

## TADANO CARGO CRANE

MODEL : **TM-ZX1005** series

MODEL	SPEC.	SPEC. No.
TM-ZX1005HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator/limiter)	TM-100Z-1-03015
TM-ZX1005HRS	Hook-in Radio controller Safety device (AML : Rated capacity indicator)	TM-100Z-1-03025
TM-ZX1005HS	Hook-in Safety device (AML : Rated capacity indicator)	TM-100Z-1-03035
TM-ZX1005HS	Hook-in Safety device (AML : Rated capacity indicator/limiter)	TM-100Z-1-03055

## CRANE SPECIFICATIONS

MAXIMUM LIFTING CAPACITY 10,000 kg at 1.4 m (8-part line)

CRANE CAPACITY 4,900 kg at 3.1 m (4-part line)

### BOOM

Five-sectioned, fully powered partly synchronized telescoping boom of pentagonal box construction with 4 sheaves at boom head

Fully retracted length -----4.40 m

Fully extended length----- 15.92 m

Extending speed -----11.5 m in 38 s

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

Raising speed -----1° to 82° in 17 s

Boom point ----- 4 sheaves

### WINCH

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

Single line pull ----- 14.72 kN {1,500 kgf}

Single line speed ----- 44 m/min (at 4th layer)

Wire rope

Diameter x length ----- 10 mm x 95 m

Breaking strength ----- 73.5 kN {7,500 kgf}

Construction ----- 7 x 7 + 6 x Fi (29)

Hook block ----- 4 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 ----- 2.2 min<sup>-1</sup> {rpm}

## OUTRIGGERS

Hydraulically operated beams and jacks

Integral with crane frame

Extended width ----- Min. 2,300 mm center to center  
(2,460 mm outer to outer)  
Mid. 3,900 mm center to center  
(4,060 mm outer to outer)  
Max. 5,200 mm center to center  
(5,360 mm outer to outer)

## HYDRAULIC SYSTEM

Hydraulic pump ----- Single gear pump  
Hydraulic motors ----- Axial piston type for winch and slewing  
Control valves ----- Multiple control valves with integral  
safety valves  
Oil tank capacity ----- Approx. 102 L

## (\*1) 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  
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  
 Over unwinding prevention  
 Hook safety latch  
 Spirit level  
 Jack interlock  
 Boom/outrigger stowing reminder alarm  
 Emergency stop switch  
 (\*1) Stop switch on radio controller  
 Hydraulic safety valves, check valves and holding valves

## OPTIONAL EQUIPMENT

Outrigger pads  
 Oil cooler  
 Rear outriggers (outrigger beam non-extension type)  
 (\*1) Basket mounting support  
 Maintenance valve

## CRANE MASS

Approx. 3,170 kg  
 (Except crane options and mounting parts.)

- NOTE :
1. 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)
  2. \*1 mark applies only to HRS specifications.

**RATED LIFTING CAPACITIES (×1,000 kg)**

Table A

4.40 m BOOM								
LOAD RADIUS(m)			1.4 and below	1.85	2.25	3.1	3.5	4.15
CRANE STRENGTH			10.00	8.00	6.00	4.90	4.20	3.55
EMPTY CHASSIS	extension width of outriggers	MAX.	10.00	8.00	6.00	4.90	4.20	3.55
		MID.	10.00	8.00	6.00	4.90	4.20	3.15
		MIN.	10.00	7.15	4.55	2.40	1.90	1.30

7.28 m BOOM										
LOAD RADIUS (m)			2.25 and below	3.1	3.5	4.0	4.5	5.0	6.0	7.03
CRANE STRENGTH			6.00	4.90	4.20	3.70	3.30	2.90	2.20	1.75
EMPTY CHASSIS	extension width of outriggers	MAX.	6.00	4.90	4.20	3.70	3.30	2.90	2.20	1.60
		MID.	6.00	4.90	4.20	3.35	2.60	2.10	1.45	1.00
		MIN.	4.40	2.30	1.80	1.35	1.05	0.80	0.50	0.25

10.16 m BOOM									
LOAD RADIUS(m)			4.5 and below	5.0	6.0	7.0	8.0	9.0	9.91
CRANE STRENGTH			3.00	2.70	2.20	1.80	1.40	1.15	1.00
EMPTY CHASSIS	extension width of outriggers	MAX.	3.00	2.70	2.20	1.60	1.25	1.00	0.75
		MID.	2.60	2.10	1.45	1.00	0.80	0.60	0.45
		MIN.	1.05	0.80	0.50	0.25	0.20	-	-

13.04 m BOOM												
LOAD RADIUS(m)			4.5 and below	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	12.7
CRANE STRENGTH			3.00	2.60	2.00	1.70	1.40	1.15	1.00	0.90	0.75	0.65
EMPTY CHASSIS	extension width of outriggers	MAX.	3.00	2.60	2.00	1.60	1.25	1.00	0.75	0.65	0.55	0.50
		MID.	2.60	2.10	1.45	1.00	0.80	0.60	0.45	0.35	0.30	0.25

15.92 m BOOM													
LOAD RADIUS (m)			5.0 and below	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.67
CRANE STRENGTH			2.60	2.00	1.65	1.40	1.15	1.00	0.90	0.75	0.65	0.55	0.45
EMPTY CHASSIS	extension width of outriggers	MAX.	2.60	2.00	1.60	1.25	1.00	0.75	0.65	0.55	0.50	0.45	0.35
		MID.	2.10	1.45	1.00	0.80	0.60	0.45	0.35	0.30	0.25	0.20	0.15

Table D

4.40 m BOOM								
LOAD RADIUS (m)			1.4 and below	1.85	2.25	3.1	3.5	4.15
CRANE STRENGTH			10.00	8.00	6.00	4.90	4.20	3.55
EMPTY CHASSIS	extension width of outriggers	MAX.	10.00	8.00	6.00	4.90	4.20	3.55
		MID.	10.00	8.00	6.00	4.90	4.20	3.55
		MIN.	10.00	8.00	5.65	3.00	2.40	1.70

7.28 m BOOM										
LOAD RADIUS (m)			2.25 and below	3.1	3.5	4.0	4.5	5.0	6.0	7.03
CRANE STRENGTH			6.00	4.90	4.20	3.70	3.30	2.90	2.20	1.75
EMPTY CHASSIS	extension width of outriggers	MAX.	6.00	4.90	4.20	3.70	3.30	2.90	2.20	1.75
		MID.	6.00	4.90	4.20	3.70	3.30	2.80	1.95	1.40
		MIN.	5.50	2.90	2.30	1.75	1.40	1.10	0.75	0.45

10.16 m BOOM									
LOAD RADIUS(m)			4.5 and below	5.0	6.0	7.0	8.0	9.0	9.91
CRANE STRENGTH			3.00	2.70	2.20	1.80	1.40	1.15	1.00
EMPTY CHASSIS	extension width of outriggers	MAX.	3.00	2.70	2.20	1.80	1.40	1.15	1.00
		MID.	3.00	2.70	1.95	1.40	1.15	0.90	0.70
		MIN.	1.40	1.10	0.75	0.45	0.35	0.20	-

13.04 m BOOM												
LOAD RADIUS (m)			4.5 and below	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	12.7
CRANE STRENGTH			3.00	2.60	2.00	1.70	1.40	1.15	1.00	0.90	0.75	0.65
EMPTY CHASSIS	extension width of outriggers	MAX.	3.00	2.60	2.00	1.70	1.40	1.15	1.00	0.90	0.75	0.65
		MID.	3.00	2.60	1.95	1.40	1.15	0.90	0.70	0.60	0.50	0.45

15.92 m BOOM													
LOAD RADIUS(m)			5.0 and below	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.67
CRANE STRENGTH			2.60	2.00	1.65	1.40	1.15	1.00	0.90	0.75	0.65	0.55	0.45
EMPTY CHASSIS	extension width of outriggers	MAX.	2.60	2.00	1.65	1.40	1.15	1.00	0.90	0.75	0.65	0.55	0.45
		MID.	2.60	1.95	1.40	1.15	0.90	0.70	0.60	0.50	0.45	0.40	0.30

- 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 have been calculated on the basis of ISO 15442.
6. This value includes the mass of lifting devices such as hook block (95 kg).
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 13.04 m, a half of the  $\square$  mark on lateral face of the 4th boom section is exposed out of 3rd boom section.
11. When the lifting load is heavier than 6,000 kg, number of part lines must be 8. In case of 6,000 kg or less, number of part lines must be 4. Load per line must not surpass 14.7 kN {1,500 kgf}.

Number of part line	4	8
Maximum of load	6,000 kg	10,000 kg

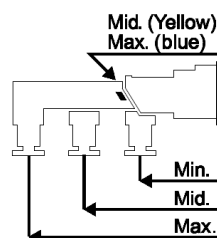
12. Empty chassis rated lifting capacity varies according to the working area.
- Front mounting <over-side, over-rear area> : 100%
  - <over-front area> : 25% (\*2) or 60% (\*2) or 100% (\*2)
- \*2 : Depend on the types of chassis.
13. Empty Chassis Rated Capacities table A and D depend on the types of chassis.
- (The following table shows guidelines for bodywork vehicles that can achieve the rated lifting capacity tables A and D for vehicles. The rated lifting capacity may not be applicable depending on vehicle specifications. Be sure to carry out a stability inspection to determine which rated lifting capacity tables to apply.)

A	Front 1-axis and rear 1-axis 5000 mm $\leq$ WB (*3), 16 t $\leq$ GVW, 2.9 t $\leq$ CAWf (*4) Front 1-axis and rear 2-axis 5500 mm $\leq$ WB (*3), 20 t $\leq$ GVW, 2.9 t $\leq$ CAWf (*4)
D	Front 1-axis and rear 2-axis 5500 mm $\leq$ WB (*3), 25 t $\leq$ GVW, 4.0 t $\leq$ CAWf (*4)

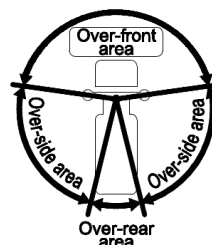
\*3 : From the front axle to the farthest rear axle.

\*4 : Chassis front axle weight (excluding crane and mounting parts mass).

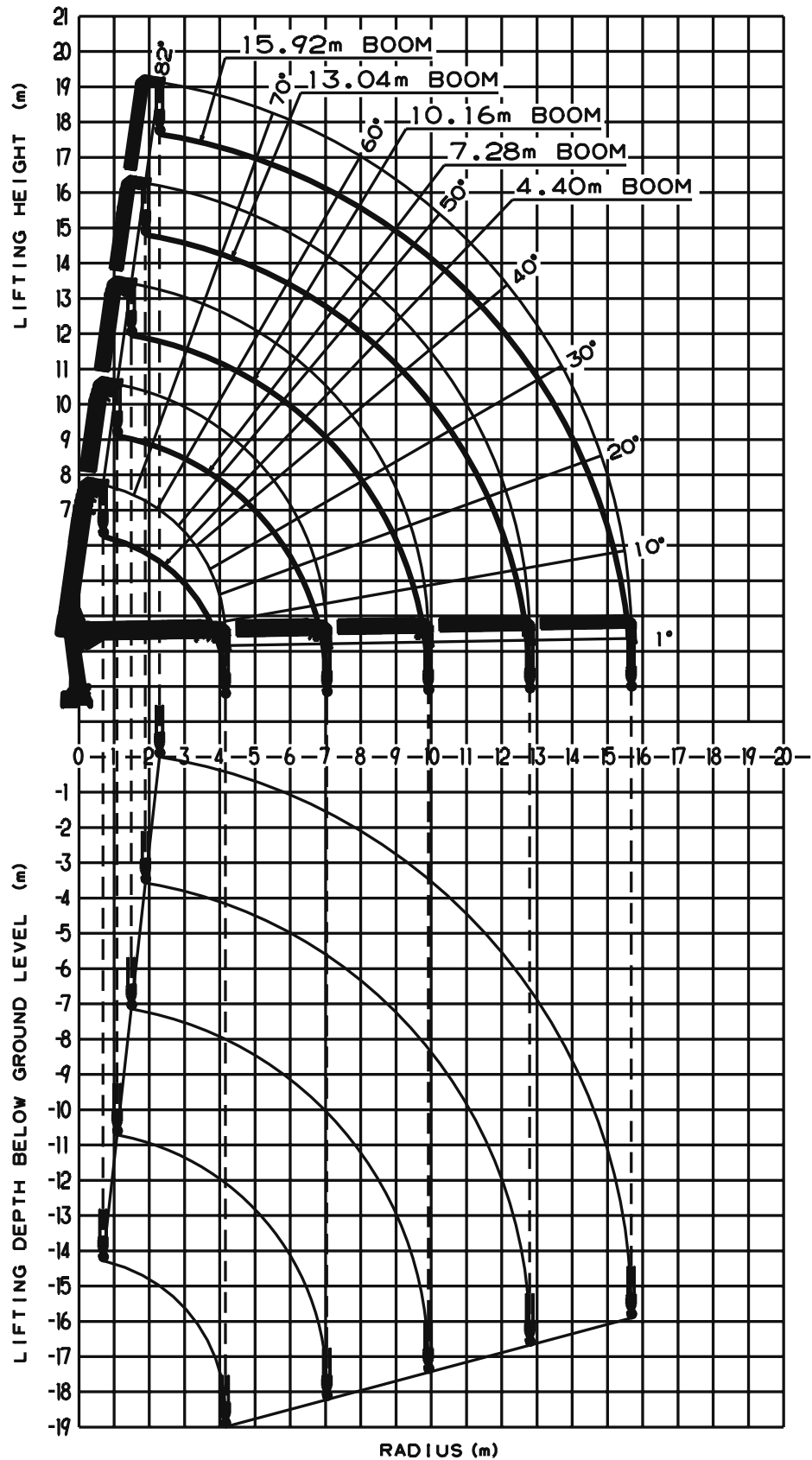
Extension mark



Front mounting



## WORKING RANGE (4 part line)



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.



# WORKING RANGE (BASKET MODE)

Table A

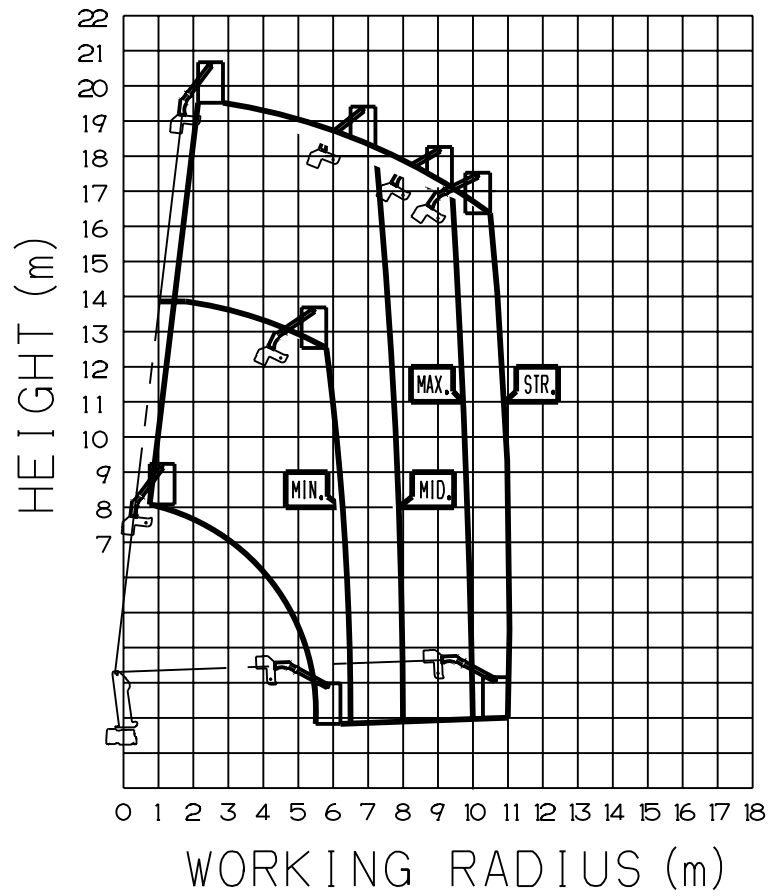
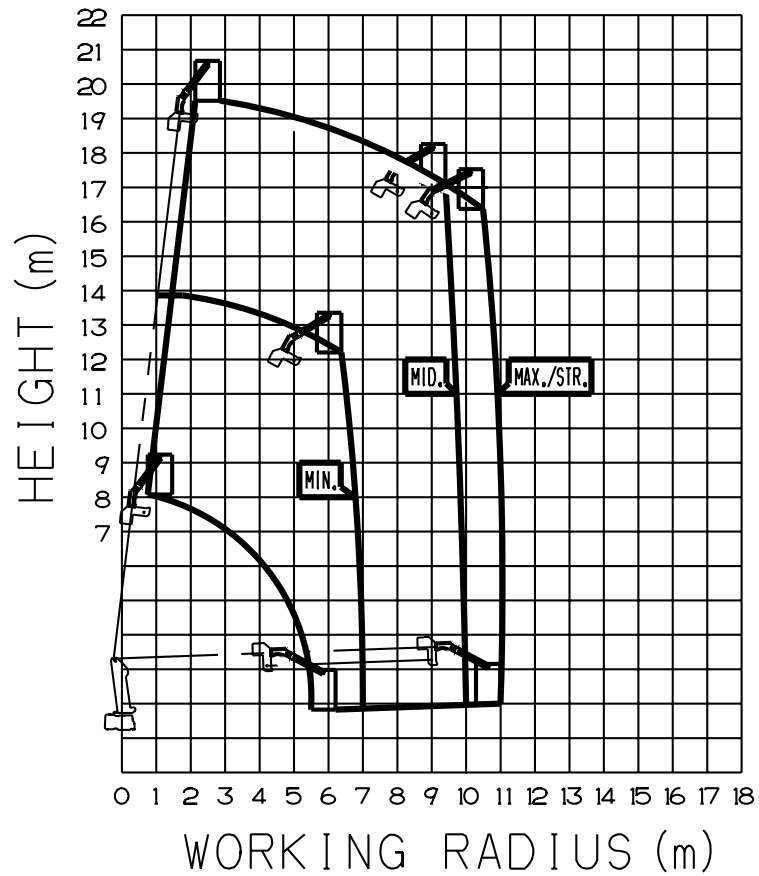


Table D



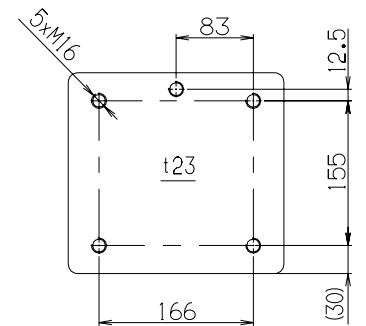
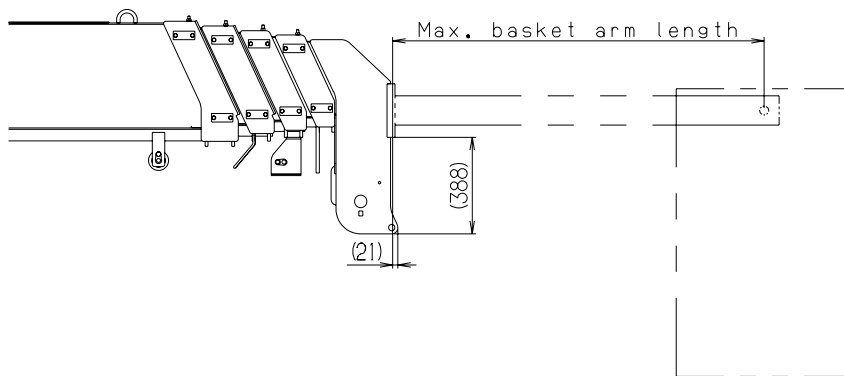
- NOTE :
1. The indicated working range assumes that the machine is set up on a firm and level ground, and does not include boom deflection.
  2. This working range chart shows the over-side and over-rear areas.  
(The working range is up to "STR." when the stability is maximum. When the stability is minimum, the working range is in accordance with the outrigger extension width during work.)
  3. The working range in the over-front area is smaller than the indication in the working range chart.
  4. "MAX.", "MID.", and "MIN." indicates the outrigger extension widths.
  5. This working range chart is an example, and the actual work range varies depending on the shape of the basket.



## MOUNTABLE BASKET SPECIFICATIONS

Max. basket weight	200 kg
Max. basket loading capacity	200 kg
Max. basket arm length	1700 mm

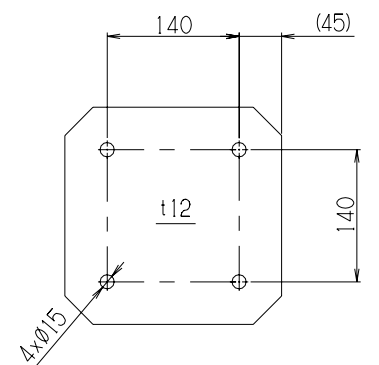
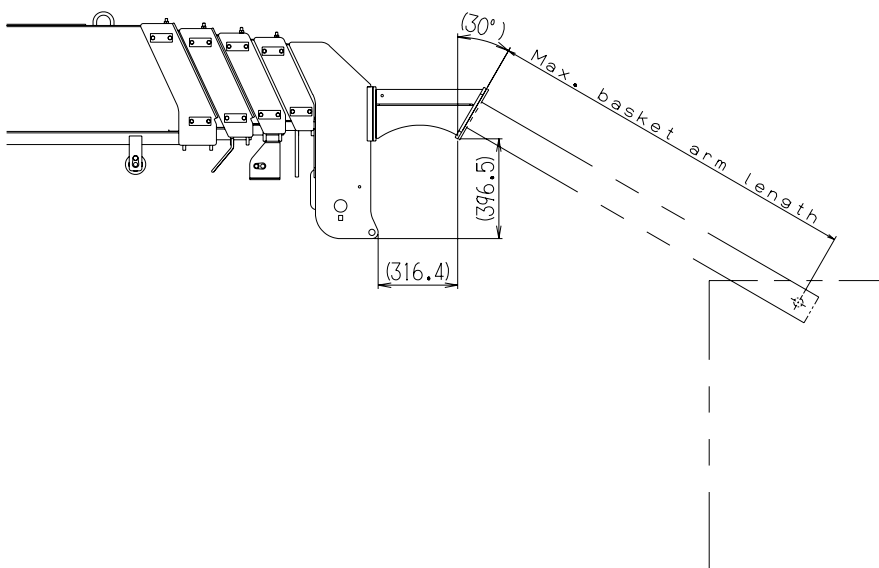
- The size of mounting bolt is M16x2.0, and the length should be selected so that the engagement allowance is 13mm or more and 24mm less.
- Use bolts with a strength classification of 10.9 or equivalent and washers suitable for the bolts.
- Tightening torque :  $147 \pm 8$  [N · m]



Basket monting plate

## MOUNTABLE BASKET SPECIFICATIONS (WHEN USING OPTIONAL BASKET MOUNTING SUPPORT)

Max. basket weight	200 kg
Max. basket loading capacity	200 kg
Max. basket arm length	1500 mm



Basket monting plate

## GENERAL DATA FOR SUITABLE TRUCKS

Even within range of this data, bodywork may not be possible depending on the specifications of the truck.

Gross vehicle weight	16,000 kg min.
Chassis front axle weight (excluding crane and mounting parts mass)	2,900 kg min.
Wheel base (*1)	5,000 mm min.
P.T.O. torque	200 N·m {20.4 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. 1,000 mm min.
Frame	Weight distribution and frame strength should be calculated for each truck
Frame width range (inside to outside)	Approx. 520 to 1,010 mm
Frame height (ground to chassis frame top) (*2)	Approx. 830 to 1,095 mm
Chassis frame section modulus (*3)	585 cm <sup>3</sup> min.

\*1 From the front axle to the farthest rear axle.

\*2 Height of crane mounting surface is changed by crane bases.

\*3 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>