

TRUCK CRANE

TG-1000R

TG

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL W-KG520RN	6-section Boom, 3-stage Jib	TG-1000R-1-10201

Control No. JA-01

TG-1000R

CRANE SPECIFICATIONS

CRANE CAPACITY

11.4m	Boom	100,000kg	at 3.0m	(20 part-line)
17.0m	Boom	50,000kg	at 5.5m	(10 part-line)
22.5m	Boom	40,000kg	at 7.5m	(8 part-line)
28.1m	Boom	32,000kg	at 6.5m	(7 part-line)
33.6m	Boom	25,000kg	at 8.0m	(5 part-line)
41.0m	Boom	16,500kg	at 11.0m	(4 part-line)
48.4m	Boom	12,000kg	at 12.0m	(4 part-line)
9.8m	Jib	5,500kg	at 75°	(1 part-line)
15.4m	Jib	3,500kg	at 73°	(1 part-line)
21.0m	Jib	2,500kg	at 78°	(1 part-line)
Single top		5,500kg		(1 part-line)

MAX. LIFTING HEIGHT

Boom	48.5m
Jib	69.5m

MAX. WORKING RADIUS

Boom	42.0m
Jib	51.5m

BOOM LENGTH

11.4m - 48.4m

BOOM EXTENSION

37m

BOOM EXTENSION SPEED

37m / 130s

JIB LENGTH

9.8m - 21.0m

MAIN WINCH SINGLE LINE SPEED

High range:	100m/min	(4th layer)
Low range:	50m/min	(4th layer)

MAIN WINCH HOOK SPEED

High range:	5m/min	(20 part-line)
Low range:	2.5m/min	(20 part-line)

AUXILIARY WINCH SINGLE LINE SPEED

High range:	110m/min	(2nd layer)
Low range:	55m/min	(2nd layer)

AUXILIARY WINCH HOOK SPEED

High range:	110m/min	(1 part-line)
Low range:	55m/min	(1 part-line)

BOOM ELEVATION ANGLE

-1° - 82°

BOOM ELEVATION SPEED

-1° - 82° / 66s

SWING ANGLE

360° continue

SWING SPEED

1.8 rpm

WIRE ROPE

Main Winch

20mm × 260m (Diameter×Length)

7×7+6×WS(31)

Spin-resistant wire rope

Auxiliary Winch

20mm × 150m (Diameter×Length)

7×7+6×WS(31)

HOOK

100t hook (20 part-line)

50t hook (10 part-line)

5.5t hook (1 part-line)

BOOM

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

BOOM EXTENSION

4 double-acting hydraulic cylinder

JIB

3-staged swingaround boom extensions.

Hydraulically synchronized telescoping type

Hydraulic non-stage offset (5°-45°) type

SINGLE TOP

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

HOIST

Main Winch

Driven by hydraulic motor and via planetary gear reducer

With free-fall device

Automatic brake

(With foot brake for free-fall operation)

Auxiliary Winch

Driven by hydraulic motor and via bevel gear speed reducer

Automatic brake

BOOM ELEVATION

2 double-acting hydraulic cylinders

SWING

Hydraulic motor driven planetary gear reducer

Swing bearing

Manual switch type brake

Swing free/lock changeover type

OUTRIGGERS

Fully hydraulic H-type

Slides and jacks each provided with independent operation device.

Full extended width 8.2m

Middle extended width 7.2m, 5.4m

With extension width detector

FRONT JACK

Hydraulic operated type

With grounding detector

REAR JACK

Hydraulic type (with cylinder for extension)

With grounding detector

Individually operated type

MAX. OUTRIGGER LOAD

83t

ENGINE FOR CRANE

Model MITSUBISHI 6D16T

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

Piston Displacement 7,545cc

Max. Output 185PS at 2,100rpm

Max. Torque 70.0kg·m at 1,400rpm

HYDRAULIC PUMPS

2 high pressure variable piston pumps and 1 high pressure gear pump

1 high pressure gear pump

HYDRAULIC OIL TANK CAPACITY

985 liters

SAFETY DEVICES

Automatic moment limiter (AML)

With working range limiting function

Automatic outrigger extension width detector

Automatic rear jack grounding detector

Automatic front jack grounding detector

Automatic weight combination detector

Working area control device

Over-winding cutout

Level gauge

Hook safety latch

Cable follower

Winch drum lock

Winch drum rotation indicator

Hydraulic safety valve

Telescopic counterbalance valve

Elevation counterbalance valve

Jack pilot check valve

Front jack over load alarm

EQUIPMENTS

Crane cab heater

Oil cooler

Boom angle indicator

Counterweight dismount device

Boom dismount device

Radio

Fan

Jib extending device

OPTIONAL EQUIPMENT

Crane cab cooler

CARRIER SPECIFICATIONS

MANUFACTURER

NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL

W-KG520RN

ENGINE

Model RF8

Type 4-cycle V8-cylinder, direct-injection, water-cooled diesel engine

Piston displacement 16,991cc

Max. output 340PS at 2,200rpm

Max. torque 120kg·m at 1,400rpm

CLUTCH

Dry single-plate coil spring type

TRANSMISSION

7-forward and 1-reverse speeds

Constant-mesh gear (2nd-7th gears synchromeshed)

REDUCER

Hypoid gear type (1st speed reduction)

Planetary gear (2nd speed reduction)

FRONT AXLE

Reverse-elliot type

REAR AXLE

Full floating, cast torque rods

SUSPENSION

Front Laminated leaf spring type

Rear Equalizer and torque rods

STEERING

Recirculating ball screw type with linkage power assistance

BRAKE SYSTEM

Service Brake

Foot operated full air brake on all wheels, dual air line system, internal expanding leading and trailing shoe type.

Parking Brake

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

Auxiliary Brake

Electro-pneumatic operated exhaust brake.

Emergency

Spring brake, acting on 4 rear wheels

ELECTRIC SYSTEM

24 V DC. 2 batteries of 115F51

FUEL TANK CAPACITY

300 liters

CAB

Two-man type

TIRES

Front 14.00-24-24PR

Rear 14.00-20-20PR

STANDARD EQUIPMENTS

Car heater

Car radio

Car cooler

GENERAL DATA

DIMENSIONS (CARRIER ONLY)

Overall length 10,730mm

Overall width 3,000mm

Overall height 2,780mm

Wheel base 1,500mm + 3,300mm + 1,400mm = 6,200mm

Tread Front 2,480mm

Rear 2,150mm

WEIGHTS (CARRIER ONLY)

Gross vehicle weight

Total 30,070kg

Front 11,430kg

Rear 18,640kg

PERFORMANCE (CARRIER ONLY)

Max. traveling speed 60km/h

Gradeability (tan θ) 0.42

Min. turning radius 9.8m

TOTAL RATED LOADS

**[BOOM]
Performance a**

Unit : ton

A \ B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	100.0	50.0	40.0				
3.5	90.0	50.0	40.0				
4.0	79.0	50.0	40.0	32.0			
4.5	70.0	50.0	40.0	32.0			
5.0	63.0	50.0	40.0	32.0	25.0		
5.5	56.0	50.0	40.0	32.0	25.0		
6.0	52.0	48.5	40.0	32.0	25.0	16.5	
6.5	48.0	46.2	40.0	32.0	25.0	16.5	
7.0	44.0	44.5	40.0	30.5	25.0	16.5	12.0
7.5	40.5	41.0	40.0	28.7	25.0	16.5	12.0
8.0	38.0	38.5	38.5	27.5	25.0	16.5	12.0
9.0	33.0	33.5	33.5	25.0	23.0	16.5	12.0
10.0		29.5	29.5	23.0	21.0	16.5	12.0
11.0		26.0	26.0	21.0	19.1	16.5	12.0
12.0		23.0	23.0	19.0	17.6	16.1	12.0
14.0		17.0	18.0	16.0	14.9	13.8	11.7
16.0			14.1	13.5	12.8	12.0	10.4
18.0			11.1	11.1	10.8	10.5	9.4
20.0			8.8	8.8	8.6	9.2	8.4
22.0				7.0	7.0	8.0	7.4
24.0				5.6	5.5	7.0	6.6
26.0				4.5	4.3	6.0	5.9
28.0					3.3	4.9	5.2
30.0					2.5	3.9	4.6
32.0						3.1	4.0
34.0						2.3	3.2
36.0						1.7	2.6
38.0						1.1	2.0
40.0							1.5
42.0							1.0

A = Boom length B = Working radius

[BOOM]
Performance b

Unit : ton

A B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	100.0	50.0	40.0				
3.5	86.0	50.0	40.0				
4.0	75.0	50.0	40.0	32.0			
4.5	67.0	50.0	40.0	32.0			
5.0	60.0	50.0	40.0	32.0	25.0		
5.5	54.0	50.0	40.0	32.0	25.0		
6.0	50.0	48.5	40.0	32.0	25.0	16.5	
6.5	46.0	45.0	40.0	32.0	25.0	16.5	
7.0	42.0	42.0	40.0	30.5	25.0	16.5	12.0
7.5	38.5	38.5	38.0	28.7	25.0	16.5	12.0
8.0	36.0	36.0	36.0	27.5	25.0	16.5	12.0
9.0	31.0	31.5	31.5	25.0	23.0	16.5	12.0
10.0		27.5	27.5	23.0	21.0	16.5	12.0
11.0		23.5	23.5	21.0	19.1	16.5	12.0
12.0		20.2	20.5	19.0	17.6	16.1	12.0
14.0		14.8	14.8	14.8	14.9	13.8	11.7
16.0			11.2	11.2	11.2	12.0	10.4
18.0			8.6	8.6	8.6	9.9	9.4
20.0			6.6	6.5	6.6	7.8	8.4
22.0				5.0	5.0	6.2	7.0
24.0				3.8	3.8	5.0	5.7
26.0				2.9	2.8	4.0	4.7
28.0					1.8	3.1	3.8
30.0					0.9	2.4	3.1
32.0						1.6	2.4
34.0						1.0	1.9
36.0							1.3

A = Boom length B = Working radius

[BOOM]
Performance c

Unit : ton

A B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	60.0	50.0	40.0				
3.5	60.0	50.0	40.0				
4.0	60.0	50.0	40.0	32.0			
4.5	60.0	50.0	40.0	32.0			
5.0	58.0	50.0	40.0	32.0	25.0		
5.5	49.0	50.0	40.0	32.0	25.0		
6.0	42.0	42.5	40.0	32.0	25.0	16.5	
6.5	37.0	37.6	37.8	32.0	25.0	16.5	
7.0	32.5	33.1	33.2	30.5	25.0	16.5	12.0
7.5	29.0	29.4	29.5	28.7	25.0	16.5	12.0
8.0	26.0	26.4	26.5	26.4	25.0	16.5	12.0
9.0	21.0	21.5	21.6	21.5	21.6	16.5	12.0
10.0		17.9	18.0	17.9	18.0	16.5	12.0
11.0		15.0	15.1	15.1	15.2	16.5	12.0
12.0		12.8	12.8	12.8	12.9	14.1	12.0
14.0		9.4	9.4	9.4	9.5	10.7	11.4
16.0			6.9	6.8	6.9	8.2	8.9
18.0			4.8	4.8	4.8	6.3	7.1
20.0			3.2	3.2	3.2	4.6	5.5
22.0				1.9	1.9	3.3	4.2
24.0						2.3	3.2
26.0						1.4	2.3
28.0							1.5

A = Boom length B = Working radius

[BOOM]
Performance d

Unit : ton

A \ B (m)	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m
3.0	60.0	50.0	40.0				
3.5	60.0	50.0	40.0				
4.0	60.0	50.0	40.0	32.0			
4.5	60.0	50.0	40.0	32.0			
5.0	50.0	50.0	40.0	32.0	25.0		
5.5	42.0	42.5	40.0	32.0	25.0		
6.0	36.0	36.5	36.6	32.0	25.0	16.5	
6.5	31.0	31.5	31.6	31.6	25.0	16.5	
7.0	27.0	27.5	27.6	27.6	25.0	16.5	12.0
7.5	24.0	24.5	24.6	24.6	24.6	16.5	12.0
8.0	21.5	21.8	21.9	21.9	21.9	16.5	12.0
9.0	17.3	17.6	17.7	17.7	17.7	16.5	12.0
10.0		14.5	14.5	14.5	14.5	15.9	12.0
11.0		12.0	12.1	12.1	12.1	13.4	12.0
12.0		10.0	10.1	10.1	10.1	11.4	12.0
14.0		7.0	7.1	7.1	7.1	8.4	9.2
16.0			4.7	4.7	4.7	6.2	7.0
18.0			2.8	2.8	2.8	4.3	5.3
20.0						2.8	3.8
22.0							2.6

A = Boom length B = Working radius

[JIB]
Performance a Unit : ton

E	C D	9.8 m			15.4 m			21.0 m		
		5°	25°	45°	5°	25°	45°	5°	25°	45°
82°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°		5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°		5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°		4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°		3.9	3.2	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°		3.3	2.8	2.4	2.6	1.85	1.42	1.5	0.83	0.6
63°		3.0	2.55	2.2	2.35	1.7	1.3	1.4	0.8	0.6
60°		2.6	2.25	2.0	2.05	1.5	1.2	1.27	0.76	0.6
58°		2.4	2.05	1.85	1.9	1.4	1.15	1.2	0.74	0.6
55°		2.1	1.8	1.7	1.6	1.25	1.06	1.1	0.72	0.6
53°		1.85	1.7	1.6	1.5	1.2	1.03	1.05	0.71	0.6
50°		1.3	1.2	1.2	1.1	1.0	0.9	0.95	0.7	0.6
48°		0.9	0.85	0.85	0.75	0.7	0.65	0.6	0.6	

PERFORMANCE b Unit : ton

E	C D	9.8 m			15.4 m			21.0 m		
		5°	25°	45°	5°	25°	45°	5°	25°	45°
82°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°		5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°		5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°		4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°		3.9	3.2	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°		3.3	2.8	2.4	2.6	1.85	1.42	1.5	0.83	0.6
63°		3.0	2.55	2.2	2.35	1.7	1.3	1.4	0.8	0.6
60°		2.5	2.25	2.0	2.05	1.5	1.2	1.27	0.76	0.6
58°		1.9	1.85	1.75	1.8	1.3	1.05	1.1	0.65	0.55
55°		1.2	1.1	1.1	1.0	0.9				

C = Jib length D = Jib offset E = Boom angle

[JIB]
Performance c

Unit : ton

E	C	9.8 m			15.4 m			21.0 m		
	D	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°		5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°		5.2	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°		4.4	3.5	2.6	3.4	2.2	1.6	1.8	0.92	0.6
68°		3.4	3.1	2.5	3.05	2.1	1.6	1.67	0.88	0.6
65°		2.2	1.9	1.75	1.9	1.65				

Performance d

Unit : ton

E	C	9.8 m			15.4 m			21.0 m		
	D	5°	25°	45°	5°	25°	45°	5°	25°	45°
82°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
80°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
78°		5.5	4.3	2.9	3.5	2.6	1.6	2.5	1.1	0.6
75°		5.5	4.0	2.8	3.5	2.5	1.6	2.3	1.05	0.6
73°		4.9	3.8	2.7	3.5	2.4	1.6	2.05	1.0	0.6
70°		2.9								

C = Jib length D = Jib offset E = Boom angle

NOTES:

1. The total rated loads shown are for the case when the outriggers are set horizontally on firm 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 slings and hooks (900kg for a 100 ton capacity hook, 500kg for a 50 ton capacity hook and 140kg for a 5.5 ton capacity hook) are included in the total rated loads shown.
3. The total rated load is based on the actual working radius including the deflection of the boom.
4. The performance classifications, a, b, c and d, for the total rated load table are as follows. The same performance is valid for 360°.

Outriggers Counterweight	Extended width : 8.2m Front jack used Rear jack used	Extended width : 7.2m Front jack used Rear jack used	Extended width : 5.4m or more Front jack used Rear jack not used
With extra weight	a	b	c
With standard weight	b	c	d

5. The chart below shows the standard number of part lines for each boom length. The load per line should not exceed 5.0t for the main winch and 5.5t for the auxiliary winch.

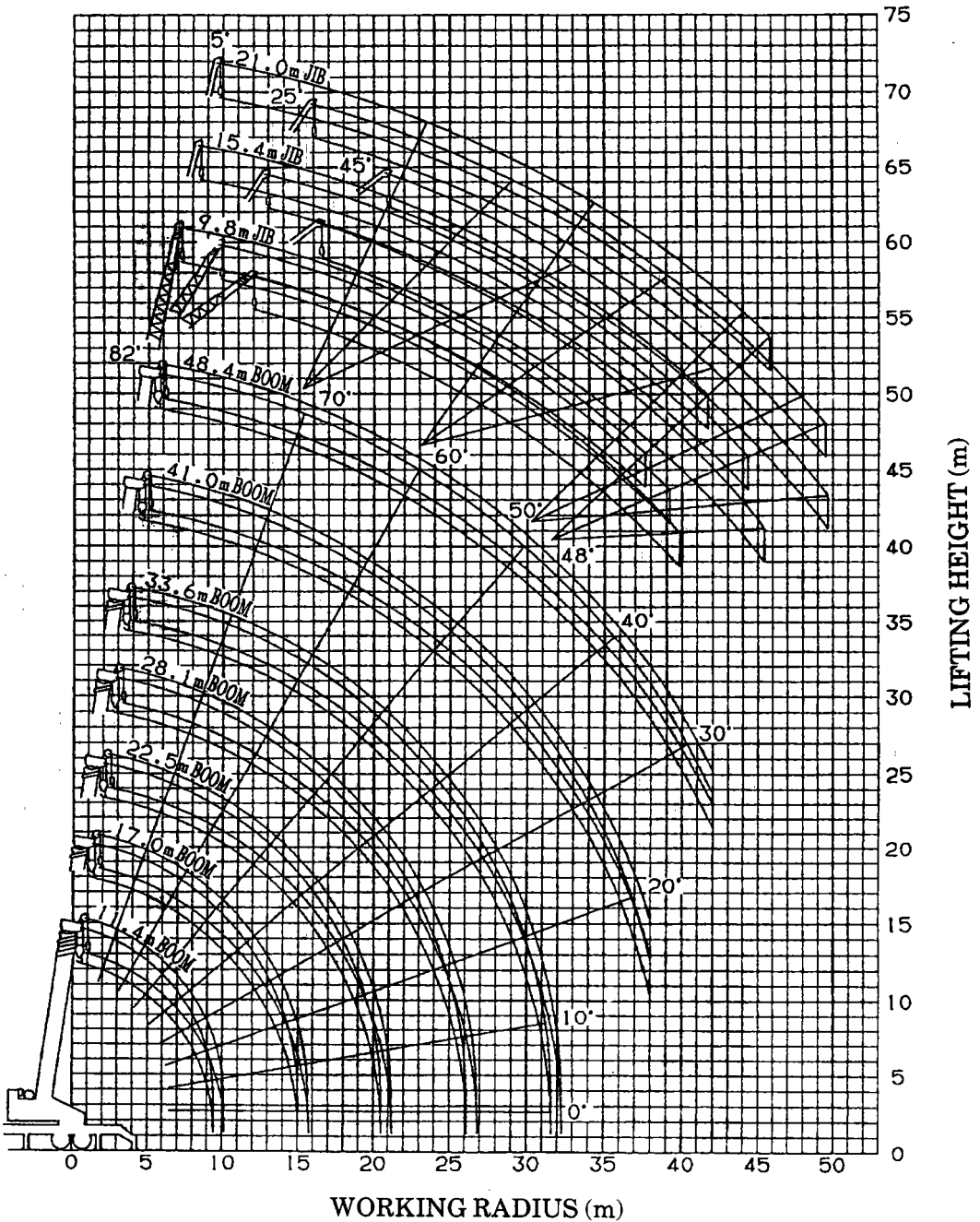
A	11.4m	17.0m	22.5m	28.1m	33.6m	41.0m	48.4m	J
H	(20)13	10	8	7	5	4	4	1

Value in () is for the case when the attachment is used.

A = Boom length H = No. of part-line J = Jib / Single top

6. As a rule, free-fall operation of the main winch should be performed only when lowering the hook alone. If a hoisted load must be lowered by free-fall operation, the load should be kept below 1/5th of the total rated load (keep the load per line at 1.0t or less) and sudden braking operations must be avoided.
7. The total rated load for the single top is the same as that of the boom and must not exceed 5.5 tons. However, when hooks, slings, etc. are mounted on the boom, one should work with the total rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the boom from the total rated load of the boom.

WORKING RADIUS - LIFTING HEIGHT



NOTES:

1. The deflection of the boom is not incorporated in the figure above.
2. The above diagram shows the case for performance a.

DIMENSIONS (1/100)

[On-site travelling conditions]

