TADANO CARGO CRANE

# MODEL : TM-ZE294HS

## CRANE SPECIFICATIONS

CRANE CAPACITY — 3,000 kg at 1.5 m (4-part lines)

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

- Retracted length -------- 3.17 m
- Extended length -------- 8.9 m
- Extending speed ------- 5.73 m / 13 s
- Elevation ---------- Elevated by a double-acting hydraulic cylinder
- Elevating speed -------- $1^{o}$ to $76^{o}$ / 6 s
- Boom point ---------- 2 sheaves

WINCH — Hydraulic motor driven Spur gear speed reduction, provided with mechanical brake

- Single line pull ---------- 7.35 kN {750 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 STOWING DEVICE — Mechanically stowed beneath boom top portion

| | |
|---|---|
| SWING | Hydraulic motor driven Worm gear speed reduction<br>Continuous 360° full circle swing on ball bearing slew ring<br>Automatic swing lock<br>Swing speed -------- 2.5 $min^{-1}$ {rpm} |
| OUTRIGGERS | Manually extended sliders and hydraulically extended jacks<br>Integral with crane frame Power up and down<br>Extension width ----- Min. 1,720 mm<br>Mid. 2,900 mm, 2,400 mm<br>Full 3,400 mm |
| HYDRAULICS | Hydraulic pump --------- Single gear pump<br>Hydraulic motors ------- Axial piston type for winch<br>Axial piston type for swing<br>Control valves ---------- Multiple control valves with<br>Integral safety valve<br>Oil tank capacity -------- approx. 22 L |
| SAFETY DEVICES | AML(Automatic Moment Limiter)<br>Load indication<br>Load moment ratio to rated load indication<br>Warning alarm<br>Over load limiter<br>WHL(Working Height Limiter)<br>Load meter<br>Load indicator<br>Over-unwinding prevention<br>Terminal for emergency stop switch<br>Over-winding alarm<br>Hoisting limiter<br>P.T.O indicator lamp<br>Hook safety latch<br>Hydraulic safety valves, check valves and holding valves<br>Level gauge |
| CRANE MASS | Approx. 1,045 kg (includes standardized mounting parts) |

NOTE : Operating speeds of the crane are guaranteed under the condition that the pump delivery is 53 L /min.

# RATED LIFTING CAPACITIES IN KILOGRAMS

## Crane Strength Rated Capacities

| Load Radius | 3.17 m / 5.12 m Boom | | Load Radius | 7.01 m Boom | Load Radius | 8.9 m Boom |
|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full |
| 1.5 m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 1,000 |
| 2.0 m | 2,300 | 950 | 2.5 m | 1,650 | 3.5 m | 900 |
| 2.5 m | 1,850 | 650 | 3.0 m | 1,400 | 4.0 m | 800 |
| 3.0 m | 1,470 | 450 | 3.5 m | 1,200 | 5.0 m | 650 |
| 3.5 m | 1,220 | 350 | 4.0 m | 1,050 | 6.0 m | 550 |
| 4.0 m | 1,050 | 250 | 4.5 m | 900 | 7.0 m | 450 |
| 4.5 m | 900 | 220 | 5.0 m | 800 | 8.0 m | 370 |
| 4.92m | 820 | 200 | 5.5 m | 700 | 8.7 m | 320 |
| | | | 6.0 m | 620 | | |
| | | | 6.81m | 550 | | |

NOTES : 1. Capacities in above tables include slings and similarly used load handling devices, and they must be added to the mass of the load. They don't, however, include the mass of hook block (30kg)

2. The above numerical values of total rated loads are based on crane strength only. The total rated loads based on stability may lower than those in the above table depending on the loading conditions and the types of the chassis.

## Empty Chassis Rated Capacities

Table A

| Load Radius | 3.17 m / 5.12 m Boom | | Load Radius | 7.01 m Boom | Load Radius | 8.9 m Boom |
|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full |
| 1.5 m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 950 |
| 2.0 m | 2,250 | 950 | 2.5 m | 1,600 | 3.5 m | 800 |
| 2.5 m | 1,700 | 650 | 3.0 m | 1,120 | 4.0 m | 650 |
| 3.0 m | 1,150 | 450 | 3.5 m | 850 | 5.0 m | 420 |
| 3.5 m | 850 | 350 | 4.0 m | 650 | 6.0 m | 320 |
| 4.0 m | 650 | 250 | 4.5 m | 550 | 7.0 m | 250 |
| 4.5 m | 550 | 220 | 5.0 m | 450 | 8.0 m | 200 |
| 4.92m | 500 | 200 | 5.5 m | 370 | 8.7 m | 170 |
| | | | 6.0 m | 320 | | |
| | | | 6.81m | 270 | | |

Table C

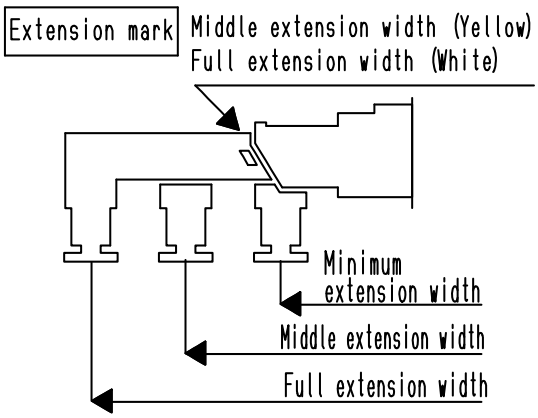
| Load Radius | 3.17 m / 5.12 m Boom | | Load Radius | 7.01 m Boom | Load Radius | 8.9 m Boom |
|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full |
| 1.5 m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 950 |
| 2.0 m | 2,250 | 950 | 2.5 m | 1,600 | 3.5 m | 850 |
| 2.5 m | 1,800 | 650 | 3.0 m | 1,300 | 4.0 m | 750 |
| 3.0 m | 1,350 | 450 | 3.5 m | 1,000 | 5.0 m | 520 |
| 3.5 m | 1,000 | 350 | 4.0 m | 770 | 6.0 m | 400 |
| 4.0 m | 800 | 250 | 4.5 m | 650 | 7.0 m | 300 |
| 4.5 m | 650 | 220 | 5.0 m | 550 | 8.0 m | 250 |
| 4.92m | 550 | 200 | 5.5 m | 450 | 8.7 m | 220 |
| | | | 6.0 m | 400 | | |
| | | | 6.81m | 320 | | |

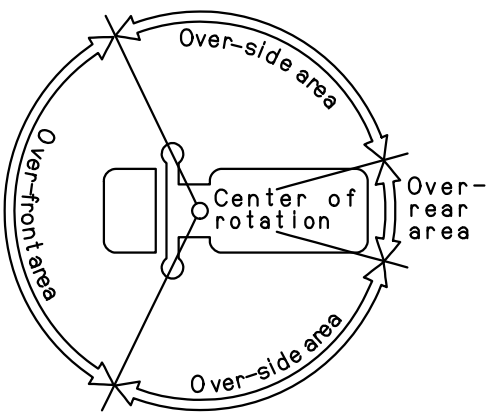
Table D

| Load Radius | 3.17 m / 5.12 m Boom | | Load Radius | 7.01 m Boom | Load Radius | 8.9 m Boom |
|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full |
| 1.5 m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 1,000 |
| 2.0 m | 2,300 | 950 | 2.5 m | 1,650 | 3.5 m | 900 |
| 2.5 m | 1,850 | 650 | 3.0 m | 1,400 | 4.0 m | 800 |
| 3.0 m | 1,470 | 450 | 3.5 m | 1,200 | 5.0 m | 650 |
| 3.5 m | 1,220 | 350 | 4.0 m | 1,050 | 6.0 m | 550 |
| 4.0 m | 1,050 | 250 | 4.5 m | 900 | 7.0 m | 450 |
| 4.5 m | 900 | 220 | 5.0 m | 800 | 8.0 m | 370 |
| 4.92m | 820 | 200 | 5.5 m | 700 | 8.7 m | 320 |
| | | | 6.0 m | 620 | | |
| | | | 6.81m | 550 | | |

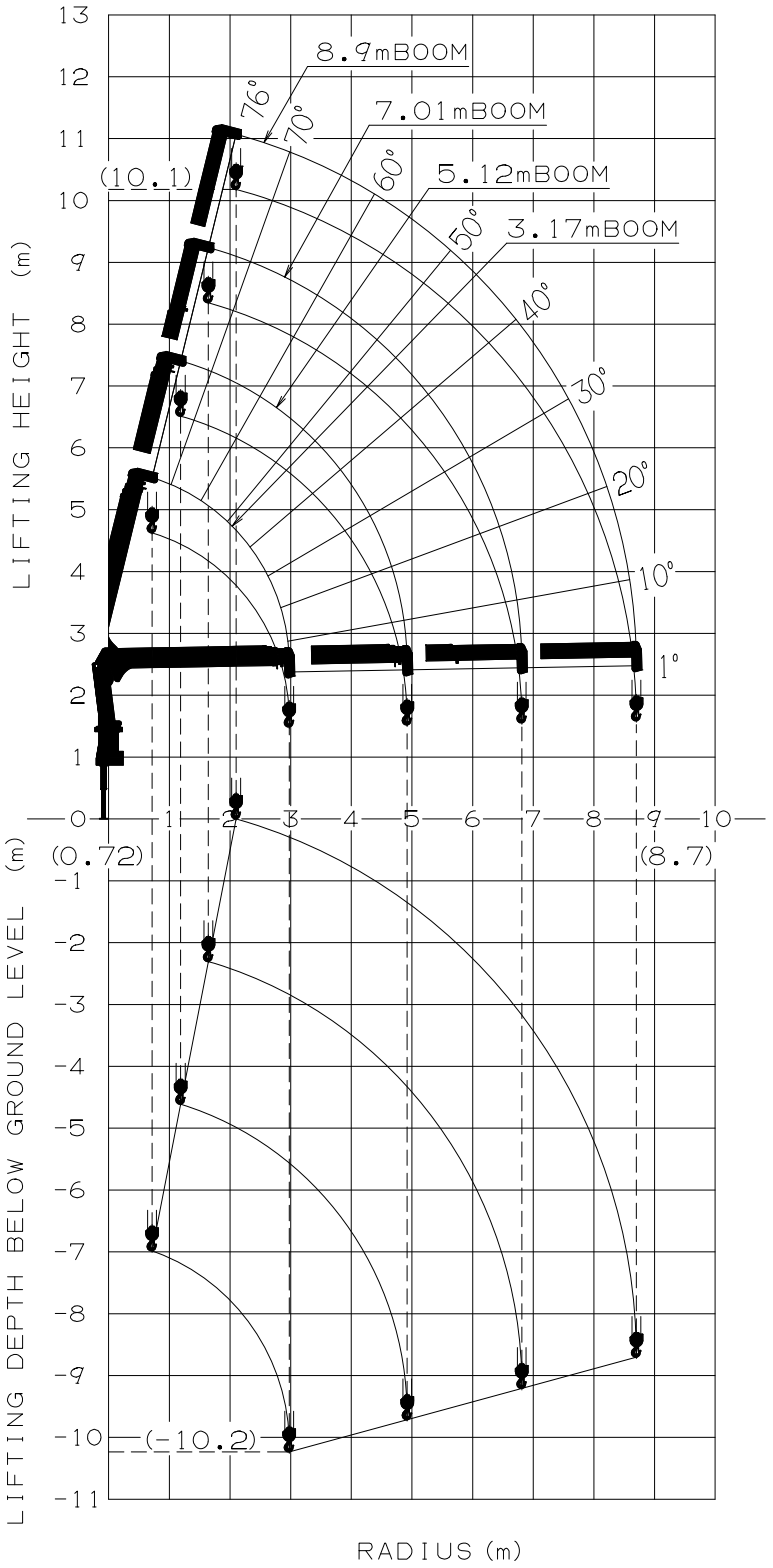
NOTES : 1. Empty Chassis Rated Capacities in these tables depend on condition that crane is set level on firm level ground.

2. Capacities in these tables include slings and similarly used load handling devices, and they must be added to the mass of the load. They don't, however, include the mass of hook block (30 kg).
3. For boom lengths not shown, use the rated lifting capacity of next longer boom.
4. When outriggers are extended to middle extension width, use the rated lifting capacities for outriggers are extended to minimum extension width .
5. For boom lengths longer than 5.12m, extend outriggers to full extension width.
6. 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 the 2nd boom section.
7. Empty Chassis Rated Capacities table A, C and D depend on the types of chassis.
8. Empty Chassis Rated Capacities are shown for over-side areas and over-rear area. These capacities for over-front area may be lowered depending on the types of chassis.



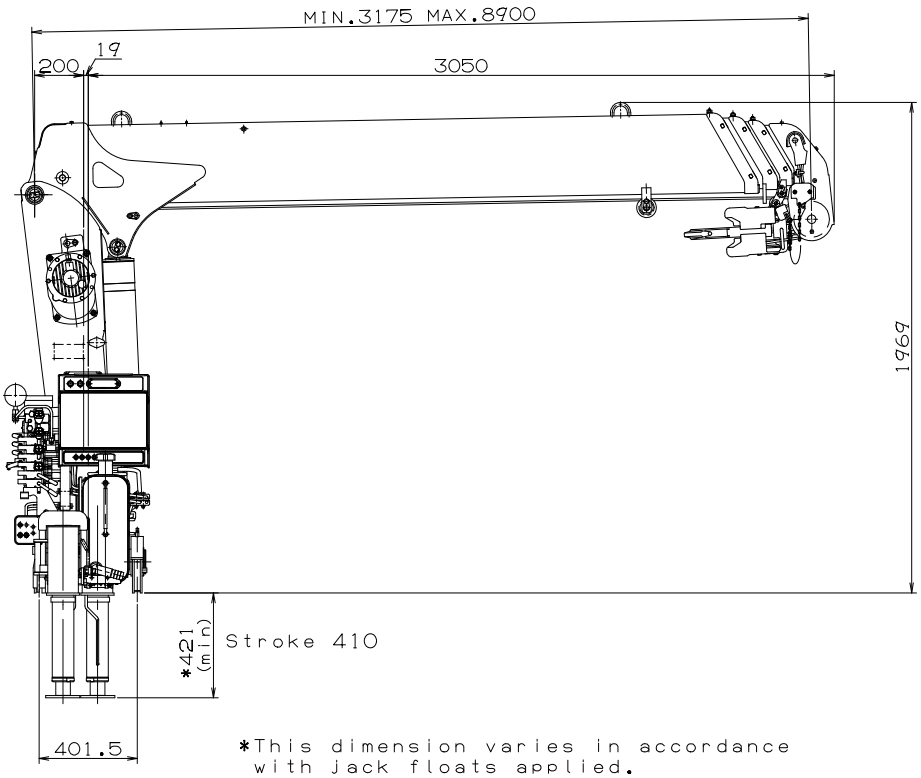
# WORKING RANGE

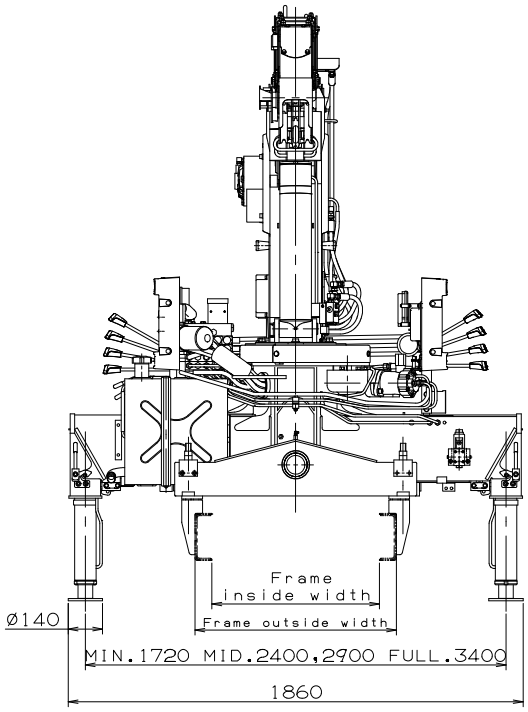



NOTE:

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 mass (including crane mass) ----- 4,500 to 8,000 kg
P.T.O. torque ----------140 N-m {14.3 kgf-m} min.
P.T.O. revolution ---------- Approx. 300 to 1,700 $min^{-1}$ {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 frame top) ---------- Approx. 1,010 mm max.
(Height of crane mounting base can be changed by combination of jack floats and crane bases)