MODEL: **TM-20110**

**CRANE SPECIFICATIONS**

**MAXIMUM LIFTING CAPACITY**

18,000 kg @ 1.5m (6-part lines)

**BOOM**

5-sectioned, fully powered synchronized telescoping boom of pentagonal box construction

- Retracted length: 8.3 m
- Extended length: 33.5 m
- Extended speed: 25.2 m / 73 s
- Elevation: Elevated by a double-acting hydraulic cylinder
- Elevation speed: -5° to 80° / 23 s

**NOTE**: Extended speed and elevation speed are calculated under the condition that the flow is 95 L/min

- Boom point: 2 sheaves

**WINCH**

Hydraulic motor driven, Planetary gear speed reduction, provided with automatic brake

- Single line pull: 3,265 kg
- Single line speed: approx. 85 m/min (@ 3rd layer)

**NOTE**: Single line speed is calculated under the condition that the flow is 216 L/min

**Wire rope**

- Diameter x length: 14 mm x 96 m
- Breaking strength: 145 kN
- Hook block: Swivel hook with safety latch for single line use - 3,200 kg capacity

**SWING**

Hydraulic motor driven, Planetary gear speed reduction, Non-continuous 375° rotation on ball bearing slew ring (Optional) (TM-2000-1-104)

- Swing speed: 375° / 38 s

Continuous 360° full circle swing (TM-2000-1-114)

- Swing speed: 360° / 37 s
OUTRIGGERS
Hydraulically extended sliders and hydraulically extended jacks, Integral with crane frame
Extended width
Min. 2.18 m
Mid. 4.0 m
Max. 5.7 m

REAR STABILIZERS
Hydraulically extended sliders and hydraulically extended jacks, Integral with chassis frame
Extended width
Min. 2.25 m
Max. 3.5 m

HYDRAULICS
Hydraulic motor
For winch and swing
Control valves
Multiple control valves with integral safety valve
Hydraulic pump
3-section gear pump
  Winch system: 121 L/min (20.6 MPa)
  Boom and outriggers system: 95 L/min (21.1 MPa)
  Swing system: 25 L/min (12.1 MPa)
Reserve tank
295 L capacity
* PTO / mounting not included

ELECTRICAL SYSTEM
Power supply
DC12V

SAFETY DEVICES
Hoist limiter with alarm
Hook safety latch
Level gauge
Hydraulic safety valves, check valves and holding valves
Over load shutoff with load indicator
  Load / Boom angle indication
  Audible warning
  External warning lamps

BOOM REST
Removable

TORSION BOX
(You must select a torsion box according to the length of the flatbed and have it installed)
The box must provide torsional stiffness in accordance with factory requirements
The box must be installed in accordance with factory requirements
The mass of standard torsion box for 6.7 m flat bed: approx. 1,800 kg

CRANE MASS
Approx. 6,900 kg (crane bare: 375° non-continuous swing)
Approx. 8,100 kg (includes all items except torsion box and hook (crane, tank, oil, front stabilizer, rear stabilizer, boom rest, etc.))
OPTIONAL EQUIPMENT

Hook block - 18,000 kg capacity
  3 sheaves, swivel type hook with safety latch
Hook block - 12,000 kg capacity
  2 sheaves, swivel type hook with safety latch
Hook block - 6,000 kg capacity
  1 sheave, swivel type hook with safety latch
Front stabilizer (hydraulic extended jack)
  Necessary for full capacity 360° around the truck
Boom angle alarm
RATED LIFTING CAPACITIES (IN KILOGRAMS)

<table>
<thead>
<tr>
<th>Load Radius (m)</th>
<th>8.3m Boom</th>
<th>14m Boom</th>
<th>18.9m Boom</th>
<th>23.8m Boom</th>
<th>28.6m Boom</th>
<th>33.5m Boom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>79°</td>
<td>18,000</td>
<td>12,700</td>
<td>9,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>79°</td>
<td>11,300</td>
<td>11,300</td>
<td>6,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>68°</td>
<td>9,900</td>
<td>9,900</td>
<td>4,700</td>
<td>78°</td>
<td>7,200</td>
</tr>
<tr>
<td>4</td>
<td>60°</td>
<td>8,800</td>
<td>8,800</td>
<td>3,500</td>
<td>76°</td>
<td>7,200</td>
</tr>
<tr>
<td>5</td>
<td>60°</td>
<td>7,900</td>
<td>7,800</td>
<td>2,750</td>
<td>73°</td>
<td>7,200</td>
</tr>
<tr>
<td>6</td>
<td>51°</td>
<td>6,400</td>
<td>5,400</td>
<td>1,800</td>
<td>69°</td>
<td>6,200</td>
</tr>
<tr>
<td>8</td>
<td>41°</td>
<td>5,200</td>
<td>3,750</td>
<td>1,200</td>
<td>65°</td>
<td>5,100</td>
</tr>
<tr>
<td>10</td>
<td>55°</td>
<td>3,700</td>
<td>2,200</td>
<td>650</td>
<td>66°</td>
<td>3,300</td>
</tr>
<tr>
<td>12</td>
<td>44°</td>
<td>2,600</td>
<td>1,450</td>
<td>300</td>
<td>59°</td>
<td>2,500</td>
</tr>
<tr>
<td>14</td>
<td>29°</td>
<td>1,800</td>
<td>900</td>
<td></td>
<td>51°</td>
<td>2,000</td>
</tr>
<tr>
<td>16</td>
<td>44°</td>
<td>1,500</td>
<td>650</td>
<td>56°</td>
<td>1,600</td>
<td>700</td>
</tr>
<tr>
<td>18</td>
<td>32°</td>
<td>1,100</td>
<td>400</td>
<td>50°</td>
<td>1,250</td>
<td>450</td>
</tr>
<tr>
<td>20</td>
<td>10°</td>
<td>750</td>
<td>41°</td>
<td>950</td>
<td>250</td>
<td>52°</td>
</tr>
<tr>
<td>22</td>
<td>35°</td>
<td>700</td>
<td>48°</td>
<td>750</td>
<td>56°</td>
<td>750</td>
</tr>
<tr>
<td>24</td>
<td>21°</td>
<td>500</td>
<td>42°</td>
<td>550</td>
<td>52°</td>
<td>600</td>
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<tr>
<td>26</td>
<td>35°</td>
<td>400</td>
<td>47°</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0°</td>
<td>42°</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7.88 m) (13.57 m) (18.44 m)
NOTE:
1. Rated lifting capacities on this chart show maximum allowable loads with all outriggers and stabilizers properly extended on a firm surface and the crane leveled and mounted on a factory recommended truck. The rated lifting capacities in shaded areas are based on crane strength and others, on its stability.
2. The mass of handling devices such as hook block, slings, etc., must be considered part of the load and must be deducted from the rated lifting capacities.
3. Mass of any accessories attached to the boom or loadline must be deducted from the rated lifting capacities.
4. The operator must reduce loads to allow for such factors as wind, ground conditions, operating speed and the effects of freely suspended loads such as boom deflection.
5. For full capacity 360° around the truck, the chassis requires the front stabilizer and additional counterweight in the underside of the bed.
6. When making lifts at a load radius not shown, use next longer radius to determine allowable capacity. When boom length is between values listed, refer to rated lifting capacities of next longer and next shorter booms for same radius. Lesser of the two rated lifting capacities be used.
7. Max. outriggers extended means, as shown below, both outriggers and both rear stabilizers fully extended to the Max. position are properly jacked up.
   Mid. outriggers extended means, both outriggers extended to the Max. and both rear stabilizers extended to the Min. are properly jacked up, or otherwise, both outriggers extended to the Mid. and both rear stabilizers extended to the Max. or Min. are properly jacked up.
   Min. outriggers extended means, both outriggers extended to the Min. and both rear stabilizers extended to the Max. or Min. are properly jacked up.
8. For boom lengths longer than 14 m., extend outriggers to the Max. or Mid. extended.
   For boom lengths longer than 18.9 m., extend outriggers to the Max. extended.
9. 14 m boom means 1st \( \square \) mark on 2nd boom section side plate is half visible. 18.9 m boom means 2nd \( \square \) mark on 2nd boom section side plate is half visible. 23.8 m boom means 3rd \( \square \) mark on 2nd boom section side plate is half visible. 28.6 m boom means 4th \( \square \) mark on 2nd boom section side plate is half visible.
10. Winch wire rope: diameter \( \times \) length 14 mm \( \times \) 96 m, breaking strength 145 kN.
11. Keep at least 3 wraps of loadline on winch drum.
12. Rated lifting capacities depends on outriggers and rear stabilizers extended width.
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 condition.
TRUCK CHASSIS DATA (TRUCK MOUNT)

Recommended requirements for TM-20110, full capacity 360° around the truck. This mount requires front stabilizer, rear stabilizers, torsion resisting box and additional counterweight in the underside of the bed for full capacity 360° around the truck.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Axle Mass Rating (GAMR), front</td>
<td>approx. 7,200 kg</td>
</tr>
<tr>
<td>Gross Axle Mass Rating (GAMR), rear</td>
<td>approx. 15,400 kg</td>
</tr>
<tr>
<td>Gross Vehicle Mass Rating</td>
<td>approx. 22,600 kg</td>
</tr>
<tr>
<td>Wheelbase (WB)</td>
<td>5,900 to 6,600 mm</td>
</tr>
<tr>
<td>Cab to axle</td>
<td>4,000 to 4,800 mm</td>
</tr>
<tr>
<td>Stability mass, front</td>
<td>4,000 kg Min (*)</td>
</tr>
<tr>
<td>Stability mass, rear</td>
<td>4,500 kg Min (*)</td>
</tr>
<tr>
<td>Frame Section Modulus (SM) under crane, front spring</td>
<td>328 cm³ Min. per rail</td>
</tr>
<tr>
<td>to rear spring</td>
<td></td>
</tr>
<tr>
<td>758 MPa steel</td>
<td></td>
</tr>
<tr>
<td>Frame Section Modulus (SM) at the front stabilizer</td>
<td>35 cm³ Min. per rail</td>
</tr>
<tr>
<td>attachment point, 758 MPa steel</td>
<td></td>
</tr>
<tr>
<td>Frame Section Modulus (SM) over rear stabilizers, 758</td>
<td>213 cm³ Min. per rail</td>
</tr>
<tr>
<td>MPa steel</td>
<td></td>
</tr>
<tr>
<td>PTO torque</td>
<td>Approx. 390 N·m Min.</td>
</tr>
<tr>
<td>PTO revolution</td>
<td>Approx. 550 to 2,400 min⁻¹</td>
</tr>
<tr>
<td>Width for crane mounting</td>
<td>Approx. 1,400 mm Min.</td>
</tr>
<tr>
<td>Frame width (outside)</td>
<td>Approx. 915 mm Max.</td>
</tr>
<tr>
<td>Frame height (ground to frame top)</td>
<td>Approx. 1,060 mm Max.</td>
</tr>
<tr>
<td>(Height of crane mounting base can be changed by</td>
<td>(Height of crane mounting base can</td>
</tr>
<tr>
<td>combination of jack floats and crane bases)</td>
<td>be changed by combination of jack</td>
</tr>
<tr>
<td></td>
<td>floats and crane bases)</td>
</tr>
</tbody>
</table>

(*) Estimated axle scale mass prior to installation of crane, stabilizers and torsion resisting box for ISO stability. Include counterweight.

The complete unit must be installed in accordance with factory requirements and a test performed to determine actual stability and counterweight requirements since individual truck chassis vary.
DIMENSIONAL SPECIFICATIONS