

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

CRANE CAPACITY

5,050 kg at 2.5 m (5-part line)

BOOM

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

Fully retracted length ----- 3.47 m

Fully extended length ----- 8.31 m

Extending speed ----- 4.84 m in 18 s

Elevation ----- Elevated by a double-acting
hydraulic cylinder

Raising speed ----- 1° to 78° in 12 s

Boom point ----- 3 sheaves

WINCH

Hydraulic motor driven Spur gear speed reduction, provided
with mechanical brake and cable follower

Single line pull ----- 9.90 kN{1010 kgf}

Single line speed ----- 66 m/min (at 4th layer)

Wire rope

Diameter x length ----- 8 mm x 67 m

Breaking strength ----- 50.1 kN{5.1 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

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
 WHL (Working Height Limiter)
 Boom angle indicator
 Load indicator
 Load meter
 Over-unwinding prevention
 Hook safety latch
 Spirit level
 Jack interlock
 Stop switch on radio controller
 Terminal for emergency stop switch
 Hydraulic safety valves, check valves and holding valves

OPTIONAL EQUIPMENT

Emergency hydraulic pump
 Outrigger pads
 Oil cooler
 Tiltable jack float
 Rear outriggers (outrigger beam non-extension type)
 Limit warning lamp (three-color)
 Emergency stop switch
 Boom outrigger stowed warning

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

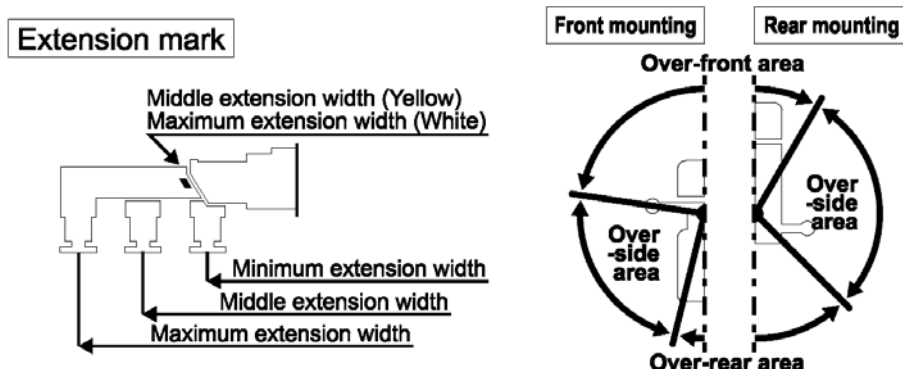
Table D

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

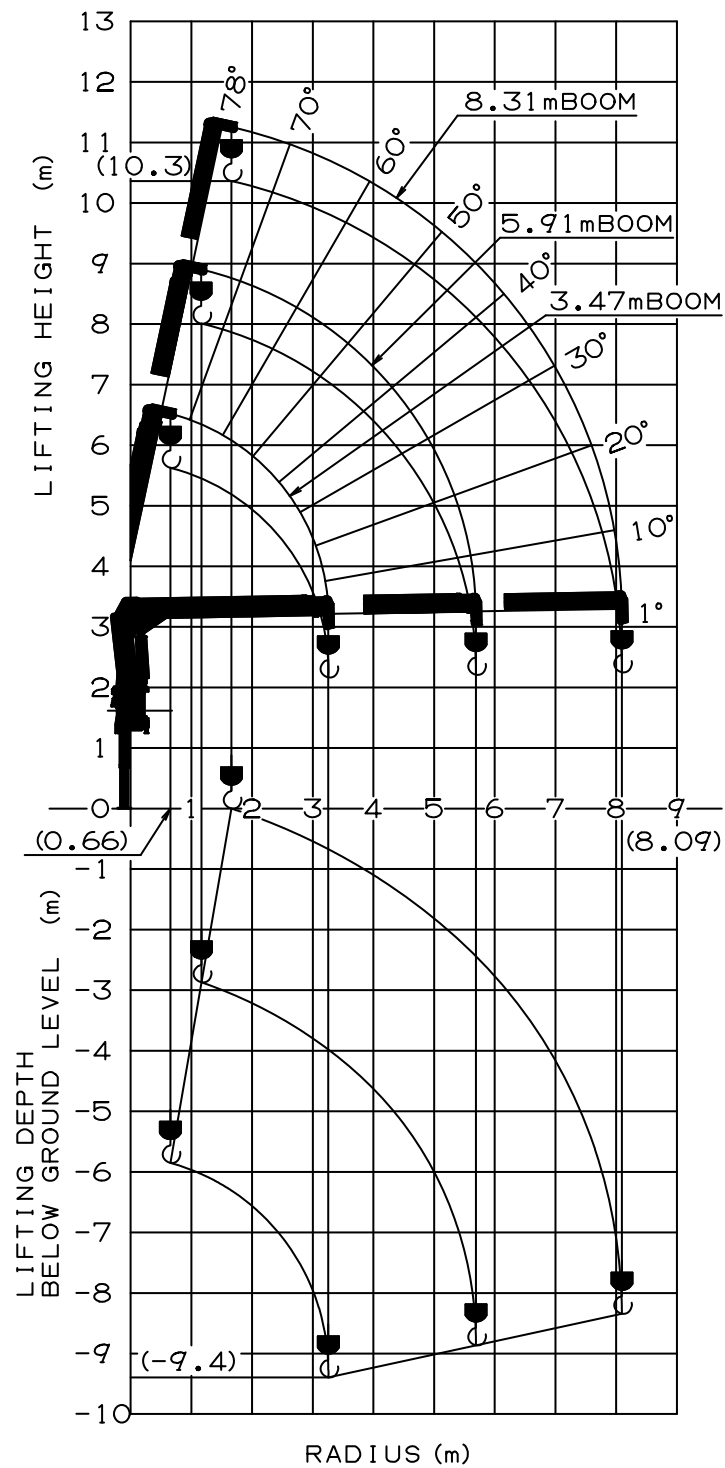
- NOTE :
1. Rated capacity indicator issues warning with the limit warning lamp and the buzzer when the working state approaches limit or the strength limit.
 2. When the AML is equipped with the rated capacity limiter, an operation stops automatically if the rated lifting capacity is exceeded.
 3. When 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).

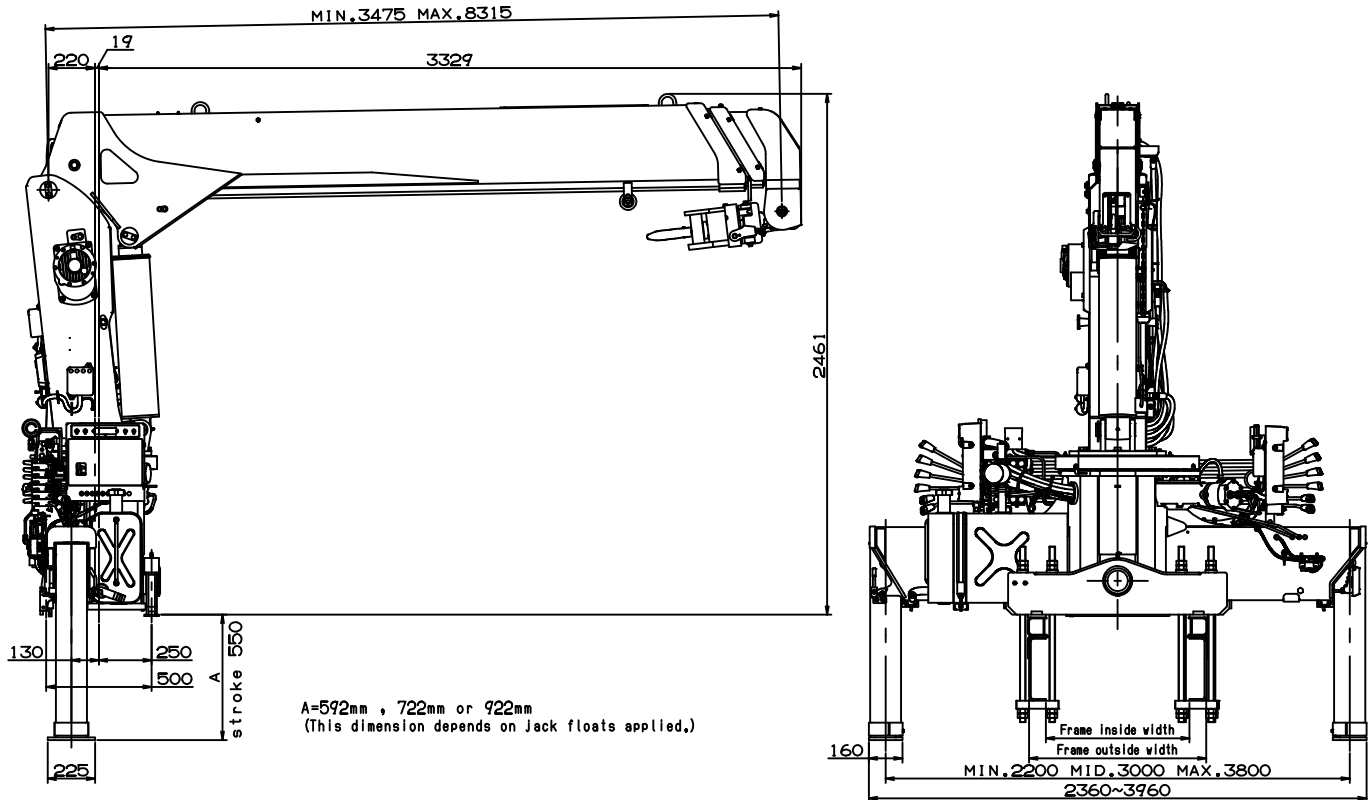


WORKING RANGE



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 ⁻¹ {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 ³ 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/mm²

— Tensile strength : 540 N/mm²