 m	200	200
6.0 m	580	580	7.0 m	400	400	9.0 m	180	180
7.0 m	500	500	8.0 m	350	350	10.0 m	160	160
8.0 m	430	430	9.0 m	300	300	11.0 m	140	140
8.8 m	350	350	10.0 m	250	250	12.6 m	120	120
			10.7 m	230	230			

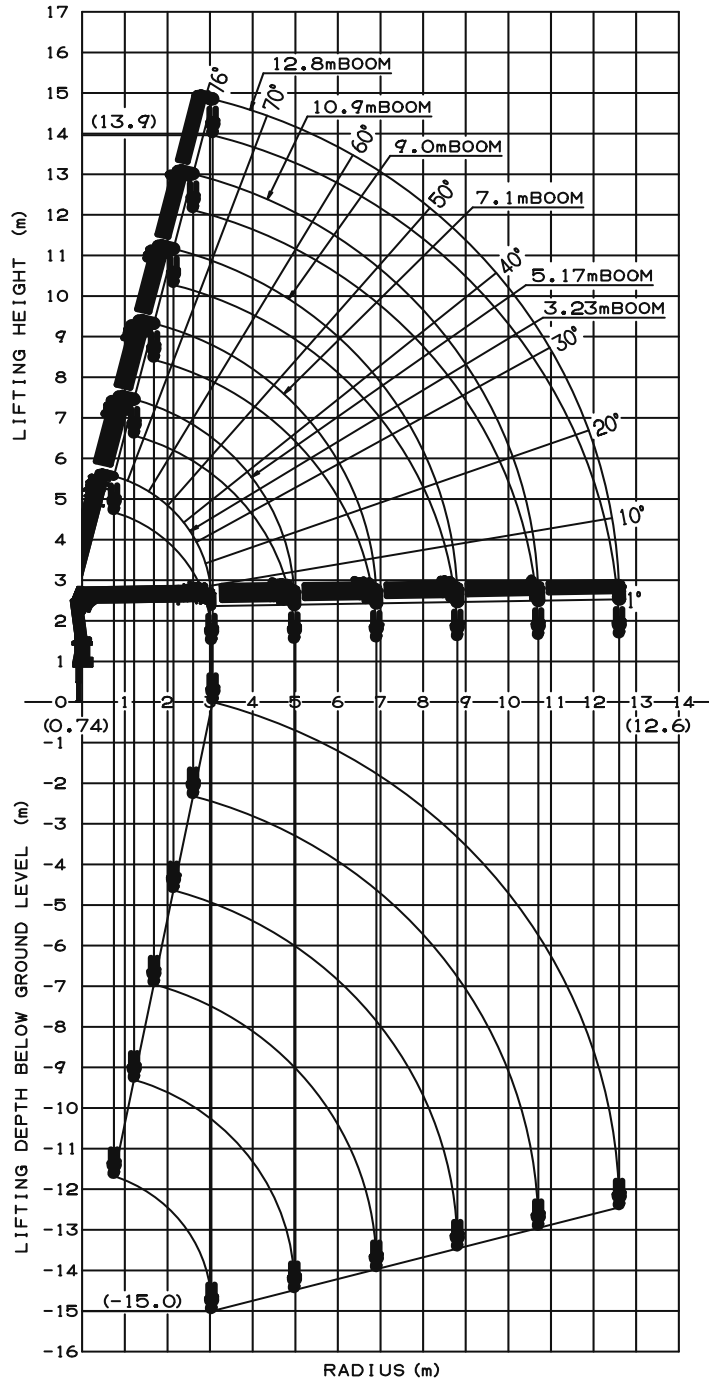
- NOTE :
1. Rated capacity indicator issues warning with the limit warning lamp and the buzzer when the working state approaches the stability limit or the strength limit.
 2. When the AML is equipped with the rated capacity limiter, an operation stops automatically if the rated lifting capacity is exceeded.
 3. 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.)
 4. Empty Chassis Rated Capacities in these tables depend on condition that crane is set level on firm level ground.
 5. This value includes the mass of lifting devices such as hook block (30kg).
 6. When the front outriggers are extended to the middle width, read the capacities rated for the minimum extension width.
 7. This load radius shows actual load radius which includes boom deflection.
 8. 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.
 9. If the boom length exceeds the table value even a little, the performance is limited to the performance of the next boom length.
 10. When the boom length is 9.0 m, a half of the first \sphericalangle mark on lateral face of the 4th boom section is exposed out of 3rd boom section.
 11. When the boom length is 10.9 m, a half of the second \sphericalangle mark on lateral face of the 4th boom section is exposed out of 3rd boom section.
 12. 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
 13. 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.)

C	4.5 t ≤ GVW < 8.0 t, 3395 mm ≤ WB (*2), 1995 ≤ Vehicle width (Must be set up the rear outrigger.)
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*2 : From the front axle to the farthest rear axle.

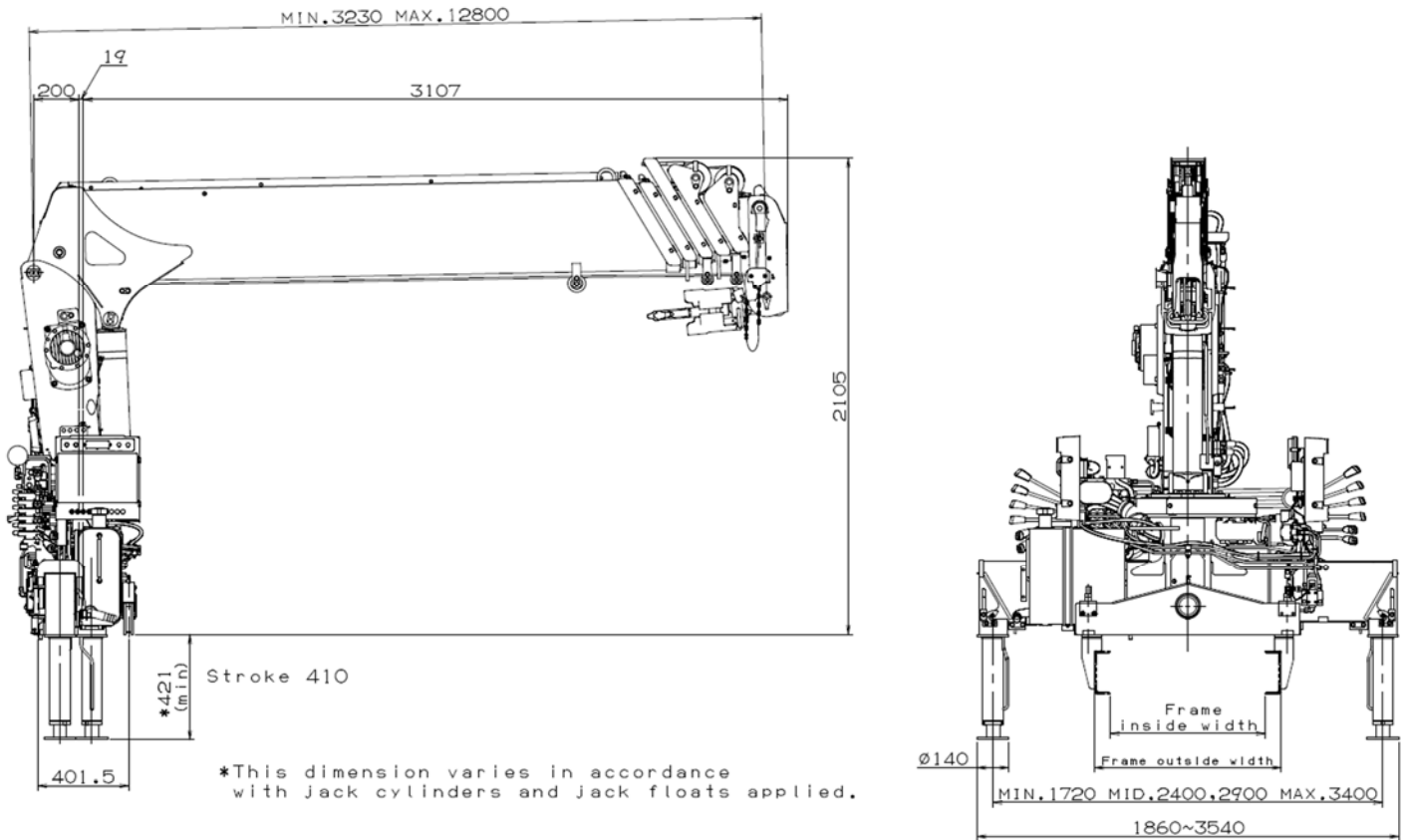


WORKING RANGE



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.

DIMENSIONS



GENERAL DATA FOR SUITABLE TRUCKS

Gross vehicle weight	4,500 to 8,000 kg
Wheel base (*1)	3,395 mm min.
P.T.O. torque	140 N·m {14.3 kgf·m} min.
P.T.O. revolution range of use (min. to max.)	Approx. 350 to 1,360 min ⁻¹ {rpm}
Width for crane mounting	Approx. 605 mm min.
Frame	Weight distribution and frame strength should be calculated for each truck
Frame width range (inside to outside)	Approx. 680 to 860 mm
Frame height (ground to chassis frame top) (*2)	Approx. 640 to 760 mm
Chassis frame section modulus (*3)	70 cm ³ min.

*1 From the front axle to the farthest rear axle.

*2 Height of crane mounting surface is changed by crane bases.

*3 The chassis frame material must meet the following conditions at the crane mounting location.
 —Yield point : 392 N/mm²
 —Tensile strength : 540 N/mm²