TADANO

SPEC. SHEET No.TM-29Z-6-03014,03024,03054/EX-04
DATE February, 2023

TADANO CARGO CRANE

MODEL : **TM-ZE294** series

MODEL	SPEC.	SPEC. No.
TM-ZE294HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-29Z-6-03014
TM-ZE294HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-29Z-6-03024
TM-ZE294HS	Hook-in Safety device (AML : Rated capacity indicator/limiter)	TM-29Z-6-03054

Specifications are subject to change without notice.

CRANE SPECIFICATIONS

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

BOOM — Four-sectioned, fully powered partly synchronized telescoping boom of heptagonal box construction

- Fully retracted length ---------- 3.17 m
- Fully extended length ---------- 8.9 m
- Extending speed ---------- 5.73 m in 13 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 56 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

(*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 ---------- 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
	(*1) Stop switch on radio controller
	Hydraulic safety valves, check valves and holding valves
OPTIONAL EQUIPMENT	Emergency hydraulic pump
	Outrigger pads
	Tiltable jack float
	Rear outriggers (outrigger beam extension type)
CRANE MASS	Approx. 970 kg
	(Except crane options and munting 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 A

LOAD RADIUS	3.17 m / 5.12 m BOOM			LOAD RADIUS	7.01 m BOOM		LOAD RADIUS	8.9 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers			CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers		CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers
		MAX.	MIN.			MAX.			MAX.
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880	3.0 m and below	1,080	1,080
2.0 m	2,330	2,330	980	2.5 m	1,680	1,680	3.5 m	1,080	930
2.5 m	1,880	1,800	680	3.0 m	1,430	1,250	4.0 m	980	730
3.0 m	1,500	1,250	480	3.5 m	1,230	930	5.0 m	780	500
3.5 m	1,250	930	380	4.0 m	1,080	730	6.0 m	650	350
4.0 m	1,080	730	280	4.5 m	930	580	7.0 m	550	280
4.5 m	930	580	250	5.0 m	830	500	8.0 m	480	230
4.92 m	850	530	230	5.5 m	730	430	8.7 m	430	200
				6.0 m	650	350			
				6.81 m	580	300			

Table C

LOAD RADIUS	3.17 m / 5.12 m BOOM			LOAD RADIUS	7.01 m BOOM		LOAD RADIUS	8.9 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers			CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers		CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers
		MAX.	MIN.			MAX.			MAX.
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880	3.0 m and below	1,080	1,080
2.0 m	2,330	2,330	980	2.5 m	1,680	1,680	3.5 m	1,080	1,080
2.5 m	1,880	1,880	680	3.0 m	1,430	1,400	4.0 m	980	880
3.0 m	1,500	1,500	480	3.5 m	1,230	1,100	5.0 m	780	600
3.5 m	1,250	1,100	380	4.0 m	1,080	880	6.0 m	650	450
4.0 m	1,080	880	300	4.5 m	930	700	7.0 m	550	350
4.5 m	930	700	250	5.0 m	830	600	8.0 m	480	280
4.92 m	850	600	230	5.5 m	730	530	8.7 m	430	250
				6.0 m	650	450			
				6.81 m	580	350			

Table D

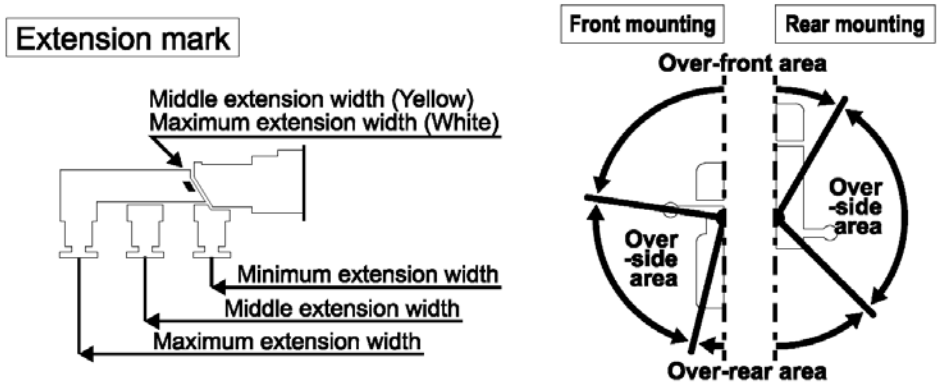
LOAD RADIUS	3.17 m / 5.12 m BOOM			LOAD RADIUS	7.01 m BOOM		LOAD RADIUS	8.9 m BOOM	
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers			CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers		CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers
		MAX.	MIN.			MAX.			MAX.
1.6 m and below	3,030	3,030	1,580	2.2 m and below	1,880	1,880	3.0 m and below	1,080	1,080
2.0 m	2,330	2,330	980	2.5 m	1,680	1,680	3.5 m	1,080	1,080
2.5 m	1,880	1,880	680	3.0 m	1,430	1,430	4.0 m	980	980
3.0 m	1,500	1,500	480	3.5 m	1,230	1,230	5.0 m	780	780
3.5 m	1,250	1,250	380	4.0 m	1,080	1,080	6.0 m	650	650
4.0 m	1,080	1,080	300	4.5 m	930	930	7.0 m	550	550
4.5 m	930	930	250	5.0 m	830	830	8.0 m	480	480
4.92 m	850	850	230	5.5 m	730	730	8.7 m	430	430
				6.0 m	650	650			
				6.81 m	580	580			

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. When the boom length is 7.01 m, a half of the ▱ mark on lateral face of the 3rd boom section is exposed out of 2nd boom section.
11. 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%

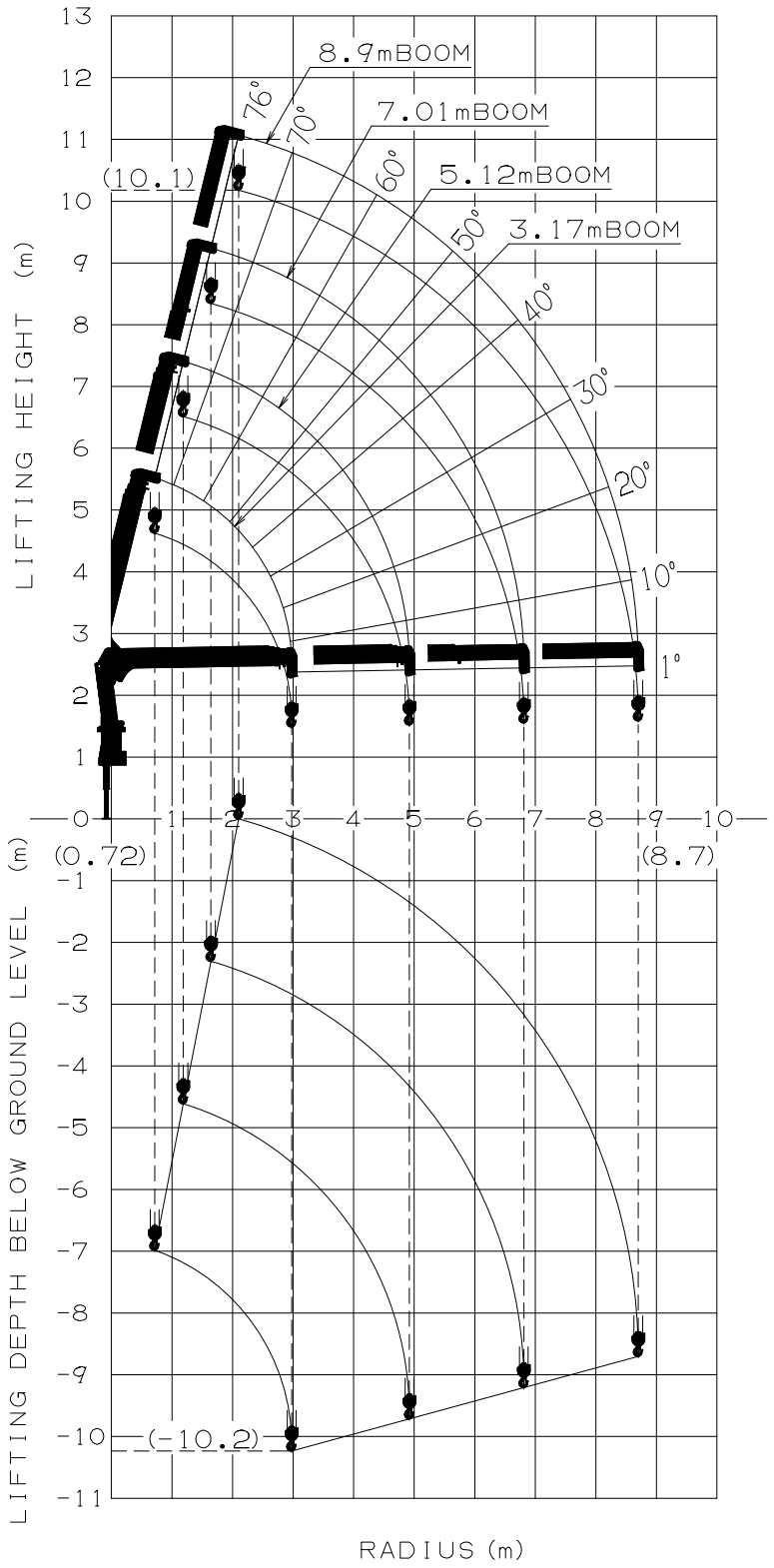
    *1 : Depend on the types of chassis.
12. Empty Chassis Rated Capacities table A,C and D depend on the types of chassis.
    (The following table shows guidelines for bodywork vehicles that can achieve the rated lifting capacity tables A and C for vehicles. Be sure to carry out a stability inspection 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.

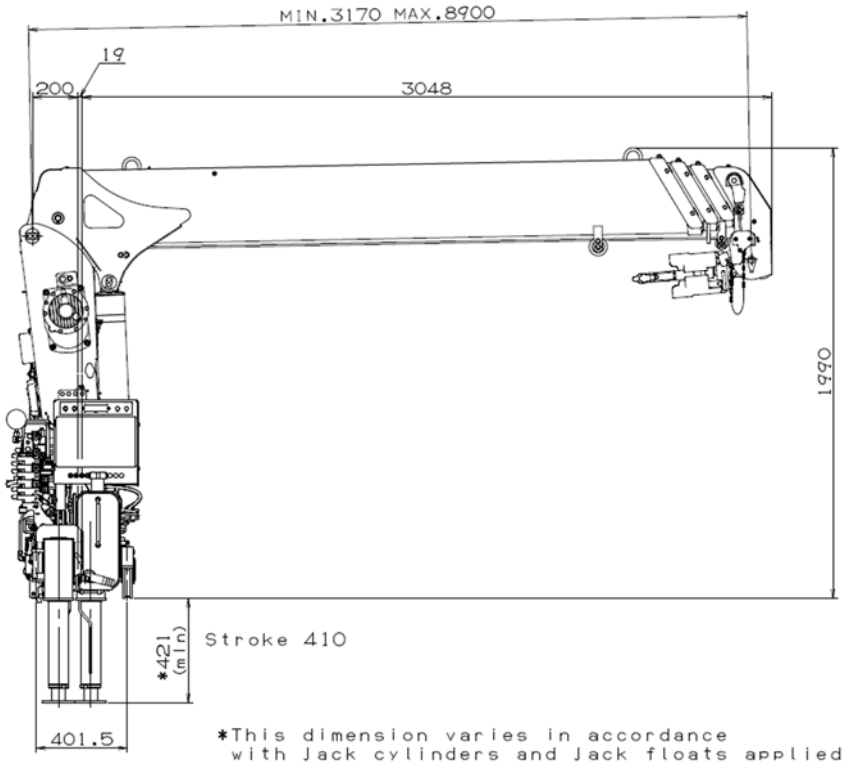


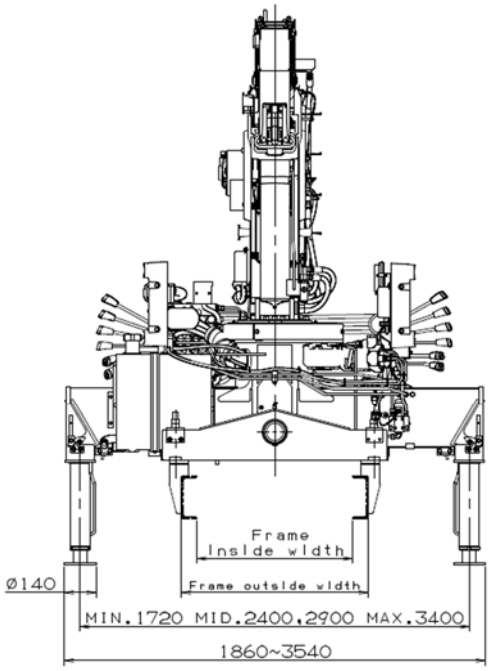
WORKING RANGE



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)	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/mm^2

－Tensile strength：540 N/mm^2