# III UNIVERSAL

## **CRANE SPECIFICATION**

## TADANO TR200M-5 CREVO

## **COMPREHENSIVE LIFTING SOLUTIONS**

We look forward to providing a full heavy lift engineering and crane solution for your next project. Our heavy lift engineers and on site personnel are experienced in managing and organising highly de-manding lift requirements.

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PART OF **MISMITHBRIDGE GROUP** 

## **ROUGH TERRAIN CRANE**

## TR-200M

## JAPANESE SPECIFICATIONS

| OUTLINE                  | SPEC. NO.       |
|--------------------------|-----------------|
| Jib which stores in boom | TR-200M-4-00107 |

**Control No. JA-01** 

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## **TR-200M**

## CRANE SPECIFICATIONS

6part-line)

4part-line)

4part-line)

1part-line)

1part-line)

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#### CRANE CAPACITY

8.5m Boom 20,000kg at 3.5m (7part-line) 14.6m Boom 16,000kg at 3.5m 20.7m Boom 9,000kg at 6.0m 26.8m Boom at 7.0m 6,800kg ( 7.4m Jib 3,000kg at 70 ° Single top 3,000kg

#### MAX.LIFTING HEIGHT

Boom 27.5m Jib 34.6m

#### MAX.WORKING RADIUS

Boom 25.0m

30.0m Jib

**BOOM LENGTH** 

8.5m - 26.8m

**BOOM EXTENSION** 

18.3m

#### **BOOM EXTENSION SPEED** 18.3m/78s

#### JIB LENGTH

7 4m

#### MAIN WINCH SINGLE LINE SPEED

121m/min High range: (4th laver) Low range: 58m/min (4th layer)

#### MAIN WINCH HOOK SPEED

High range: 17.3m/min (7 part-line) Low range: 8.3m/min (7 part-line)

AUXILIARY WINCH SINGLE LINE SPEED 103m/min

(2nd layer)

(2nd layer)

High range: Low range:

#### 50m/min AUXILIARY WINCH HOOK SPEED

High range: 103m/min (1 part-line) Low range: 50m/min (1 part-line)

#### **BOOM ELEVATION ANGLE** 0°-82°

#### **BOOM ELEVATION SPEED** 0 °- 82 %34s

SWING ANGLE

360 ° continue

#### SWING SPEED

3.4rpm

#### WIRE ROPE Main Winch

16mm x 150m (Diameter x Length) 7x7+6xFi(29) Class B ordinary Z twist Spin-resistant wire rope Breaking strength 17.6t Auxiliary Winch

16mm x 80m (Diameter x Length) 7x7+6xFi(29) Class B ordinary Z twist Spin-resistant wire rope Breaking strength 17.6t

#### BOOM

4-section hydraulically telescoping boom of box construction

(stage 2: sequential; stages 3,4: synchronized) **BOOM EXTENSION** 

2 double-acting hydraulic cylinders 1 wire rope type telescoping device

#### JIB

Single stage which stores in the boom Dual offset (0 °- 30 °) type

#### SINGLE TOP

Single sheave. Mounted on main boom head for single line work.

#### HOIST

Driven by hydraulic motor and via planetary gear reducer. With free-fall device. Automatic brake (with foot brake for free-fall device) 2 single winches

#### **BOOM ELEVATION**

1 double-acting hydraulic cylinder

#### SWING

Hydraulic motor driven planetary gear reducer

Swing bearing Swing free/lock changeover type

Hand brake

#### OUTRIGGERS

Fully hydraulic X-type (floats mounted integrally) Slides and jacks each provided with independent operation device. Fully extended width 5.8m Middle extended width 4.7m 3 6m

Minimum extended width MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER 22.6t

#### HYDRAULIC PUMPS

Variable piston pump and gear pump

HYDRAULIC OIL TANK CAPACITY

375 liters

#### SAFETY DEVICES

Automatic moment limiter (AML) With working range limiting function Over-winding cutout device Working area control device Level gauge Hook safety latch Winch drum lock Hydraulic safety valve Telescopic counterbalance valve Elevation counterbalance valve Jack pilot check valve Swing lock

#### EQUIPMENT

Crane cab heater (with defroster) Hydraulic oil temperature indication lamp Oil cooler Winch drum rotation indicator Operation pedals for elevating/telescoping Radio

### CARRIER SPECIFICATIONS

#### ENGINE

#### Model MITSUBISHI 6D14

Type 4-cycle, 6-cylinder, direct-injection, water-cooled diesel engine

(with turbo charger) Piston displacement 6,557cc Max. output 185PS at 2,800rpm

58.0kg·m at 1,600rpm

#### TORQUE CONVERTER

3-element, 1-stage unit (with automatic lock-up mechanism)

#### TRANSMISSION

Power shift type (wet multi-plate clutch) 3 forward and 1 reverse speeds

#### REDUCER

Max. torque

Axle dual-ratio reduction

#### DRIVE

2-wheel drive (4X2) / 4-wheel drive (4X4) selection

#### FRONT AXLE

Full floating type

#### REAR AXLE

Full floating type (with no-spin differential)

#### SUSPENSION

FrontParallel leaf spring typeRearParallel leaf spring type

#### STEERING

Fully hydraulic power steering With reverse steering correction mechanism

#### **BRAKE SYSTEM**

Service Brake Hydro-pneumatic brake

#### Disk brake

Parking Brake

Mechanically operated, internal expanding duo-servo shoe type acting on drum at transmission case rear.

#### Auxiliary Brake

Electro-pneumatic operated exhaust brake Auxiliary braking device for operations

#### FRAME

Welded box-shaped structure

#### **ELECTRIC SYSTEM**

12 V DC. 2 batteries of 24V (120Ah)

#### FUEL TANK CAPACITY

250 liters

#### TIRES

Front 14.00R24 (OR) Rear 14.00R24 (OR)

#### CAB

Two-man type With sun visor and trim Rubber mounted type Fully adjustable seat (with headrest and seat belt) Adjustable handle (tilt, telescoping) Roof windshield lock warning

#### SAFETY DEVICES

Emergency steering device Spring lock device Rear wheel steering lock device Engine over-run alarm Overshift prevention device Parking brake alarm

#### GENERAL DATA

#### DIMENSIONS

Overall length Overall width

Overall height Wheel base Tread Front

Rear WEIGHTS

#### Gross vehicle weight

Total Front Rear

#### PERFORMANCE

Max. traveling speed Gradeability (tan ) Min. turning radius 10,470mm 2,490mm 3,420mm 3,100mm 2,070mm 2,070mm

23,330kg 11,665kg 11,665kg

49km/h 0.6 4.7m (4-wheel steering) 8.0m (2-wheel steering)

## TOTAL RATED LOADS

## (1) With outriggers set

(i)

|       |      | (     | Outriggers fu | Illy extended | l   |   | -360 °- |  |
|-------|------|-------|---------------|---------------|---|---|---------|--|
|       |      |       |               |               | С   | 7.  | 4m      |  |
| B     | 8.5m | 14.6m | 20.7m         | 26.8m         | $\begin{bmatrix} D \\ E(°) \end{bmatrix}$ | 0 °   | 30 °    |  |
| 2.5m  | 20.0 | 16.0  | 9.0           |               | 82  | 3.0   | 2.0     |  |
| 3.0m  | 20.0 | 16.0  | 9.0           |               | 75  | 3.0   | 2.0     |  |
| 3.5m  | 20.0 | 16.0  | 9.0           | 6.8           | 70  | 3.0   | 2.0     |  |
| 4.0m  | 18.5 | 15.5  | 9.0           | 6.8           | 65  | 2.6   | 1.85    |  |
| 4.5m  | 16.5 | 14.3  | 9.0           | 6.8           | 60  | 2.2   | 1.7     |  |
| 5.0m  | 15.0 | 13.2  | 9.0           | 6.8           | 55  | 1.8   | 1.55    |  |
| 5.5m  | 13.7 | 12.2  | 9.0           | 6.8           | 50  | 1.4   | 1.25    |  |
| 6.0m  | 12.5 | 11.4  | 9.0           | 6.8           | 45  | 1.05  | 1.0     |  |
| 6.5m  | 11.5 | 10.6  | 8.5           | 6.8           | 40  | 0.85  | 0.8     |  |
| 7.0m  |      | 9.9   | 8.1           | 6.8           | 35  | 0.7   | 0.65    |  |
| 8.0m  |      | 8.0   | 7.3           | 6.15          | 30  | 0.55  | 0.55    |  |
| 9.0m  |      | 6.5   | 6.5           | 5.55          | 25  | 0.45  |         |  |
| 10.0m |      | 5.45  | 5.65          | 5.05          | A-Boom                                    | A - Doom longth                                 |         |  |
| 11.0m |      | 4.55  | 4.8           | 4.65          | B= Worki                                  | no radius                                       |         |  |
| 12.0m |      | 3.8   | 4.15          | 4.25          | C = Jib len                               | C= Jib length<br>D= Jib offset<br>E= Boom angle |         |  |
| 13.0m |      |       | 3.6           | 3.8           | D= Jib off                                |   |         |  |
| 14.0m |      |       | 3.15          | 3.25          | E= Boom                                   |   |         |  |
| 15.0m |      |       | 2.75          | 2.8           | 1   | 0   |         |  |
| 16.0m |      |       | 2.4           | 2.5           | 1   |   |         |  |
| 17.0m |      |       | 2.1           | 2.25          | 1   |   |         |  |
| 18.0m |      |       | 1.85          | 2.0           |   |   |         |  |
| 19.0m |      |       |               | 1.75          | 1   |   |         |  |
| 20.0m |      |       |               | 1.55          | 1   |   |         |  |
| 22.0m |      |       |               | 1.2           | 1   |   |         |  |
| 24.0m |      |       |               | 0.9           | 1   |   |         |  |
| 25.0m |      |       |               | 0.8           | 1   |   |         |  |

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Unit:ton

| Outriggers middle extended – |      |       |       |       |   | -360 °-                             |      |  |
|------------------------------|------|-------|-------|-------|---|-------------------------------------|------|--|
| $\overline{\mathbf{N}}$      |      |       |       |       | С   | 7.4                                 | 4m   |  |
| B                            | 8.5m | 14.6m | 20.7m | 26.8m | $ \begin{bmatrix}     D \\     E(°) \end{bmatrix} $ | 0 °                                 | 30 ° |  |
| 2.5m                         | 20.0 | 16.0  | 9.0   |       | 82  | 3.0                                 | 2.0  |  |
| 3.0m                         | 20.0 | 16.0  | 9.0   |       | 75  | 3.0                                 | 2.0  |  |
| 3.5m                         | 20.0 | 16.0  | 9.0   | 6.8   | 70  | 3.0                                 | 2.0  |  |
| 4.0m                         | 18.5 | 15.5  | 9.0   | 6.8   | 65  | 2.3                                 | 1.85 |  |
| 4.5m                         | 16.5 | 14.3  | 9.0   | 6.8   | 60  | 1.65                                | 1.4  |  |
| 5.0m                         | 15.0 | 13.2  | 9.0   | 6.8   | 55  | 1.2                                 | 1.05 |  |
| 5.5m                         | 12.5 | 11.85 | 9.0   | 6.8   | 50  | 0.9                                 | 0.8  |  |
| 6.0m                         | 10.6 | 10.1  | 9.0   | 6.8   | 45  | 0.65                                | 0.6  |  |
| 6.5m                         | 9.0  | 8.7   | 8.5   | 6.8   | 40  | 0.45                                | 0.4  |  |
| 7.0m                         |      | 7.6   | 8.0   | 6.8   |   |                                     |      |  |
| 8.0m                         |      | 5.85  | 6.4   | 6.15  |   |                                     |      |  |
| 9.0m                         |      | 4.7   | 5.2   | 5.35  |   |                                     |      |  |
| 10.0m                        |      | 3.85  | 4.3   | 4.4   | A-Boom  | A= Boom length<br>B= Working radius |      |  |
| 11.0m                        |      | 3.15  | 3.55  | 3.75  | B= Worki  |                                     |      |  |
| 12.0m                        |      | 2.6   | 3.0   | 3.15  | C = Jib len   |                                     |      |  |
| 13.0m                        |      |       | 2.5   | 2.7   | D= Jib offset<br>E= Boom angle                      |                                     |      |  |
| 14.0m                        |      |       | 2.1   | 2.3   |   |                                     |      |  |
| 15.0m                        |      |       | 1.8   | 2.0   |   |                                     |      |  |
| 16.0m                        |      |       | 1.5   | 1.7   |   |                                     |      |  |
| 17.0m                        |      |       | 1.3   | 1.45  |   |                                     |      |  |
| 18.0m                        |      |       | 1.1   | 1.2   |   |                                     |      |  |
| 19.0m                        |      |       |       | 1.05  |   |                                     |      |  |
| 20.0m                        |      |       |       | 0.9   |   |                                     |      |  |
| 22.0m                        |      |       |       | 0.6   |   |                                     |      |  |
| 24.0m                        |      |       |       | 0.4   |   |                                     |      |  |
|                              |      |       |       |       |   |                                     |      |  |

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#### Unit:ton

| Outriggers minimum extended -36 |      |       |       |       |   | -360 °-         |      |  |
|---------------------------------|------|-------|-------|-------|---|-----------------|------|--|
|                                 |      |       |       |       | С   | 7.              | 4m   |  |
| B                               | 8.5m | 14.6m | 20.7m | 26.8m | $ \begin{array}{c}     D \\     E(^{\circ}) \end{array} $ | 0 °             | 30 ° |  |
| 2.5m                            | 20.0 | 16.0  | 9.0   |       | 82  | 3.0             | 2.0  |  |
| 3.0m                            | 20.0 | 16.0  | 9.0   |       | 75  | 3.0             | 2.0  |  |
| 3.5m                            | 18.8 | 16.0  | 9.0   | 6.8   | 73  | 3.0             | 2.0  |  |
| 4.0m                            | 14.5 | 13.6  | 9.0   | 6.8   | 72  | 2.8             | 2.0  |  |
| 4.5m                            | 11.5 | 11.1  | 9.0   | 6.8   | 70  | 2.3             | 1.75 |  |
| 5.0m                            | 9.5  | 9.1   | 9.0   | 6.8   | 65  | 1.45            | 1.2  |  |
| 5.5m                            | 8.0  | 7.65  | 8.1   | 6.8   | 60  | 0.95            | 0.8  |  |
| 6.0m                            | 6.9  | 6.55  | 6.95  | 6.8   | 55  | 0.55            | 0.5  |  |
| 6.5m                            | 6.0  | 5.7   | 6.1   | 6.3   |   |                 |      |  |
| 7.0m                            |      | 5.0   | 5.3   | 5.55  |   |                 |      |  |
| 8.0m                            |      | 3.8   | 4.2   | 4.35  |   |                 |      |  |
| 9.0m                            |      | 2.95  | 3.35  | 3.55  |   |                 |      |  |
| 10.0m                           |      | 2.35  | 2.75  | 2.9   | A-Boom  | A - Boom length |      |  |
| 11.0m                           |      | 1.85  | 2.25  | 2.4   | B= Worki  | ng radius       |      |  |
| 12.0m                           |      | 1.45  | 1.8   | 2.0   | C= Jib length<br>D= Jib offset                            |                 |      |  |
| 13.0m                           |      |       | 1.5   | 1.65  |   |                 |      |  |
| 14.0m                           |      |       | 1.25  | 1.35  | E= Boom   | angle           |      |  |
| 15.0m                           |      |       | 1.0   | 1.1   |   |                 |      |  |
| 16.0m                           |      |       | 0.8   | 0.9   |   |                 |      |  |
| 17.0m                           |      |       | 0.6   | 0.75  |   |                 |      |  |
| 18.0m                           |      |       | 0.4   | 0.6   |   |                 |      |  |
| 19.0m                           |      |       |       | 0.45  |   |                 |      |  |
|                                 |      |       |       |       |   |                 |      |  |
|                                 |      |       |       |       |   |                 |      |  |
|                                 |      |       |       |       |   |                 |      |  |
|                                 |      |       |       |       |   |                 |      |  |

#### PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE EXTENDED:

- 1. The total rated loads shown are for the case where the outriggers are set horizontally on firm level ground.
- The values above the bold lines are based on the crane strength while those below are based on the crane stability. 2. The weights of the slings and hooks (main hook: 220kg, auxiliary hook: 60kg) are included in the total rated loads
- shown.
- 3. The total rated load is based on the actual working radii including the deflection of the boom.
- 4. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 2.9t for the main winch and 3.0t for the auxiliary winch.

| А | 8.5m | 14.6m | 20.7m | 26.8m | J |
|---|------|-------|-------|-------|---|
| Н | 7    | 6     | 4     | 4     | 1 |

 $A=Boom \ length \quad H= \ No. \ of \ part-lines$ 

J= Jib/Single top

- 5. As a rule, free-fall operation should be performed only when lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load must be kept below 1/5th of the total rated load and sudden braking operations must be avoided.
- The total rated load for the single top shall be the value obtained by subtracting 160kg from the total rated load of the boom and must not exceed 3.0t.

## (2) Without outriggers

|      |      |            |       |      |       |      |      |                                       |      |            | UI   | 11.1011 |
|------|------|------------|-------|------|-------|------|------|---------------------------------------|------|------------|------|---------|
|      |      | Stationary |       |      |       |      |      | Creep (travelling at 1.6km/h or less) |      |            |      | ;)      |
| В    | 8.5m | Boom       | 14.6m | Boom | 20.7m | Boom | 8.5m | 8.5m Boom 14.6m Boom                  |      | 20.7m Boom |      |         |
| (m)  | F    | G          | F     | G    | F     | G    | F    | G                                     | F    | G          | F    | G       |
| 3.0  | 12.2 | 8.2        | 8.7   | 7.2  |       |      | 8.5  | 6.5                                   | 6.7  | 5.0        |      |         |
| 3.5  | 10.7 | 7.2        | 8.7   | 7.0  | 6.2   | 4.5  | 8.3  | 5.6                                   | 6.7  | 5.0        | 5.2  | 3.7     |
| 4.0  | 10.2 | 6.0        | 8.7   | 5.6  | 6.2   | 4.5  | 7.5  | 4.7                                   | 6.7  | 4.6        | 5.2  | 3.7     |
| 4.5  | 9.1  | 4.9        | 8.0   | 4.5  | 6.2   | 4.5  | 6.8  | 3.7                                   | 6.3  | 3.7        | 5.2  | 3.7     |
| 5.0  | 8.0  | 4.0        | 7.2   | 3.75 | 6.2   | 4.1  | 6.1  | 3.1                                   | 5.8  | 3.0        | 5.2  | 3.3     |
| 5.5  | 6.9  | 3.4        | 6.4   | 3.2  | 5.7   | 3.5  | 5.4  | 2.6                                   | 5.2  | 2.5        | 4.8  | 2.8     |
| 6.0  | 6.1  | 2.8        | 5.65  | 2.7  | 5.3   | 3.0  | 4.9  | 2.2                                   | 4.6  | 2.1        | 4.4  | 2.3     |
| 6.5  | 5.2  | 2.4        | 4.9   | 2.2  | 4.85  | 2.55 | 4.2  | 1.8                                   | 4.05 | 1.7        | 4.0  | 2.0     |
| 7.0  |      |            | 4.3   | 1.85 | 4.5   | 2.2  |      |                                       | 3.6  | 1.4        | 3.7  | 1.7     |
| 8.0  |      |            | 3.3   | 1.25 | 3.7   | 1.65 |      |                                       | 2.75 | 0.9        | 3.1  | 1.2     |
| 9.0  |      |            | 2.55  | 0.8  | 3.0   | 1.2  |      |                                       | 2.15 | 0.6        | 2.5  | 0.9     |
| 10.0 |      |            | 2.05  | 0.4  | 2.5   | 0.85 |      |                                       | 1.75 |            | 2.05 | 0.6     |
| 11.0 |      |            | 1.6   |      | 2.0   | 0.55 |      |                                       | 1.35 |            | 1.65 |         |
| 12.0 |      |            | 1.25  |      | 1.6   |      |      |                                       | 1.05 |            | 1.3  |         |
| 13.0 |      |            |       |      | 1.3   |      |      |                                       |      |            | 1.05 |         |
| 14.0 |      |            |       |      | 1.05  |      |      |                                       |      |            | 0.85 |         |
| 15.0 |      |            |       |      | 0.85  |      |      |                                       |      |            | 0.65 |         |
| 16.0 |      |            |       |      | 0.65  |      |      |                                       |      |            | 0.5  |         |
| 17.0 |      |            |       |      | 0.45  |      |      |                                       |      |            |      |         |

Unit:ton

B= Working radius F= Front G= 360 °

#### PRECAUTIONS TO BE TAKEN WHEN THE OUTRIGGERS ARE NOT MOUNTED:

- The total rated loads shown are for the case where the crane is set on firm level ground. The values above the bold lines are based on the crane strength while those below are based on the crane stability. The foundation, working conditions, etc. should be taken into consideration adequately when using the crane for actual work. (Tire air pressure: 9.00kg/cm<sup>2</sup>)
- 2. The weights of the slings and hooks are included in the total rated loads shown.
- 3 The total rated loads are based on the actual working radii into which are included the deflection of the boom and the tires.
- 4. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 2.9t (for the main winch).

| А | 8.5m | 14.6m | 20.7m | Single top |
|---|------|-------|-------|------------|
| Н | 7    | 6     | 4     | 1          |

A= Boom length H= No. of part-lines

- 5. The total rated load for the single top shall be the value obtained by subtracting 120kg from the total rated load of the boom and must not exceed 3.0t.
- 6. Free-fall operations should not be performed without outriggers.
- 7. The 26.8m boom and the jib should not be used without the outriggers.
- The boom must be kept inside a 2° area (1° each to the left and right) over front of the carrier when performing "Over front" crane operations without the outriggers.

Approx.2 °



9. When creeping while hoisting a load, the swing brake should be applied, the load should be kept as close to the ground as possible but not touching the ground and the speed should be kept at 1.6km/h or less. In particular, any abrupt steering, starting or braking must be avoided.

10. Crane operations should not be performed when creeping while hoisting a load.

## WORKING RADIUS - LIFTING HEIGHT



#### NOTES:

The deflection of the boom is not incorporated in the figure above.
 The figure above is for the case where the outriggers are fully extended (360 °).









## MEMO