

TADANO CARGO CRANE

MODEL : **TM-ZE293** series

MODEL	SPEC.	SPEC. No.
TM-ZE293HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-29Z-6-03013
TM-ZE293HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-29Z-6-03023

Specifications are subject to change without notice.

CRANE SPECIFICATIONS

CRANE CAPACITY

3,030 kg at 1.6 m (4-part lines)

BOOM

Three-sectioned, fully hydraulic telescoping boom of heptagonal box construction

Fully retracted length ----- 2.85 m

Fully extended length ----- 6.6 m

Extending speed ----- 3.75 m in 10.5 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

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)

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

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 ----- 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
 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
 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. 870 kg
 (Except crane options and mounting parts.)

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)

RATED LIFTING CAPACITIES (kg)

Table A

LOAD RADIUS	2.85 m / 4.74 m BOOM			LOAD RADIUS	6.6 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS			CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers				extension width of outriggers
		MAX.	MIN.		MAX.	
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880
2.0 m	2,330	2,330	980	2.5 m	1,680	1,630
2.5 m	1,880	1,730	680	3.0 m	1,430	1,230
3.0 m	1,500	1,230	480	3.5 m	1,230	930
3.5 m	1,250	930	380	4.0 m	1,080	730
4.0 m	1,080	730	330	4.5 m	980	600
4.54 m	980	630	280	5.0 m	900	500
				5.5 m	800	430
				6.0 m	730	380
				6.4 m	680	350

Table C

LOAD RADIUS	2.85 m / 4.74 m BOOM			LOAD RADIUS	6.6 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS			CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers				extension width of outriggers
		MAX.	MIN.		MAX.	
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880
2.0 m	2,330	2,330	980	2.5 m	1,680	1,680
2.5 m	1,880	1,880	680	3.0 m	1,430	1,400
3.0 m	1,500	1,480	480	3.5 m	1,230	1,100
3.5 m	1,250	1,100	380	4.0 m	1,080	850
4.0 m	1,080	850	330	4.5 m	980	700
4.54 m	980	730	280	5.0 m	900	600
				5.5 m	800	530
				6.0 m	730	480
				6.4 m	680	430

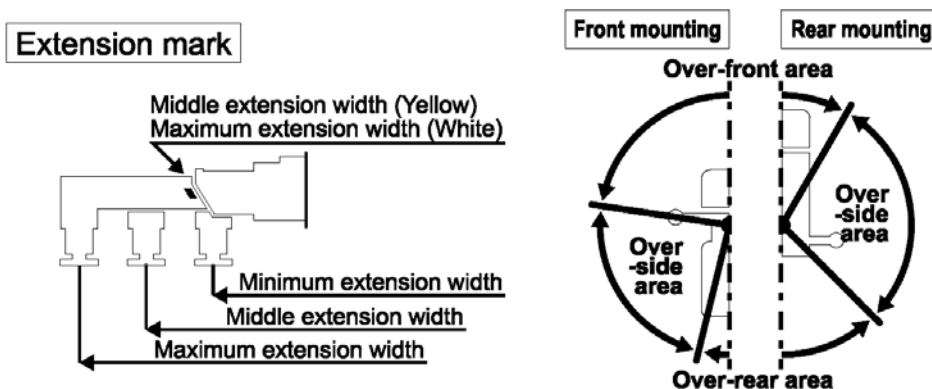
Table D

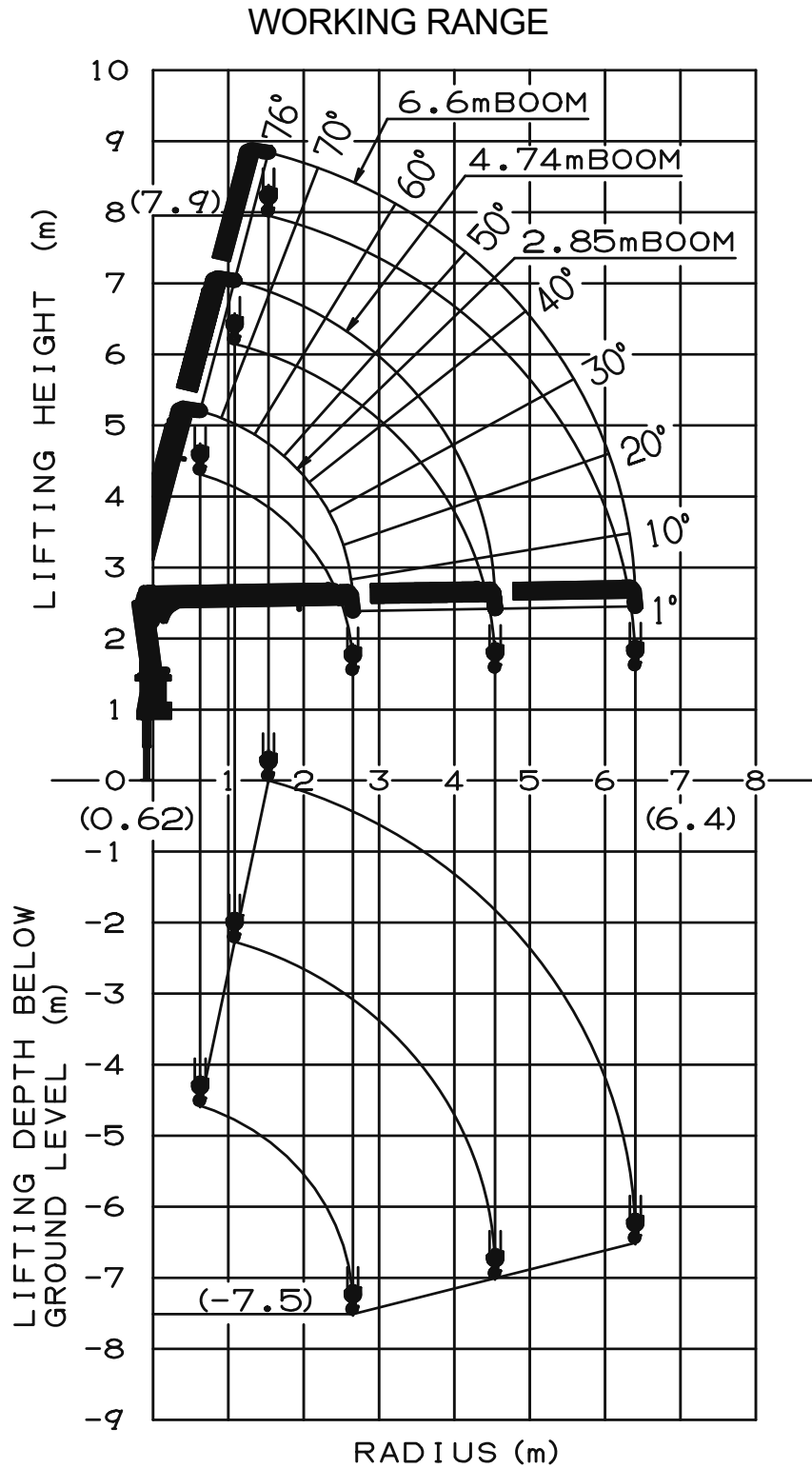
LOAD RADIUS	2.85 m / 4.74 m BOOM			LOAD RADIUS	6.6 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS			CRANE STRENGTH	EMPTY CHASSIS
		extension width of outriggers				extension width of outriggers
		MAX.	MIN.		MAX.	
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880
2.0 m	2,330	2,330	980	2.5 m	1,680	1,680
2.5 m	1,880	1,880	680	3.0 m	1,430	1,430
3.0 m	1,500	1,500	480	3.5 m	1,230	1,230
3.5 m	1,250	1,250	380	4.0 m	1,080	1,080
4.0 m	1,080	1,080	330	4.5 m	980	980
4.54 m	980	980	280	5.0 m	900	900
				5.5 m	800	800
				6.0 m	730	730
				6.4 m	680	680

- 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 outriggers so that the front 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 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. 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.
 11. Empty Chassis Rated Capacities table A,C and D depend on the types of chassis.
(The following table shows guidelines for bodywork vehicles that can achieve the rated lifting capacity tables A and 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, 2750 mm ≤ WB (*2)
C	4.5 t ≤ GVW < 8.0 t, 3395 mm ≤ WB (*2), 1995 mm ≤ Vehicle width

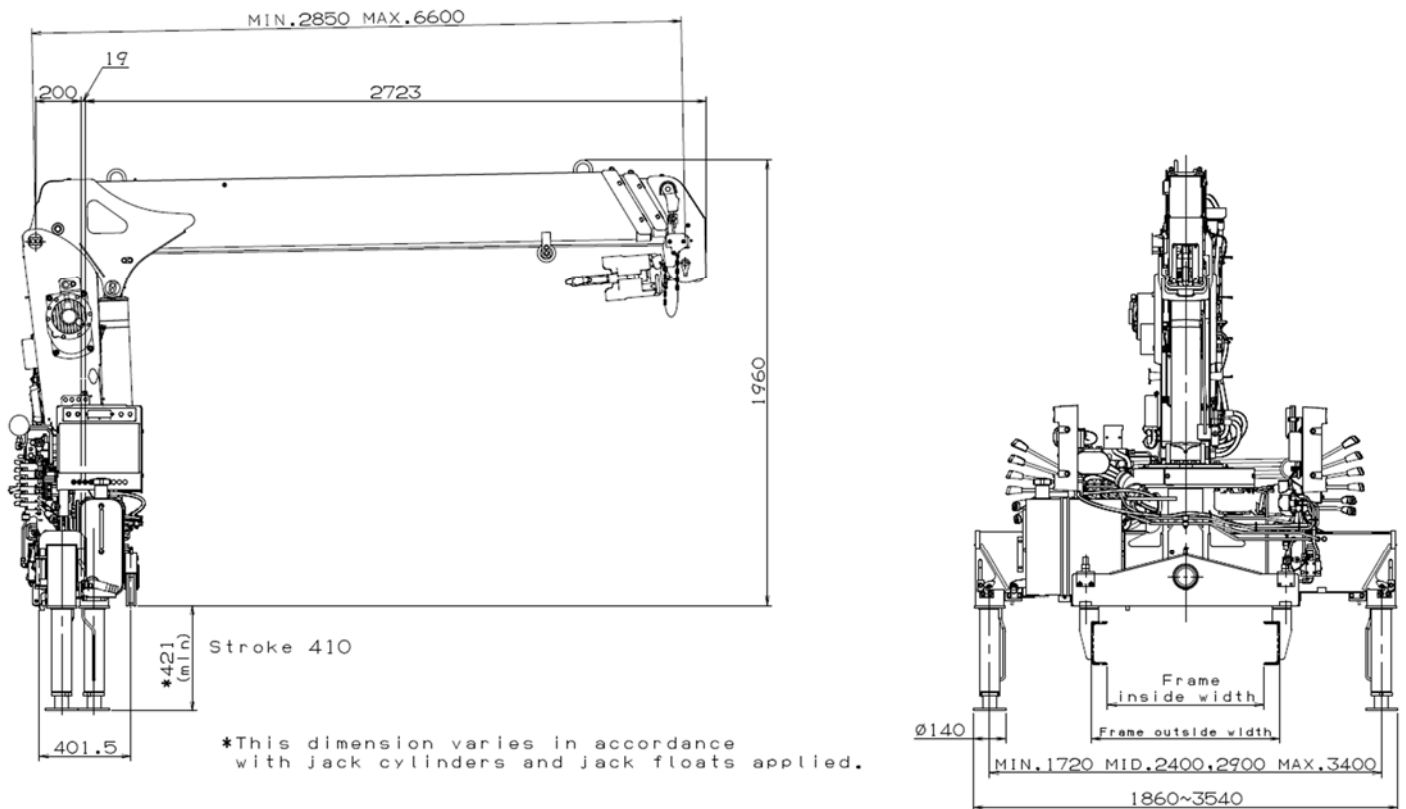
*2 : From the front axle to the farthest rear axle.





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)	2,750 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