TADANO

SPEC. SHEET No. TM-29Z-5-03457/R-02
DATE September, 2010

TADANO CARGO CRANE

# MODEL : TM-ZE296HS

## CRANE SPECIFICATIONS

| | |
|---|---|
| CRANE CAPACITY | 3,000 kg at 1.4 m (4-part lines) |
| BOOM | Six-sectioned, fully powered partly synchronized telescoping boom of pentagonal box construction<br>Retracted length --------- 3.23 m<br>Extended length ---------- 12.8 m<br>Extending speed --------- 9.57 m / 17 s<br>Elevation ---------- Elevated by a double-acting hydraulic cylinder<br>Elevating speed ---------- $1^{o}$ to $76^{o}$ / 6 s<br>Boom point ---------- 2 sheaves |
| WINCH | Hydraulic motor driven Spur gear speed reduction, provided with mechanical brake and cable follower<br>Single line pull ---------- 7.35 kN {750 kgf}<br>Single line speed -------- 68 m/min (at 4th layer)<br>Wire rope<br>Diameter x length ------ 8 mm x 75 m<br>Breaking strength ------ 43.1 kN {4.39 tf}<br>Construction ---------- 7 x 7 + 6 x WS(26)<br>Hook block ---------- 2 sheaves |
| HOOK STOWING DEVICE | Mechanically stowed beneath boom top portion |

Specifications are subject to change without notice.

SWING
Hydraulic motor driven Worm gear speed reduction
Continuous 360° full circle swing on ball bearing slew ring
Automatic swing lock
Swing speed ---------- 2.5 $min^{-1}$ {rpm}

OUTRIGGERS
Manually extended sliders and hydraulically extended jacks
Integral with crane frame Power up and down
Extension width ------- Min. 1,720 mm
Mid. 2,400 mm, 2,900 mm
Full 3,400 mm

REAR OUTRIGGERS (Locally provided)
Full extension width ---- Not less than 2,400 mm

HYDRAULICS
Hydraulic pump ---------- Single gear pump
Hydraulic motors -------- Axial piston type for winch
Axial piston type for swing
Control valves ---------- Multiple control valves with integral safety valve
Oil tank capacity -------- approx. 22 L

SAFETY DEVICES
AML(Automatic Moment Limiter)
Load indication
Load moment ratio to rated load indication
Warning alarm
Over load limiter
WHL(Working Height Limiter)
Load meter
Load indicator
Over-unwinding prevention
Terminal for emergency stop switch
Over-winding alarm
Hoisting limiter
P.T.O indicator lamp
Hook safety latch
Hydraulic safety valves, check valves and holding valves
Level gauge

CRANE MASS
Approx. 1,200 kg (with standardized mounting parts included)

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 | 3.23 m / 5.17 m Boom | | Load Radius | 7.1 m Boom | Load Radius | 9.0 m Boom | Load Radius | 10.9 m Boom | Load Radius | 12.8 m Boom |
|---|---|---|---|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full | | Full | | Full |
| 1.45m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 950 | 4.0 m and below | 550 | 5.3 m and below | 250 |
| 2.0 m | 2,150 | 1,100 | 2.5 m | 1,650 | 3.5 m | 870 | 4.5 m | 500 | 6.0 m | 220 |
| 2.5 m | 1,700 | 700 | 3.0 m | 1,400 | 4.0 m | 800 | 5.0 m | 450 | 7.0 m | 190 |
| 3.0 m | 1,400 | 500 | 3.5 m | 1,150 | 5.0 m | 650 | 6.0 m | 370 | 8.0 m | 170 |
| 3.5 m | 1,200 | 350 | 4.0 m | 1,000 | 6.0 m | 550 | 7.0 m | 300 | 9.0 m | 150 |
| 4.0 m | 1,020 | 250 | 4.5 m | 850 | 7.0 m | 450 | 8.0 m | 250 | 10.0m | 130 |
| 4.5 m | 870 | 200 | 5.0 m | 750 | 8.0 m | 350 | 9.0 m | 220 | 11.0m | 110 |
| 4.97m | 770 | 150 | 5.5 m | 650 | 8.8 m | 300 | 10.0 m | 200 | 12.6m | 90 |
| | | | 6.0 m | 570 | | | 10.7 m | 180 | | |
| | | | 6.9 m | 470 | | | | | | |

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 C

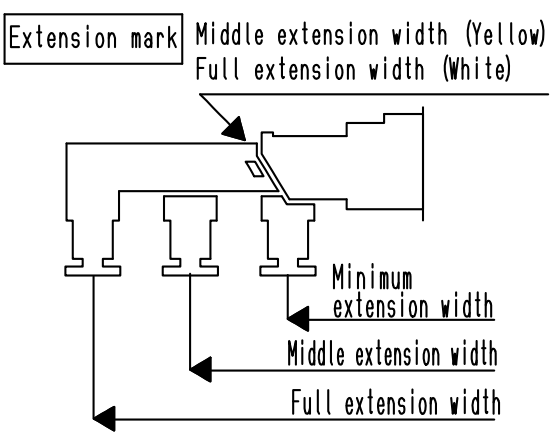
| Load Radius | 3.23 m / 5.17 m Boom | | Load Radius | 7.1 m Boom | Load Radius | 9.0 m Boom | Load Radius | 10.9 m Boom | Load Radius | 12.8 m Boom |
|---|---|---|---|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full | | Full | | Full |
| 1.4 m and below | 3,000 | 1,550 | 2.2 m and below | 1,700 | 3.0 m and below | 900 | 4.0 m and below | 450 | 5.3 m and below | 250 |
| 2.0 m | 2,100 | 1,100 | 2.5 m | 1,500 | 3.5 m | 800 | 4.5 m | 400 | 6.0 m | 210 |
| 2.5 m | 1,700 | 700 | 3.0 m | 1,250 | 4.0 m | 700 | 5.0 m | 350 | 7.0 m | 180 |
| 3.0 m | 1,400 | 500 | 3.5 m | 1,050 | 5.0 m | 550 | 6.0 m | 270 | 8.0 m | 150 |
| 3.5 m | 1,200 | 350 | 4.0 m | 900 | 6.0 m | 450 | 7.0 m | 230 | 9.0 m | 130 |
| 4.0 m | 1,000 | 250 | 4.5 m | 750 | 7.0 m | 350 | 8.0 m | 200 | 10.0m | 110 |
| 4.5 m | 800 | 200 | 5.0 m | 650 | 8.0 m | 250 | 9.0 m | 170 | 11.0m | 100 |
| 4.97m | 650 | 150 | 5.5 m | 550 | 8.8 m | 200 | 10.0 m | 150 | 12.6m | 70 |
| | | | 6.0 m | 450 | | | 10.7 m | 120 | | |
| | | | 6.9 m | 350 | | | | | | |

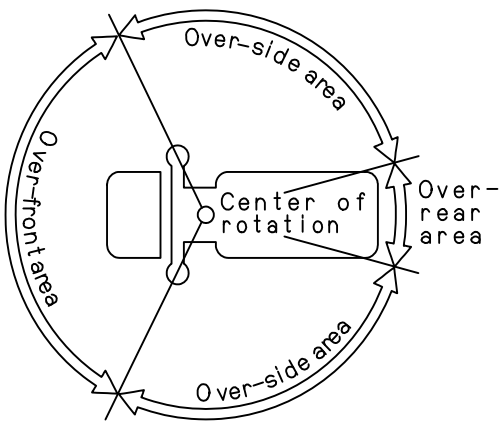
Table D

| Load Radius | 3.23 m / 5.17 m Boom | | Load Radius | 7.1 m Boom | Load Radius | 9.0 m Boom | Load Radius | 10.9 m Boom | Load Radius | 12.8 m Boom |
|---|---|---|---|---|---|---|---|---|---|---|
| | Extension width of outriggers | | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers | | Extension width of outriggers |
| | Full | Minimum | | Full | | Full | | Full | | Full |
| 1.45m and below | 3,000 | 1,550 | 2.2 m and below | 1,850 | 3.0 m and below | 950 | 4.0 m and below | 550 | 5.3 m and below | 250 |
| 2.0 m | 2,150 | 1,100 | 2.5 m | 1,650 | 3.5 m | 870 | 4.5 m | 500 | 6.0 m | 220 |
| 2.5 m | 1,700 | 700 | 3.0 m | 1,400 | 4.0 m | 800 | 5.0 m | 450 | 7.0 m | 190 |
| 3.0 m | 1,400 | 500 | 3.5 m | 1,150 | 5.0 m | 650 | 6.0 m | 370 | 8.0 m | 170 |
| 3.5 m | 1,200 | 350 | 4.0 m | 1,000 | 6.0 m | 550 | 7.0 m | 300 | 9.0 m | 150 |
| 4.0 m | 1,020 | 250 | 4.5 m | 850 | 7.0 m | 450 | 8.0 m | 250 | 10.0m | 130 |
| 4.5 m | 870 | 200 | 5.0 m | 750 | 8.0 m | 350 | 9.0 m | 220 | 11.0m | 110 |
| 4.97m | 770 | 150 | 5.5 m | 650 | 8.8 m | 300 | 10.0 m | 200 | 12.6m | 90 |
| | | | 6.0 m | 570 | | | 10.7 m | 180 | | |
| | | | 6.9 m | 470 | | | | | | |

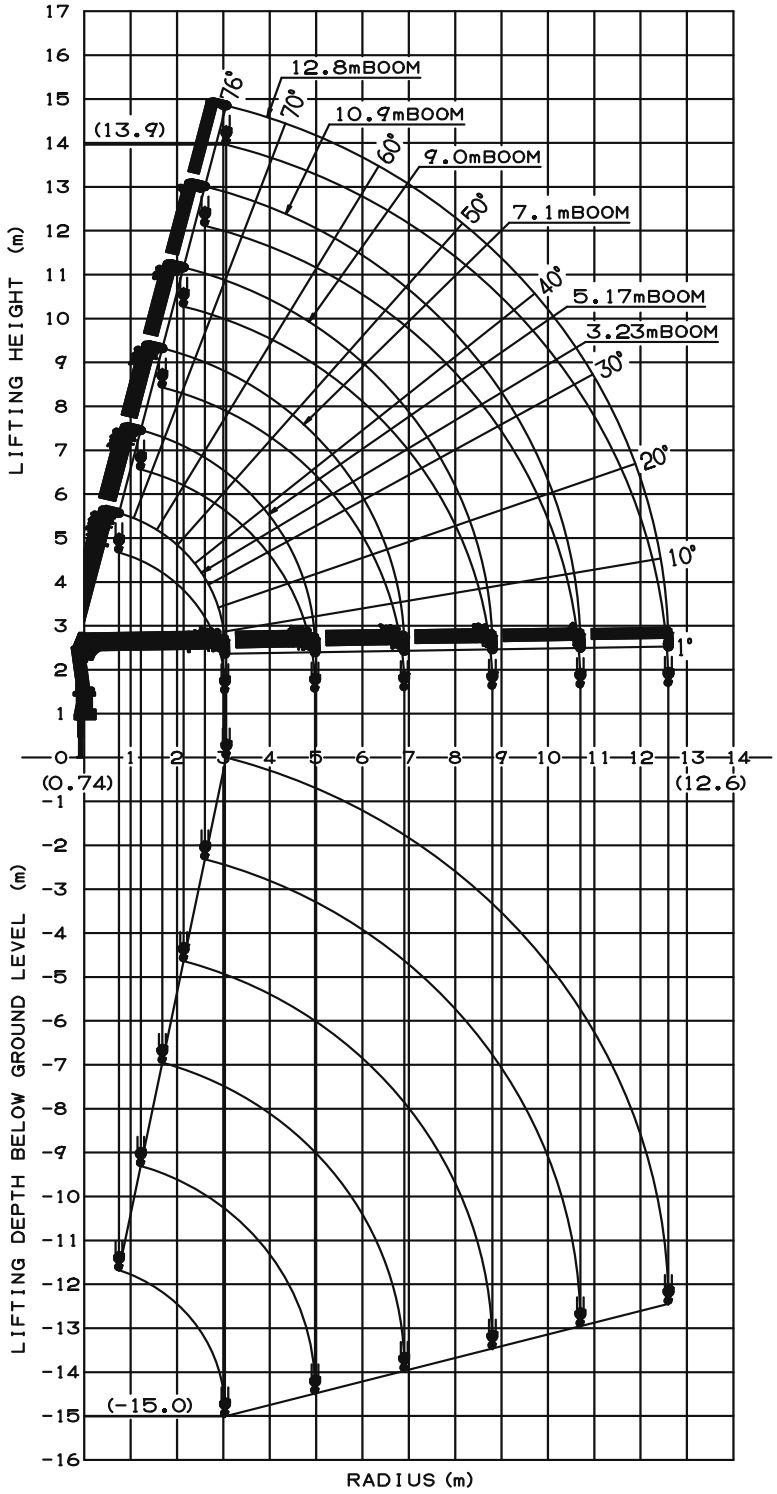
NOTES : 1. Empty Chassis Rated Capacities in these tables depend on condition that crane is set level on firm level ground.

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 (30kg).
3. For boom lengths not shown, use the rated lifting capacity of next longer boom.
4. When front 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 5.17m, extend front outriggers and rear outriggers to full extension width.
6. When the boom length is 9.0 m, a half of the first ▱ mark on lateral face of the 4th boom section is exposed out of the 3rd boom section.
7. When the boom length is 10.9 m, a half of the second ▱ mark on lateral face of the 4th boom section is exposed out of the 3rd boom section.
8. Empty Chassis Rated Capacities table C and D depend on the types of chassis.
9. 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.



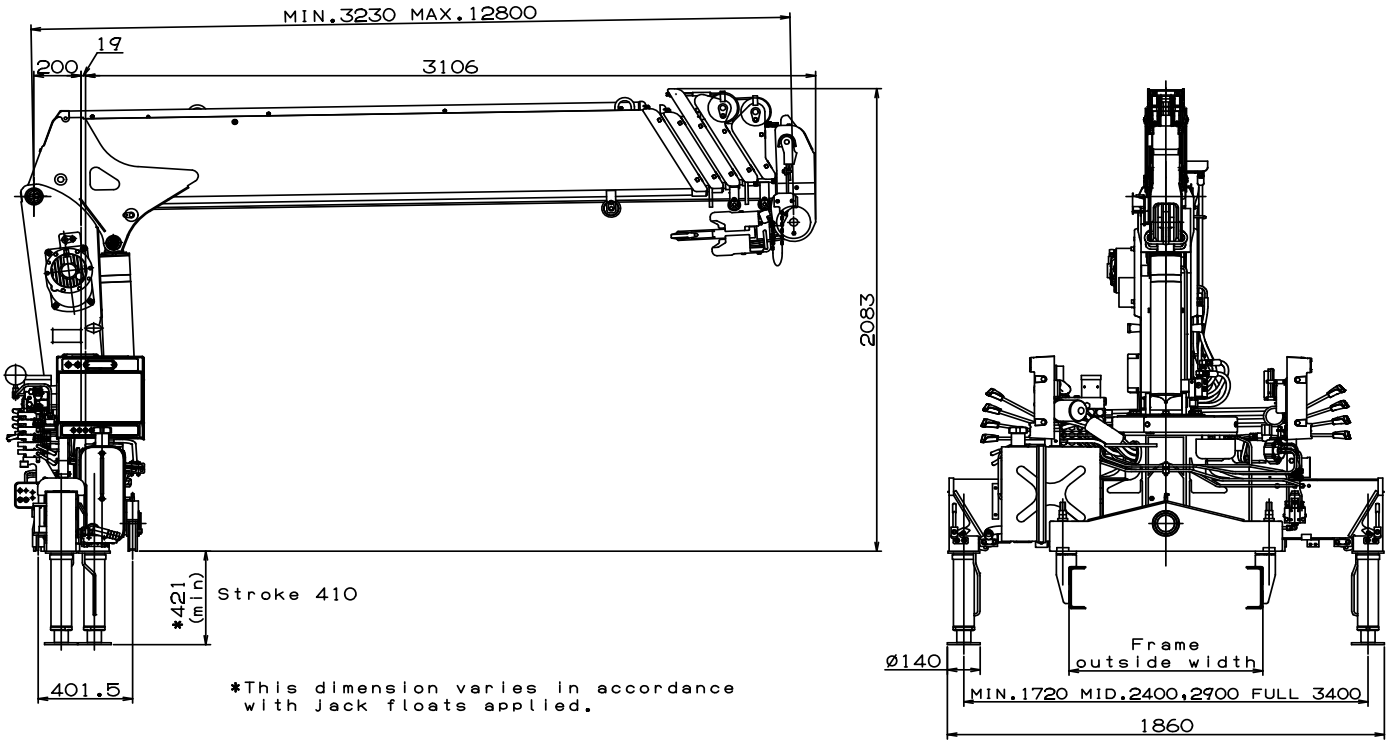
## WORKING RANGE




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 outside width range ---------- Approx. 680 to 860 mm
Frame height (ground to frame top) ---------- Approx. 1010 mm max.
(Height of crane mounting base can be changed by combination of jack floats and crane bases)