

## TADANO CARGO CRANE

MODEL : **TM-ZE553** series

MODEL	SPEC.	SPEC. No.
TM-ZE553HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-55Z-2-03813
TM-ZE553HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-55Z-2-03823

## CRANE SPECIFICATIONS

<u>CRANE CAPACITY</u>	5,050 kg at 2.5 m (5-part line)
<u>BOOM</u>	<p>Three-sectioned, fully hydraulic telescoping boom of heptagonal box construction</p> <p>Fully retracted length ----- 3.47 m</p> <p>Fully extended length ----- 8.31 m</p> <p>Extending speed ----- 4.84 m in 18 s</p> <p>Elevation ----- Elevated by a double-acting hydraulic cylinder</p> <p>Raising speed ----- 1° to 78° in 12 s</p> <p>Boom point ----- 3 sheaves</p>
<u>WINCH</u>	<p>Hydraulic motor driven    Spur gear speed reduction, provided with mechanical brake and cable follower</p> <p>Single line pull ----- 9.90 kN{1010 kgf}</p> <p>Single line speed ----- 66 m/min (at 4th layer)</p> <p>Wire rope</p> <p>    Diameter x length ----- 8 mm x 67 m</p> <p>    Breaking strength ----- 50.1 kN{5.1 tf}</p> <p>    Construction ----- 7 x 7 + 6 x WS(26)</p> <p>Hook block ----- 2 sheaves</p>
<u>HOOK BLOCK STOWING DEVICE</u>	Hook-in (Mechanically stowed beneath boom top portion)
<u>SLEWING</u>	<p>Hydraulic motor driven    Worm gear speed reduction</p> <p>Continuous 360° full circle slewing on ball bearing slew ring</p> <p>Automatic slewing lock</p> <p>Slewing speed ----- 2.5 min<sup>-1</sup>{rpm}</p>

OUTRIGGERS

Manually operated beams and hydraulically operated jacks

Integral with crane frame

Extended width ----- Min. 2,200 mm center to center  
 (2,360 mm outer to outer)  
 Mid. 3,000 mm center to center  
 (3,160 mm outer to outer)  
 Max. 3,800 mm center to center  
 (3,960 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. 57.6L

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  
 Oil cooler  
 Tilttable jack float  
 Rear outriggers (outrigger beam non-extension type)

CRANE MASS

Approx. 1,520 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.

- 36 L/min (Slewing speed)
- 60 L/min (BOOM : Extending speed, Raising speed   WINCH : Single line speed)

### RATED LIFTING CAPACITIES (kg)

Table A

LOAD RADIUS	3.47 m BOOM			LOAD RADIUS	5.91 m BOOM			LOAD RADIUS	8.31 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.	MIN.			MAX.	MIN.			MAX.	MIN.
2.5 m and below	5,050	5,050	2,480	2.6 m and below	4,050	4,050	2,380	2.6 m and below	3,130	3,130	2,380
2.95 m	4,050	3,850	2,000	2.8 m	4,050	4,050	2,130	3.0 m	3,130	3,130	1,950
3.25 m	3,700	3,280	1,780	2.95 m	4,050	3,850	2,000	3.4 m	3,130	3,130	1,530
				3.8 m	3,130	2,680	1,330	3.8 m	3,130	2,680	1,330
				4.1 m	2,930	2,430	1,180	4.1 m	2,930	2,430	1,180
				4.5 m	2,630	2,030	980	4.5 m	2,630	2,030	980
				5.0 m	2,380	1,730	880	5.0 m	2,380	1,730	880
				5.5 m	2,180	1,430	730	5.5 m	2,180	1,430	730
				5.69 m	2,080	1,380	680	6.0 m	1,980	1,330	630
								6.5 m	1,830	1,180	580
								7.0 m	1,680	1,030	530
								7.5 m	1,530	930	480
								8.09 m	1,430	830	430

Table B

LOAD RADIUS	3.47 m BOOM			LOAD RADIUS	5.91 m BOOM			LOAD RADIUS	8.31 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.	MIN.			MAX.	MIN.			MAX.	MIN.
2.5 m and below	5,050	5,050	2,980	2.6 m and below	4,050	4,050	2,730	2.6 m and below	3,130	3,130	2,730
2.95 m	4,050	4,050	2,330	2.8 m	4,050	4,050	2,500	3.0 m	3,130	3,130	2,280
3.25 m	3,700	3,650	2,080	2.95 m	4,050	4,050	2,330	3.4 m	3,130	3,130	1,930
				3.8 m	3,130	3,130	1,580	3.8 m	3,130	3,130	1,580
				4.1 m	2,930	2,930	1,430	4.1 m	2,930	2,930	1,430
				4.5 m	2,630	2,480	1,230	4.5 m	2,630	2,480	1,230
				5.0 m	2,380	2,080	1,030	5.0 m	2,380	2,080	1,030
				5.5 m	2,180	1,780	930	5.5 m	2,180	1,780	930
				5.69 m	2,080	1,680	880	6.0 m	1,980	1,580	780
								6.5 m	1,830	1,430	730
								7.0 m	1,680	1,280	650
								7.5 m	1,530	1,130	580
								8.09 m	1,430	1,030	530

Table C

LOAD RADIUS	3.47 m BOOM			LOAD RADIUS	5.91 m BOOM			LOAD RADIUS	8.31 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.	MIN.			MAX.	MIN.		MAX.	MIN.	
2.5 m and below	5,050	5,050	3,230	2.6 m and below	4,050	4,050	3,130	2.6 m and below	3,130	3,130	3,130
2.95 m	4,050	4,050	2,730	2.8 m	4,050	4,050	2,900	3.0 m	3,130	3,130	2,680
3.25 m	3,700	3,700	2,430	2.95 m	4,050	4,050	2,730	3.4 m	3,130	3,130	2,230
				3.8 m	3,130	3,130	1,830	3.8 m	3,130	3,130	1,830
				4.1 m	2,930	2,930	1,630	4.1 m	2,930	2,930	1,630
				4.5 m	2,630	2,630	1,430	4.5 m	2,630	2,630	1,430
				5.0 m	2,380	2,380	1,180	5.0 m	2,380	2,380	1,180
				5.5 m	2,180	2,130	1,030	5.5 m	2,180	2,130	1,030
				5.69 m	2,080	2,030	980	6.0 m	1,980	1,880	930
								6.5 m	1,830	1,730	850
								7.0 m	1,680	1,530	780
								7.5 m	1,530	1,380	700
								8.09 m	1,430	1,230	600

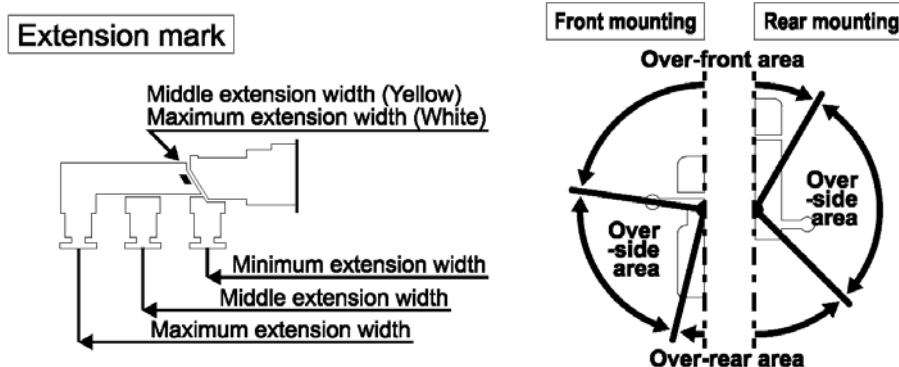
Table D

LOAD RADIUS	3.47 m BOOM			LOAD RADIUS	5.91 m BOOM			LOAD RADIUS	8.31 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.	MIN.			MAX.	MIN.		MAX.	MIN.	
2.5 m and below	5,050	5,050	3,430	2.6 m and below	4,050	4,050	3,230	2.6 m and below	3,130	3,130	3,130
2.95 m	4,050	4,050	2,730	2.8 m	4,050	4,050	2,900	3.0 m	3,130	3,130	2,680
3.25 m	3,700	3,700	2,430	2.95 m	4,050	4,050	2,730	3.4 m	3,130	3,130	2,230
				3.8 m	3,130	3,130	1,830	3.8 m	3,130	3,130	1,830
				4.1 m	2,930	2,930	1,630	4.1 m	2,930	2,930	1,630
				4.5 m	2,630	2,630	1,430	4.5 m	2,630	2,630	1,430
				5.0 m	2,380	2,380	1,180	5.0 m	2,380	2,380	1,180
				5.5 m	2,180	2,180	1,030	5.5 m	2,180	2,180	1,030
				5.69 m	2,080	2,080	980	6.0 m	1,980	1,980	930
								6.5 m	1,830	1,830	850
								7.0 m	1,680	1,680	780
								7.5 m	1,530	1,530	700
								8.09 m	1,430	1,430	600

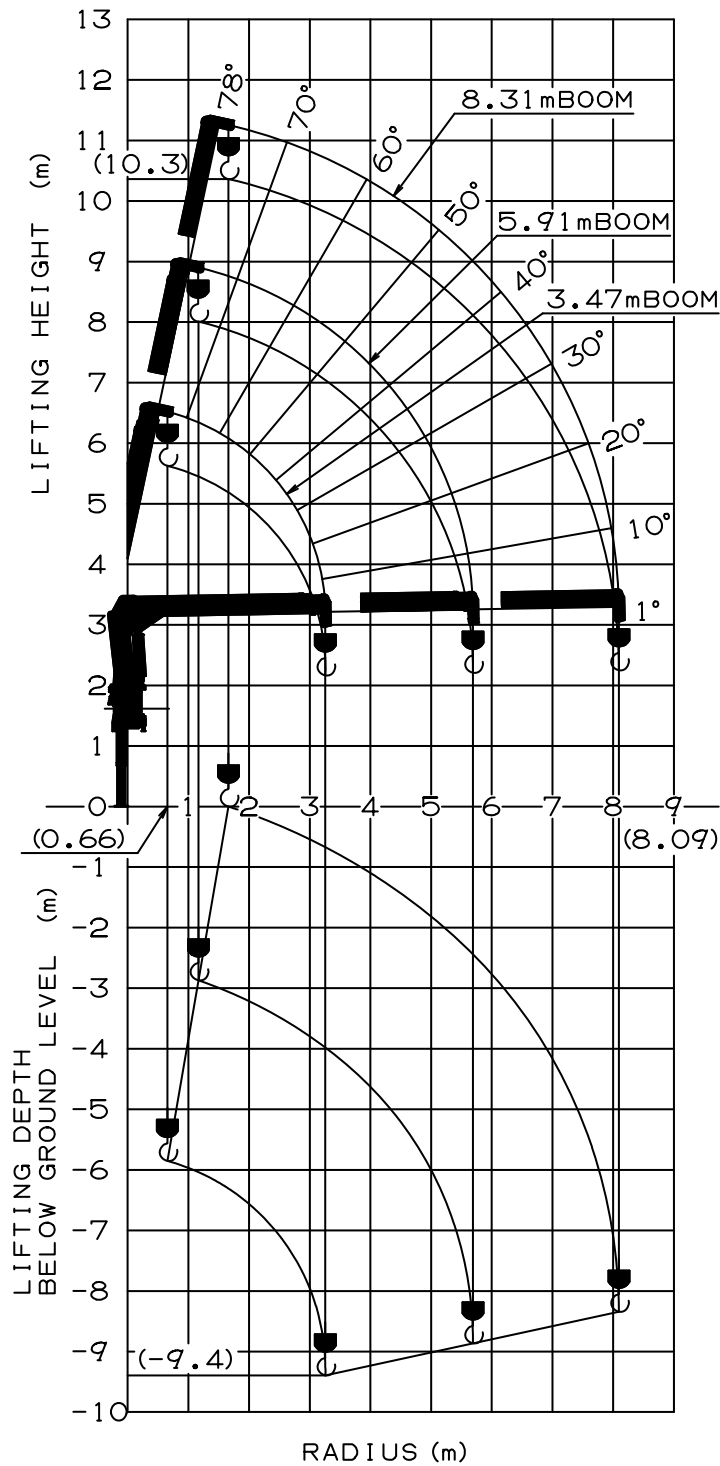
- NOTE :
1. Rated capacity indicator issues warning with the limit warning lamp and the buzzer when the working state approaches the stability limit or the strength limit.
  2. When the AML is equipped with the rated capacity limiter, an operation stops automatically if the rated lifting capacity is 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 (45kg).
  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, B, 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, B, C and D for vehicles. Be sure to carry out a stability inspection to determine which performance to apply.)

A	15 t ≤ GVW, 2.9 t ≤ CAWf (*2)
B	25 t ≤ GVW, 3.8 t ≤ CAWf (*2)
C	25 t ≤ GVW, 4.4 t ≤ CAWf (*2)
D	25 t ≤ GVW, 4.7 t ≤ CAWf (*2)

\*2 : Chassis front axle weight (excluding crane and mounting parts mass).



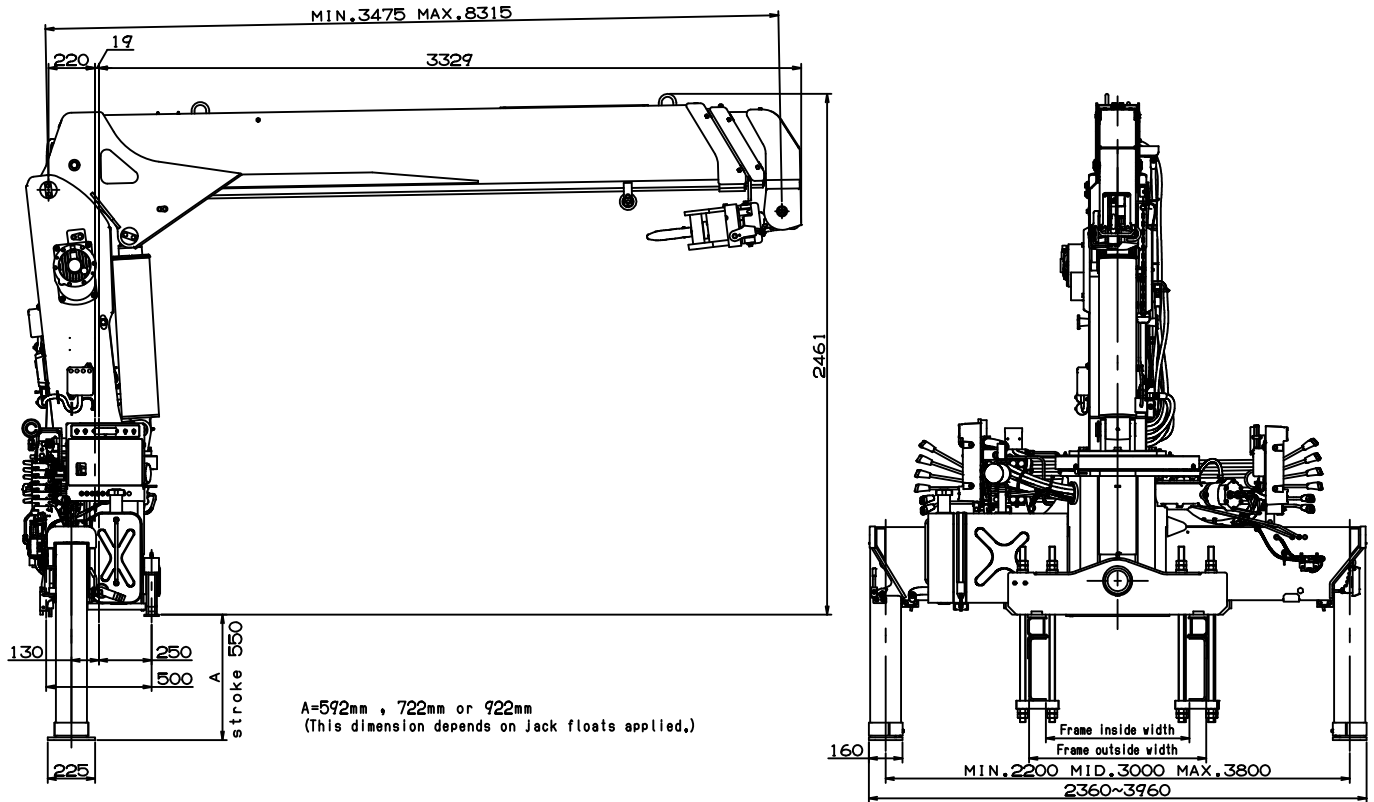
### WORKING RANGE



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  
[TM-ZE553HRS]



GENERAL DATA FOR SUITABLE TRUCKS

Gross vehicle weight	15,000 kg min.
Chassis front axle weight (excluding crane and mounting parts mass)	2,900 kg min.
P.T.O. torque	190 N·m {19.4 kgf·m} min.
P.T.O. revolution range of use (min. to max.)	Approx. 350 to 1,300 min <sup>-1</sup> {rpm}
Width for crane mounting	Approx. 750 mm min.
Frame	Weight distribution and frame strength should be calculated for each truck
Frame width range (inside to outside)	Approx. 610 to 960 mm
Frame height (ground to chassis frame top) (*1)	Approx. 880 to 1,145 mm
Chassis frame section modulus (*2)	485 cm <sup>3</sup> min.

\*1 Height of crane mounting surface is changed by crane bases.

\*2 The chassis frame material must meet the following conditions at the crane mounting location.  
 — Yield point : 392 N/mm<sup>2</sup>  
 — Tensile strength : 540 N/mm<sup>2</sup>