

ROUGH TERRAIN CRANE

TR-500M

JAPANESE SPECIFICATIONS

TR

OUTLINE	SPEC. NO.
6-section Boom, 2-staged Power Tilt Jib H-type Outrigger	TR-500M-3-00113

Control No. JA-02

TR-500M

CRANE SPECIFICATIONS

CRANE CAPACITY

9.7m Boom	50,000kg	at 3.0m	(12part-line)
16.0m Boom	30,000kg	at 4.5m	(8part-line)
22.3m Boom	20,000kg	at 5.0m	(5part-line)
28.6m Boom	12,000kg	at 8.0m	(4part-line)
34.9m Boom	11,000kg	at 7.0m	(4part-line)
38.05m Boom	8,500kg	at 9.0m	(4part-line)
41.2m Boom	7,000kg	at 10.0m	(4part-line)
7.8m Jib	3,500kg	at 76°	(1part-line)
12.5m Jib	2,500kg	at 76°	(1part-line)
Single top	4,000kg		(1part-line)

MAX.LIFTING HEIGHT

Boom	41.6m
Jib	54.6m

MAX.WORKING RADIUS

Boom	34.0m
Jib	38.1m

BOOM LENGTH

9.7m - 41.2m

BOOM EXTENSION

31.5m

BOOM EXTENSION SPEED

31.5m/122s

JIB LENGTH

7.8m, 12.5m

MAIN WINCH SINGLE LINE WINDING SPEED

124m/min (5th layer)

MAIN WINCH HOOK SPEED

10.3m/min (12 part-line)

AUXILIARY WINCH SINGLE LINE WINDING SPEED

124m/min (5th layer)

AUXILIARY WINCH HOOK SPEED

124m/min (1 part-line)

BOOM ELEVATION ANGLE

0° - 83°

BOOM ELEVATION SPEED

0° - 83°/65s

SWING ANGLE

360° continue

SWING SPEED

2.1rpm

WIRE ROPE

Main Winch

18mm x 224m (Diameter x Length)
Spin-resistant wire rope

Auxiliary Winch

18mm x 120m (Diameter x Length)
Spin-resistant wire rope

BOOM

6-section hydraulically telescoping boom of hexagonal box construction
(stages 2,3: synchronized; stages 4,5,6: synchronized)

BOOM EXTENSION

3 double-acting hydraulic cylinders
2 wire rope type telescoping devices

JIB

Quick-turn type (2-staged type which stores alongside below the base boom section and extendible from under the boom (with 2nd stage being a pull-out type))
Hydraulic non-stage offset (5° - 45°) type

SINGLE TOP

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

HOIST

Driven by hydraulic motor and via bevel gear reducer. With free-fall device.

Automatic brake (with foot brake for free-fall device)
2 single winches

With flow regulator valve with pressure compensation

BOOM ELEVATION

2 double-acting hydraulic cylinders

With flow regulator valve with pressure compensation

SWING

Hydraulic motor driven planetary gear reducer

Swing bearing

High/Low speed selection

Swing free/lock changeover type

Negative brake

OUTRIGGERS

Fully hydraulic H-type (floats mounted integrally)

Slides and jacks each provided with independent operation device.

Fully extended width 7.3m

Middle extended width 6.7m, 5.5m, 4.0m

Minimum extended width 2.54m

OPERATION METHOD

Hydraulic pilot valve operation

MAX. VERTICAL LOAD CAPACITY OF OUTRIGGER

38.8t

POWER TAKE-OFF

PTO wet multi-plate clutch

HYDRAULIC PUMPS

2 variable piston pumps

2 gear pumps

HYDRAULIC OIL TANK CAPACITY

570 liters

SAFETY DEVICES

Automatic moment limiter(AML)

Multi-display indication

Swing automatic stop device

Over-winding cutout device

Working area control device

Free-fall interlock device

Outrigger extension width detector

Winch drum lock

Level gauge

Hook safety latch

Hydraulic safety valve

Telescopic counterbalance valve

Elevation counterbalance valve

Power tilt counterbalance valve

Jack pilot check valve

Swing lock

EQUIPMENT

Air-conditioner with dehumidifier

Hydraulic oil temperature indication lamp

Radio

Oil cooler

Visual-type winch drum rotation indicator

Operation pedals

ISO arrangement: for telescoping/auxiliary hoisting

TADANO arrangement: for elevating/telescoping

Television (option)

CARRIER SPECIFICATIONS

ENGINE

Model NISSAN PF6T
(with turbo charger)
Type 4-cycle, 6-cylinder, direct-injection, water-cooled diesel engine
Piston displacement 12,503cc
Max. output 257kW (350PS) at 2,100rpm
Max. torque 1,334N·m (136kgf·m) at 1,400rpm

TORQUE CONVERTER

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

TRANSMISSION

Automatic and manual transmission
Power shift type (wet multi-plate clutch)
4 forward and 1 reverse speeds (with Hi/Low settings)

REDUCER

Axle dual-ratio reduction

DRIVE

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

FRONT AXLE

Full floating type

REAR AXLE

Full floating type

SUSPENSION

Front

Hydro-pneumatic suspension (with hydraulic lock cylinder)

Rear

Hydro-pneumatic suspension (with hydraulic lock cylinder)

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

Flow type retarder

Electro-pneumatic operated exhaust brake

Auxiliary braking device for operations

FRAME

Welded box-shaped structure

ELECTRIC SYSTEM

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

FUEL TANK CAPACITY

300 liters

TIRES

Front 505/95R25 183E ROAD

Rear 505/95R25 183E ROAD

CAB

One-man type

With interior equipment

Liquid filled rubber mounted type

Fully adjustable foldable seat

(with headrest and seat belt)

Adjustable handle (tilt, telescoping)

Intermittent type windshield/roof wiper (with washer)

Power window

Side visor

SAFETY DEVICES

Emergency steering device

Suspension lock device

Rear wheel steering lock device

Engine over-run alarm

Overshift prevention device

Parking brake alarm

Powered mirror for right side of boom

Monitor TV for left side of boom

EQUIPMENT

Centralized oiling device

GENERAL DATA

DIMENSIONS

Overall length	11,850mm
Overall width	2,960mm
Overall height	3,710mm
Wheel base	4,850mm
Tread Front	2,380mm
Rear	2,380mm

WEIGHTS

Gross vehicle weight	
Total	37,795kg
Front	18,895kg
Rear	18,900kg

PERFORMANCE

Max. traveling speed	49km/h
Gradeability (tan θ)	0.57
Min. turning radius	6.3m (4-wheel steering)
	10.8m (2-wheel steering)

Note:

This crane is covered by Class D Conditions under the Basic Running Conditions of the Road Traffic Act.

TOTAL RATED LOADS

(1) With outriggers set
[BOOM]

Unit: ton

Outriggers fully extended (7.3m)								-360°-	
B \ A	9.7m	16.0m	22.3m	28.6m	34.9m	38.05m	41.2m		
2.5m	50.0	30.0	20.0	12.0					
3.0m	50.0	30.0	20.0	12.0					
3.5m	45.0	30.0	20.0	12.0	11.0				
4.0m	39.5	30.0	20.0	12.0	11.0	8.5			
4.5m	35.5	30.0	20.0	12.0	11.0	8.5			
5.0m	32.0	29.0	20.0	12.0	11.0	8.5	7.0		
5.5m	29.0	27.0	19.8	12.0	11.0	8.5	7.0		
6.0m	26.5	24.6	18.7	12.0	11.0	8.5	7.0		
6.5m	24.0	22.7	17.6	12.0	11.0	8.5	7.0		
7.0m	22.0	20.9	16.7	12.0	11.0	8.5	7.0		
8.0m		17.8	15.0	12.0	10.1	8.5	7.0		
9.0m		14.6	13.4	11.5	9.4	8.5	7.0		
10.0m		12.0	11.3	10.5	8.7	7.9	7.0		
11.0m		10.0	9.4	9.5	8.1	7.35	6.5		
12.0m		8.3	8.0	8.6	7.5	6.85	6.0		
13.0m		7.1	6.8	7.4	7.0	6.4	5.6		
14.0m			5.9	6.6	6.5	6.0	5.3		
16.0m			4.2	5.0	5.4	5.3	4.7		
18.0m			3.0	3.8	4.3	4.5	4.15		
20.0m				2.95	3.4	3.55	3.6		
22.0m				2.3	2.7	2.85	3.0		
24.0m				1.65	2.1	2.3	2.4		
26.0m					1.65	1.85	1.95		
28.0m					1.25	1.4	1.55		
30.0m					0.9	1.0	1.2		
32.0m						0.7	0.9		
34.0m							0.6		
a (°)	0~83					16~83	27~83		
F	50t hook			25t hook					

A= Boom length B= Working radius F= Standard hook
a= Boom angle range (for the unladen condition)

[BOOM]

Unit:ton

		Outriggers middle extended (6.7m)						-Over sides-	
B \ A		9.7m	16.0m	22.3m	28.6m	34.9m	38.05m	41.2m	
2.5m		50.0	30.0	20.0	12.0				
3.0m		50.0	30.0	20.0	12.0				
3.5m		43.0	30.0	20.0	12.0	11.0			
4.0m		38.0	30.0	20.0	12.0	11.0	8.5		
4.5m		34.0	30.0	20.0	12.0	11.0	8.5		
5.0m		30.5	29.0	20.0	12.0	11.0	8.5	7.0	
5.5m		27.5	27.0	19.8	12.0	11.0	8.5	7.0	
6.0m		24.2	24.0	18.7	12.0	11.0	8.5	7.0	
6.5m		21.4	21.2	17.6	12.0	11.0	8.5	7.0	
7.0m		19.0	18.9	16.7	12.0	11.0	8.5	7.0	
8.0m			15.7	15.0	12.0	10.1	8.5	7.0	
9.0m			12.8	12.3	11.5	9.4	8.5	7.0	
10.0m			10.4	9.9	10.5	8.7	7.9	7.0	
11.0m			8.5	8.2	9.1	8.1	7.35	6.5	
12.0m			7.1	6.85	7.75	7.5	6.85	6.0	
13.0m			6.1	5.7	6.7	7.0	6.4	5.6	
14.0m				4.8	5.8	6.3	6.0	5.3	
16.0m				3.4	4.3	4.8	5.0	4.7	
18.0m				2.3	3.2	3.75	3.9	4.0	
20.0m					2.35	2.9	3.1	3.25	
22.0m					1.7	2.2	2.4	2.6	
24.0m					1.2	1.65	1.8	2.0	
26.0m						1.2	1.4	1.55	
28.0m						0.8	1.0	1.1	
30.0m						0.5	0.7	0.8	
32.0m								0.5	
a (°)		0~83				23~83	27~83	36~83	
F		50t hook		25t hook					

A= Boom length B= Working radius F= Standard hook
a= Boom angle range (for the unladen condition)

[BOOM]

Unit:ton

		Outriggers middle extended (5.5m)					-Over sides-	
A \ B		9.7m	16.0m	22.3m	28.6m	34.9m	38.05m	41.2m
2.5m		45.0	30.0	20.0	12.0			
3.0m		45.0	30.0	20.0	12.0			
3.5m		41.0	30.0	20.0	12.0	11.0		
4.0m		36.8	30.0	20.0	12.0	11.0	8.5	
4.5m		33.2	30.0	20.0	12.0	11.0	8.5	
5.0m		30.2	27.0	20.0	12.0	11.0	8.5	7.0
5.5m		25.2	24.0	19.8	12.0	11.0	8.5	7.0
6.0m		21.0	20.7	18.7	12.0	11.0	8.5	7.0
6.5m		18.2	18.0	17.0	12.0	11.0	8.5	7.0
7.0m		15.5	15.2	15.1	12.0	11.0	8.5	7.0
8.0m			11.9	11.6	12.0	10.1	8.5	7.0
9.0m			9.5	9.15	10.2	9.4	8.5	7.0
10.0m			7.65	7.35	8.35	8.4	7.9	7.0
11.0m			6.25	6.0	7.0	7.3	7.35	6.5
12.0m			5.15	4.9	5.85	6.3	6.3	6.0
13.0m			4.2	4.0	5.0	5.5	5.5	5.6
14.0m				3.25	4.2	4.75	4.8	5.0
16.0m				2.05	3.0	3.55	3.6	3.8
18.0m				1.05	2.1	2.65	2.7	2.9
20.0m					1.35	1.95	2.05	2.25
22.0m					0.7	1.3	1.5	1.7
24.0m						0.8	1.0	1.2
26.0m							0.6	0.8
a (°)		0~83			24~83	37~83	44~83	49~83
F		50t hook		25t hook				

A= Boom length B= Working radius F= Standard hook
a= Boom angle range (for the unladen condition)

[BOOM]

Unit: ton

		Outriggers middle extended (4.0m)					-Over sides-	
B \ A	9.7m	16.0m	22.3m	28.6m	34.9m	38.05m	41.2m	
2.5m	40.0	30.0	20.0	12.0				
3.0m	40.0	30.0	20.0	12.0				
3.5m	33.4	30.0	20.0	12.0	11.0			
4.0m	26.5	27.0	20.0	12.0	11.0	8.5		
4.5m	21.0	21.5	20.0	12.0	11.0	8.5		
5.0m	17.4	17.4	17.0	12.0	11.0	8.5	7.0	
5.5m	14.6	14.5	14.2	12.0	11.0	8.5	7.0	
6.0m	12.5	12.2	12.0	12.0	11.0	8.5	7.0	
6.5m	10.5	10.5	10.4	11.3	10.3	8.5	7.0	
7.0m	9.0	9.1	9.0	10.0	9.5	8.5	7.0	
8.0m		6.9	6.8	7.8	8.0	8.0	7.0	
9.0m		5.4	5.25	6.2	6.65	6.7	6.5	
10.0m		4.3	4.1	5.0	5.6	5.7	5.9	
11.0m		3.4	3.15	4.05	4.65	4.75	5.0	
12.0m		2.6	2.45	3.3	3.85	4.0	4.2	
13.0m		1.85	1.75	2.7	3.2	3.35	3.55	
14.0m			1.15	2.15	2.65	2.85	3.0	
16.0m				1.2	1.8	1.95	2.1	
18.0m					1.1	1.3	1.45	
20.0m						0.75	0.95	
a (°)	0~83		38~83	47~83	53~83	56~83	59~83	
F	50t hook				25t hook			

A= Boom length B= Working radius F= Standard hook
a= Boom angle range (for the unladen condition)

