TADANO

SPEC. SHEET No.TM-55Z-2-03814,03824/EX-03
DATE January, 2023

TADANO CARGO CRANE

MODEL : **TM-ZE554** series

MODEL	SPEC.	SPEC. No.
TM-ZE554HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-55Z-2-03814
TM-ZE554HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-55Z-2-03824

Specifications are subject to change without notice.

CRANE SPECIFICATIONS

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

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

- Fully retracted length ---------- 3.55 m
- Fully extended length ----------10.8 m
- Extending speed ---------- 7.25 m in 21 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 {1,010 kgf}
- Single line speed ---------- 66 m/min (at 4th layer)
- Wire rope
  - Diameter x length ---------- 8 mm x 82 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. 57.6 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
	Oil cooler
	Tiltable jack float
	Rear outriggers (outrigger beam non-extension type)
CRANE MASS	Approx. 1,640 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	3.55 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.5 m and below	5,050	5,050	2,630
2.9 m	4,050	3,900	2,080
3.33 m	3,550	3,250	1,680

LOAD RADIUS	5.99 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.5 m and below	4,050	4,050	2,480
2.8 m	4,050	4,050	2,130
2.9 m	4,050	3,900	2,080
3.7 m	3,130	2,800	1,380
4.0 m	2.930	2,430	1,180
4.5 m	2.580	1,980	930
5.0 m	2.330	1,680	830
5.77 m	2.030	1,330	650

LOAD RADIUS	8.39 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	3,130	3,130	2,480
3.0 m	3,130	3,130	1,880
3.7 m	3,130	2,800	1,380
4.0 m	2,930	2,430	1,180
4.5 m	2,580	1,980	930
5.0 m	2,330	1,680	830
5.5 m	2,080	1,430	680
6.0 m	1,930	1,180	580
6.5 m	1,780	1,130	550
7.0 m	1,630	1,000	480
7.5 m	1,480	900	430
8.17 m	1,380	780	380

LOAD RADIUS	10.8 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
3.5 m and below	2,130	2,130	1,480
4.0 m	2,130	2,130	1,180
4.5 m	2,130	1,980	930
5.0 m	2,030	1,630	780
6.0 m	1,780	1,180	580
7.0 m	1,530	1,000	450
8.0 m	1,380	800	380
9.0 m	1,200	680	330
10.0 m	1,050	580	270
10.58 m	1,000	550	240

Table B

LOAD RADIUS	3.55 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.5 m and below	5,050	5,050	2,880
2.9 m	4,050	4,050	2,380
3.33 m	3,550	3,550	1,950

LOAD RADIUS	5.99 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	4,050	4,050	2,750
2.8 m	4,050	4,050	2,500
2.9 m	4,050	4,050	2,380
3.7 m	3,130	3,130	1,580
4.0 m	2.930	2,930	1,430
4.5 m	2.580	2,430	1,180
5.0 m	2.330	2,030	980
5.77 m	2.030	1,630	780

LOAD RADIUS	8.39 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	3,130	3,130	2,750
3.0 m	3,130	3,130	2,280
3.7 m	3,130	3,130	1,580
4.0 m	2,930	2,930	1,430
4.5 m	2,580	2,430	1,180
5.0 m	2,330	2,030	980
5.5 m	2,080	1,730	830
6.0 m	1,930	1,480	730
6.5 m	1,780	1,380	680
7.0 m	1,630	1,230	630
7.5 m	1,480	1,080	530
8.17 m	1,380	980	480

LOAD RADIUS	10.8 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
3.5 m and below	2,130	2,130	1,730
4.0 m	2,130	2,130	1,430
4.5 m	2,130	2,130	1,180
5.0 m	2,030	1,980	930
6.0 m	1,780	1,480	730
7.0 m	1,530	1,180	580
8.0 m	1,380	950	480
9.0 m	1,200	880	430
10.0 m	1,050	730	350
10.58 m	1,000	680	330

Table C

LOAD RADIUS	3.55 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.5 m and below	5,050	5,050	3,280
2.9 m	4,050	4,050	2,750
3.33 m	3,550	3,550	2,280

LOAD RADIUS	5.99 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	4,050	4,050	3,130
2.8 m	4,050	4,050	2,880
2.9 m	4,050	4,050	2,750
3.7 m	3,130	3,130	1,870
4.0 m	2.930	2,930	1,630
4.5 m	2.580	2,580	1,380
5.0 m	2.330	2,330	1,130
5.77 m	2.030	2,030	930

LOAD RADIUS	8.39 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	3,130	3,130	3,130
3.0 m	3,130	3,130	2,630
3.7 m	3,130	3,130	1,870
4.0 m	2,930	2,930	1,630
4.5 m	2,580	2,580	1,380
5.0 m	2,330	2,330	1,130
5.5 m	2,080	2,030	930
6.0 m	1,930	1,830	830
6.5 m	1,780	1,650	780
7.0 m	1,630	1,480	730
7.5 m	1,480	1,350	650
8.17 m	1,380	1,180	550

LOAD RADIUS	10.8 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
3.5 m and below	2,130	2,130	1,930
4.0 m	2,130	2,130	1,630
4.5 m	2,130	2,130	1,330
5.0 m	2,030	2,030	1,080
6.0 m	1,780	1,780	780
7.0 m	1,530	1,480	730
8.0 m	1,380	1,200	550
9.0 m	1,200	1,030	500
10.0 m	1,050	900	430
10.58 m	1,000	830	380

Table D

LOAD RADIUS	3.55 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.5 m and below	5,050	5,050	3,380
2.9 m	4,050	4,050	2,750
3.33 m	3,550	3,550	2,280

LOAD RADIUS	5.99 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	4,050	4,050	3,230
2.8 m	4,050	4,050	2,900
2.9 m	4,050	4,050	2,750
3.7 m	3,130	3,130	1,870
4.0 m	2.930	2,930	1,630
4.5 m	2.580	2,580	1,380
5.0 m	2.330	2,330	1,130
5.77 m	2.030	2,030	930

LOAD RADIUS	8.39 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
2.6 m and below	3,130	3,130	3,130
3.0 m	3,130	3,130	2,630
3.7 m	3,130	3,130	1,870
4.0 m	2,930	2,930	1,630
4.5 m	2,580	2,580	1,380
5.0 m	2,330	2,330	1,130
5.5 m	2,080	2,080	930
6.0 m	1,930	1,930	830
6.5 m	1,780	1,780	780
7.0 m	1,630	1,630	730
7.5 m	1,480	1,480	650
8.17 m	1,380	1,380	550

LOAD RADIUS	10.8 m BOOM		
	CRANE STRENGTH	EMPTY CHASSIS extension width of outriggers	
		MAX.	MIN.
3.5 m and below	2,130	2,130	1,930
4.0 m	2,130	2,130	1,630
4.5 m	2,130	2,130	1,330
5.0 m	2,030	2,030	1,080
6.0 m	1,780	1,780	780
7.0 m	1,530	1,530	730
8.0 m	1,380	1,380	550
9.0 m	1,200	1,200	500
10.0 m	1,050	1,050	430
10.58 m	1,000	1,000	380

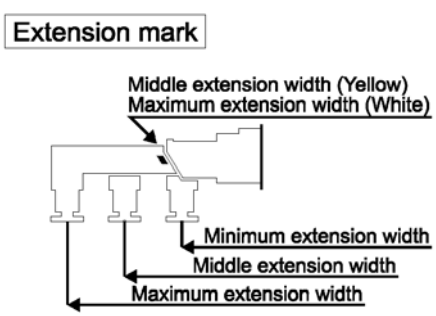
NOTE :

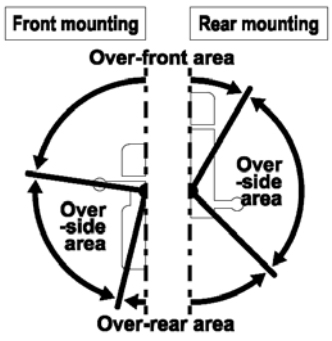
1. Rated capacity indicator issues warning with the limit warning lamp and the buzzer when the working state approaches the stability limit or the strength limit.
2. When the AML is equipped with the rated capacity limiter, an operation stops automatically if the rated lifting capacity is exceeded.
3. 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. When the boom length is 8.39 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, 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.)

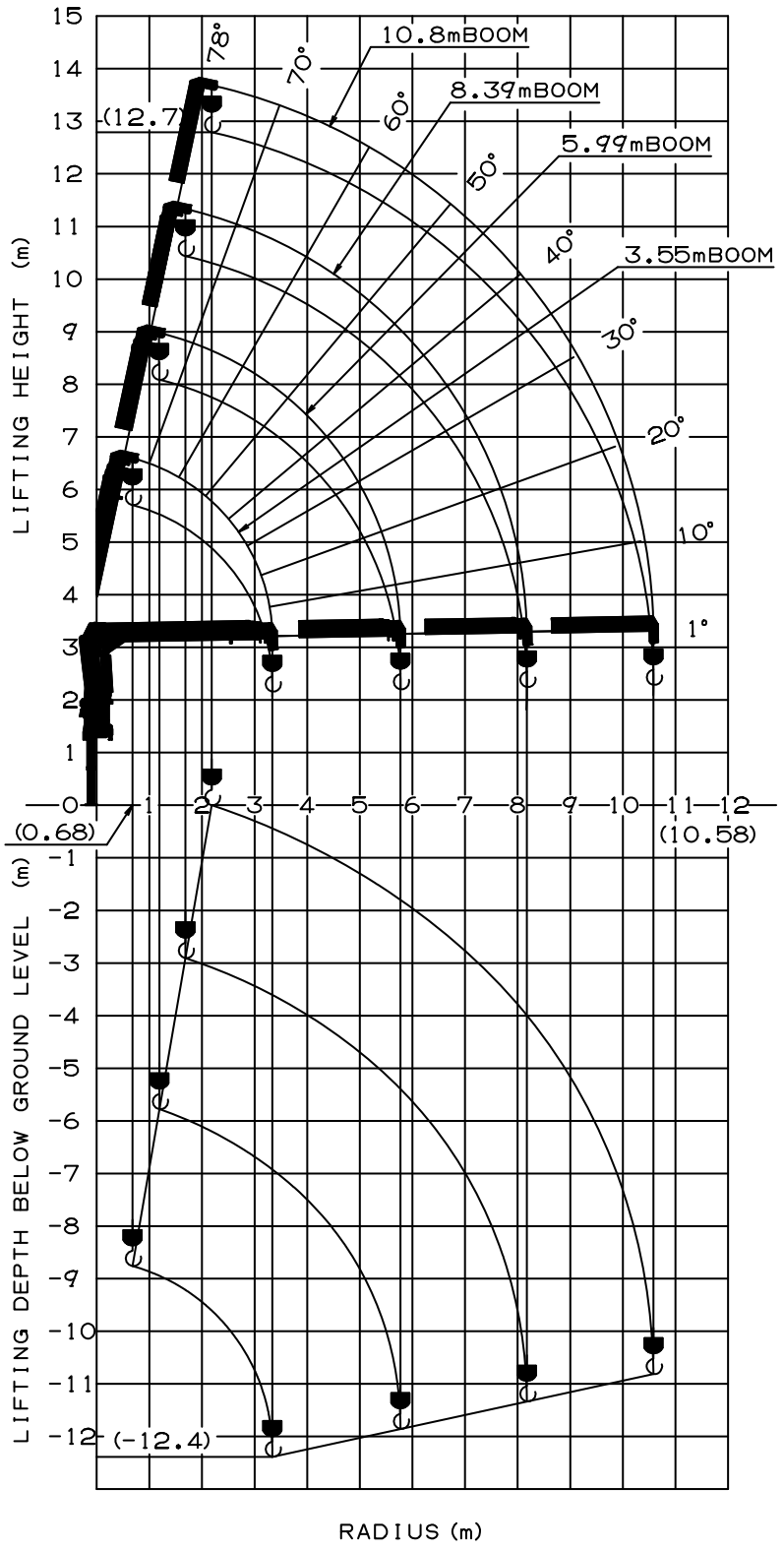
A	15 t ≤ GVW, 2.9 t ≤ CAWf (*2)
B	25 t ≤ GVW, 3.8 t ≤ CAWf (*2)
C	25 t ≤ GVW, 4.4 t ≤ CAWf (*2)
D	25 t ≤ GVW, 4.7 t ≤ CAWf (*2)

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





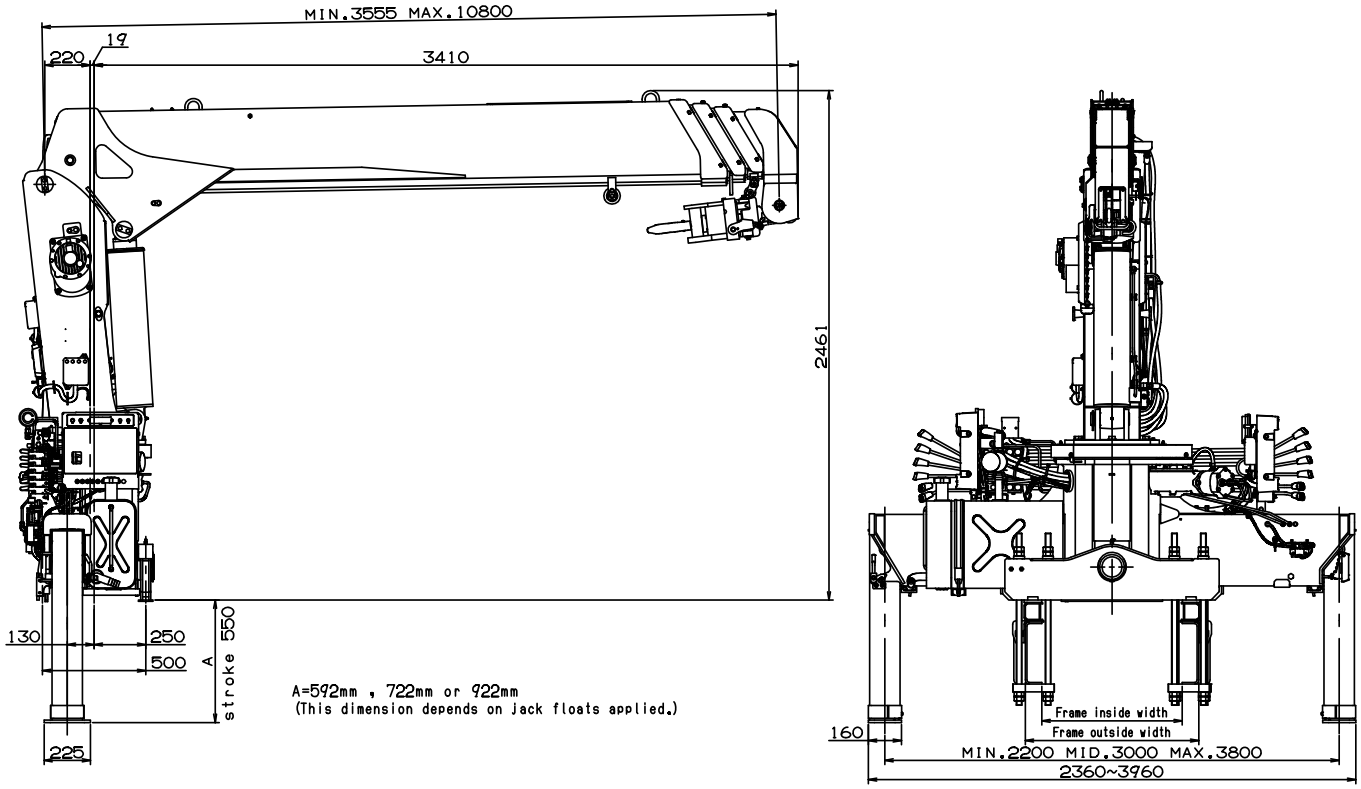
WORKING RANGE



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-ZE554HRS]



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/mm^2

－Tensile strength：540 N/mm^2