TRUCK CRANE

TG

TG-3600M

JAPANESE SPECIFICATIONS

CARRIER MODEL	SPEC. NO.
日デ W-KL620YN	TG-3600M-1

Control No. TG-3600M-1/MB-10

TG-3600M

CRANE SPECIFICATIONS

CRANE CAPACITY

Boom

14.2m Boom	360,000kg	at 3.0m	(17	part-line×2)
23.4m Boom	180,000kg	at 4.5m	(17	part-line)
32.6m Boom	130,000kg	at 5.0m	(12	part-line)
41.8m Boom	100,000kg	at 6.0m	(9	part-line)
51.0m Boom	68,000kg	at 7.0m	(6	part-line)
Single top	12,500kg		(1	part-line)

[Reference]
Fully automatic luffing jib

11.1m Jib	54,000kg	at 7.0m	(5	part-line)
19.1m Jib	29,000kg	at 8.0m	(3	part-line)
27.1m Jib	10,000kg	at 22.0m	(1	part-line)
35.1m Jib	9,500kg	at 16.0m	(1	part-line)

Luffing jib

17m Jib	100,000kg	at 10.0m	(9	part-line)
23m Jib	80,000kg	at 12.0m	(8	part-line)
35m Jib	51,600kg	at 16.0m	(6	part-line)
47m Jib	31,000kg	at 18.0m	(4	part-line)
65m Jib	7,000kg	at 30.0m	(1	part-line)
70m Jib	5,000kg	at 35.0m	(1	part-line)

MAX. LIFTING HEIGHT

Boom 51.0m
[Reference] Fully automatic luffing jib 88.0m
[Reference] Luffing jib 98.0m
119.0m (luffing jib + extension jib)

MAX. WORKING RADIUS

Boom 46.0m
[Reference] Fully automatic luffing jib 64.0m
[Reference] Luffing jib 65.0m
90.0m (luffing jib + extension jib)

BOOM LENGTH

14.2m – 51.0m

MAIN WINCH SINGLE LINE SPEED

145m/min (5th layer)

AUXILIARY WINCH SINGLE LINE SPEED

145m/min (5th layer)

BOOM ELEVATION ANGLE

-1° – 83°

BOOM ELEVATION SPEED

-1° – 83° / 140s

SWING ANGLE

360° continue

SWING SPEED

1.1 rpm

WIRE ROPE

Main Winch
25mm × 450m (Diameter×Length)
Spin-resistant wire rope
Auxiliary Winch
25mm × 450m (Diameter×Length)
Spin-resistant wire rope

HOOK

180t hook (17 part-line)
80t hook (6 part-line)
25t hook (2 part-line)····option
12.5t hook (1 part-line)

BOOM

5-section hydraulically sequentially telescoping boom of box construction
Every step lock or no lock
(spring type and air cylinder type)

BOOM EXTENSION

4 double-acting hydraulic cylinders

SINGLE TOP

Single sheave. Mounted to main boom head by pin.

HOIST

Driven by hydraulic variable motor and via planetary gear reducer
Automatic brake
High/low speed changeover and creep operation device provided.
2 single winches

BOOM ELEVATION

2 double-acting hydraulic cylinders

SWING

Hydraulic motor driven planetary gear reducer
Roller type swing bearing
Disk type negative brake
High/low speed changeover and creep operation device provided.
Swing free/lock changeover type
Pneumatically operated swing lock

OUTRIGGERS

Fully hydraulic H-type 3 steps
Slides and jacks each provided with independent operation device.
Full extended width 8.5m
Middle extended width 7.0m, 5.9m
Extended width detector provided.

FRONT JACK

1 hydraulic type (with grounding detector)

REAR JACK

2 hydraulic types (with grounding detector)

ENGINE FOR CRANE

Model NISSAN DIESEL RF804
Type 4-cycle V8-cylinder,direct-injection,water-cooled diesel engine
Piston Displacement 16,991cc
Max. Output 270PS at 1,700rpm
Max. Torque 107kg·m at 1,400rpm

HYDRAULIC PUMPS

2 variable piston pumps and 2 variable gear pumps

HYDRAULIC OIL TANK CAPACITY

Upper 2,630 liters
Lower 200 liters

SAFETY DEVICES

Automatic moment limiter (AML)
With working range function
Outrigger extension automatic detector
Front jack grounding automatic detector
Rear jack grounding automatic detector
Weight combination automatic detector
Over-winding cutout
Dead winding holding device
Cable follower
Hook safety latch
Winch drum lock
Winch drum rotation indicator
Hydraulic safety valve
Hydraulic lock (elevation, expansion and contraction, hoist, jack, jib tilt, dismount)
Swing lock
Boom angle indicator
Level gauge
Front jack overload alarm

EQUIPMENTS

Air conditioner (crane cab)
Radio
Fan
Oil cooler
Boom dismount device
Swing frame dismount device
Counterweight dismount device
Iron plate
Automatic engine air removing device

CARRIER SPECIFICATIONS

MANUFACTURER
NISSAN DIESEL MOTOR CO.,LTD

CARRIER MODEL
W-KL620YN

ENGINE
Model RF10
Type 4-cycle V10-cylinder, direct-injection, water-cooled diesel engine
Piston displacement 21,239cc
Max. output 420PS at 2,200rpm
Max. torque 142kg·m at 1,400rpm

CLUTCH
Dry multi-plate coil spring type

TRANSMISSION
5-forward and 1-reverse speeds (with 2-step sub reducer)
Constant-mesh gear

REDUCER
Spiral bevel gear type (2nd axle) and hypoid gear type (4th and 5th axles)
Planetary gear type hub reduction

FRONT AXLE
1st axle: Reverse-elliot type
2nd axle: Full-floating type, reverse-elliot type

REAR AXLE
3rd, 6th axles: Reverse-elliot type
4th, 5th axles: Full-floating type

SUSPENSION
1st, 2nd axles: Semi-elliptic leaf spring type, vehicle shaft type
3rd, 6th axles: Hydraulic type
4th, 5th axles: Equalizer beam type

STEERING
Recirculating ball screw type
With linkage power assistance
1st, 2nd, 3rd, 6th axle steering

BRAKE SYSTEM
Service Brake
Foot operated full air brake on 10 wheels, dual air line system, internal expanding leading and trailing shoe type.
Parking Brake
Foot operated full air brake type spring brake, acting on wheels
Auxiliary Brake
Electro-pneumatic operated exhaust brake.
Emergency
Works by applying the parking brake

ELECTRIC SYSTEM
24 V DC 2 batteries of 115F51 (96Ah)

FUEL TANK CAPACITY
300 liters

CAB
Two-man type

TIRES
Front 14.00-24-24PR
Rear 14.00-24-24PR

STANDARD EQUIPMENTS
Car heater
Car radio
Car cooler

GENERAL DATA

DIMENSIONS (CARRIER ONLY)
Overall length 13,510mm
Overall width 3,400mm
Overall height 2,790mm
Wheel base 1,500mm +2,800mm+1,950mm +1,500mm +1,500mm=9,250mm
Tread 2,830mm (1st, 2nd, 3rd, 6th axles) 2,540mm (4th, 5th axles)

WEIGHTS (CARRIER ONLY)
Gross vehicle weight
Total 44,950kg

PERFORMANCE (CARRIER ONLY)
Max. traveling speed 60km/h
Gradeability (tan θ) 0.31
Min. turning radius 11.8m

TOTAL RATED LOADS

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 the slings and hooks 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 and jib.
4. The chart below shows the standard number of part lines for each boom length.

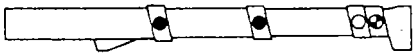
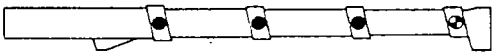
A	14.2		23.4		32.6	41.8	51.0
H	360	180	180	170	130	100	68
J	17×2	17	17	16	120	9	6
K	180×2	180	180	180	180	180	80
L	8×2	8	8	8	8	8	3
M	2,400×2	2,400	2,400	2,400	2,400	2,400	1,360
Remarks	360t sling support, hook support for the top boom (4,150kg)	Attachment sheave for the top boom	Attachment sheave for the top boom				

A = Boom length (m)
H = Total rated loads (t)
J = No. of part-lines
K = Hook lifting capacity (t)
L = No. of sheaves
M = Hook weight (kg)

5. Boom length and boom fixing pin
   The boom expansion and contraction order, stroke of each boom, boom length, boom fixing pin condition when the boom and jib are used are as follows.
   1) Boom expansion and contraction order and stroke of each boom
      - Expand the boom from the base boom side, and then expand the next boom when the boom is expanded by the strokes shown in the following table.
      - Contract the boom from the top boom side, and then contract the next boom when the boom is contracted by the strokes shown in the following table.

Crane service condition	Boom stroke
Boom	9.2m
Fully automatic luffing jib	
Luffing jib	8.4m

2) Boom length and boom fixing pin status

Boom length		Pin condition when the boom fixing pin is used ● Pin inserted ○ Pin removed ◔ Both pin insertion and removal are available.
· Boom · Fully automatic luffing jib	· Luffing jib	
14.2m	14.2m	
23.4m	22.6m	
32.6m	31.0m	
41.8m	39.4m	
51.0m	47.8m	

· If there is at least one ○ in the "pin condition when the boom fixing pin is used" column in the above chart, the performance when the boom fixing pin is not used is applied.
· When operating the jib (fully automatic luffing jib, luffing jig), the boom length and the boom fixing pin condition must be in accordance with the above chart.

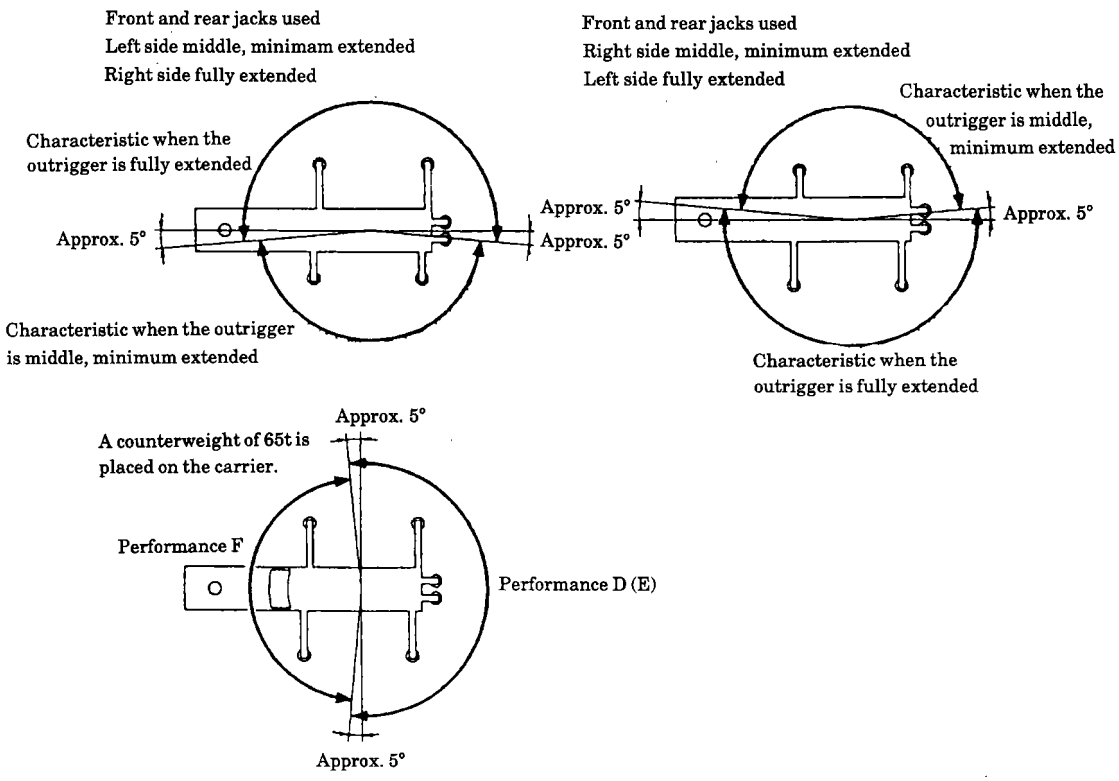
6. As shown in the following table, the performance depends on the outrigger installation condition, counterweight combination, and whether or not the boom fixing pin is used.

1) Performance classification

Counterweight / Outrigger extension width	85t	65t	45t	20t	0t	65t on the carrier
8.5m	A	B (D)	C (D)	D (E)	E (F)	D (E)
7.0m	※	C (D)	D (D)	E (E)	F (F)	E (E)
5.9m	※	※	D (D)	E (E)	F (F)	E (E)

· The performance in the parentheses is applied if even either one of the front jack or rear jack is not used. However, when attaching a 85t counterweight, always use the front jack and rear jack.
· Performance F is for the work preparation. The boom length is 14.2m to 23.4m.
· ※ shows the prohibition in order to prevent the crane from falling down on its rear side.

2) Working area
In the following cases, the total rated load varies according to the swing position. Be careful about the AML moment indication (%) because an overload may be applied in some swing directions.



3) When the boom length and the boom fixing pin condition are other than those stated in the chart "Boom length and the boom fixing pin condition" in item 5. 2), the maximum total rated load for each boom length is limited as shown in the following table. The rated total loads below the limit value remain as they are and are the same when the boom fixing pin is used. However, when removing the boom fixing pin, the total rated loads for every boom length should be 25 tons or less.

Boom length	23.4m	32.6m	41.8m	51.0m
Max. total rated load (t)	52.0	50.0	30.0	30.0

7. The total rated load for the single top is the same as that of the main boom and must not exceed 12.5 tons. However, when hooks, slings, etc. are mounted on the main boom, one should work at the rated load obtained by subtracting the weights of the hooks, slings, etc. mounted on the main boom from the total rated load of the main boom.
8. Do not swing the upper swing frame on tires.
(Keep the swing frame locked until the outrigger is installed.)

TOTAL RATED LOADS

[BOOM]

Performance A

Unit:ton

B (m)	A				
	14.2m	23.4m	32.6m	41.8m	51.0m
3.0	360.0	180.0			
3.5	300.0	180.0			
4.0	260.0	180.0			
4.5	240.0	180.0			
5.0	225.0	175.0	130.0		
6.0	190.0	162.0	120.0	100.0	
7.0	163.0	150.0	112.0	95.0	68.0
8.0	143.0	135.0	106.0	86.0	65.0
9.0	125.0	120.0	105.0	79.0	62.0
10.0	110.0	110.0	95.0	72.0	55.0
11.0		100.0	87.0	67.0	50.0
12.0		90.0	80.0	61.2	47.0
14.0		75.0	68.0	53.0	41.0
16.0		63.0	59.0	46.0	36.2
18.0		53.0	52.0	42.0	32.7
20.0		44.0	46.0	38.0	29.7
22.0			40.0	34.0	26.5
24.0			35.5	31.0	24.0
26.0			30.5	28.0	22.0
28.0			26.5	25.0	20.5
30.0				22.5	19.0
32.0				20.0	17.5
34.0				18.0	16.0
36.0				17.0	14.5
38.0				15.0	13.5
40.0					12.0
42.0					11.3
44.0					10.6
46.0					9.5

A = Boom length
B = Working radius

Performance B

Unit:ton

B	A				
(m)	14.2m	23.4m	32.6m	41.8m	51.0m
3.0	360.0	180.0			
3.5	300.0	180.0			
4.0	260.0	180.0			
4.5	240.0	180.0			
5.0	225.0	175.0	130.0		
6.0	190.0	162.0	120.0	100.0	
7.0	159.0	150.0	112.0	95.0	68.0
8.0	136.0	133.0	106.0	86.0	65.0
9.0	118.0	115.0	97.0	79.0	62.0
10.0	104.0	103.0	88.0	72.0	55.0
11.0		91.0	82.0	67.0	50.0
12.0		81.0	75.0	61.2	47.0
14.0		66.0	65.0	53.0	41.0
16.0		53.0	56.0	46.0	36.2
18.0		42.0	46.0	42.0	32.7
20.0		34.0	38.0	37.0	29.7
22.0			32.0	32.0	26.5
24.0			27.0	29.0	24.0
26.0			22.5	25.0	22.0
28.0			17.0	21.5	20.5
30.0				18.5	19.0
32.0				15.8	17.5
34.0				13.0	15.5
36.0				11.0	13.5
38.0				9.5	12.0
40.0					10.5
42.0					9.0
44.0					7.8
46.0					6.6

A = Boom length

B = Working radius

Performance C

Unit:ton

B	A				
(m)	14.2m	23.4m	32.6m	41.8m	51.0m
3.0	320.0	180.0			
3.5	265.0	180.0			
4.0	235.0	180.0			
4.5	215.0	170.0			
5.0	200.0	165.0	130.0		
6.0	170.0	150.0	120.0	100.0	
7.0	143.0	137.0	112.0	95.0	68.0
8.0	122.0	120.0	106.0	86.0	65.0
9.0	106.0	104.0	97.0	79.0	62.0
10.0	94.0	91.0	88.0	72.0	55.0
11.0		80.0	80.0	67.0	50.0
12.0		72.0	72.0	61.2	47.0
14.0		56.0	57.0	53.0	41.0
16.0		43.0	44.0	46.0	36.2
18.0		34.0	35.0	37.8	32.7
20.0		27.5	28.0	30.8	29.7
22.0			23.0	25.5	26.5
24.0			19.0	21.2	24.0
26.0			15.0	17.7	20.4
28.0			12.0	14.5	17.5
30.0				11.8	15.0
32.0				9.5	12.6
34.0				7.5	10.5
36.0				5.8	8.5
38.0				4.3	7.0
40.0					5.7
42.0					4.5
44.0					3.4
46.0					2.4

A = Boom length
B = Working radius

Performance D

Unit:ton

B (m)	A				
	14.2m	23.4m	32.6m	41.8m	51.0m
3.0	250.0	180.0			
3.5	215.0	170.0			
4.0	190.0	165.0			
4.5	165.0	150.0			
5.0	148.0	135.0	120.0		
6.0	120.0	115.0	105.0	100.0	
7.0	100.0	96.0	95.0	90.0	
8.0	85.0	81.0	82.0	80.0	
9.0	72.0	69.0	70.0	70.0	
10.0	62.0	60.0	60.0	60.0	50.0
11.0		51.0	51.0	56.0	47.0
12.0		45.0	44.0	49.0	44.0
14.0		33.0	35.0	39.0	38.0
16.0		24.0	27.0	30.0	31.5
18.0		18.0	21.0	23.0	26.0
20.0		13.0	15.5	18.0	21.0
22.0			11.2	14.0	17.0
24.0			7.7	10.5	13.5
26.0			4.9	7.6	11.0
28.0			2.6	5.2	8.5
30.0				3.2	6.4
32.0					4.6
34.0					3.0

A = Boom length

B = Working radius

Performance E

Unit:ton

B (m)	A 14.2m	23.4m	32.6m	41.8m	51.0m
3.0	200.0	170.0			
3.5	180.0	165.0			
4.0	165.0	150.0			
4.5	150.0	135.0			
5.0	140.0	120.0	100.0		
6.0	120.0	100.0	80.0	90.0	
7.0	80.0	80.0	67.0	80.0	
8.0	62.0	58.0	59.0	63.0	
9.0	48.0	44.0	46.0	49.0	
10.0	40.0	35.0	37.0	40.0	44.0
11.0		29.0	31.0	33.0	37.0
12.0		24.0	25.0	28.0	31.0
14.0		16.0	17.5	20.0	23.0
16.0		10.0	11.5	14.0	17.0
18.0		6.0	7.0	10.0	13.0
20.0		3.0	3.0	6.5	10.0
22.0				4.0	7.0
24.0					4.0

Performance F

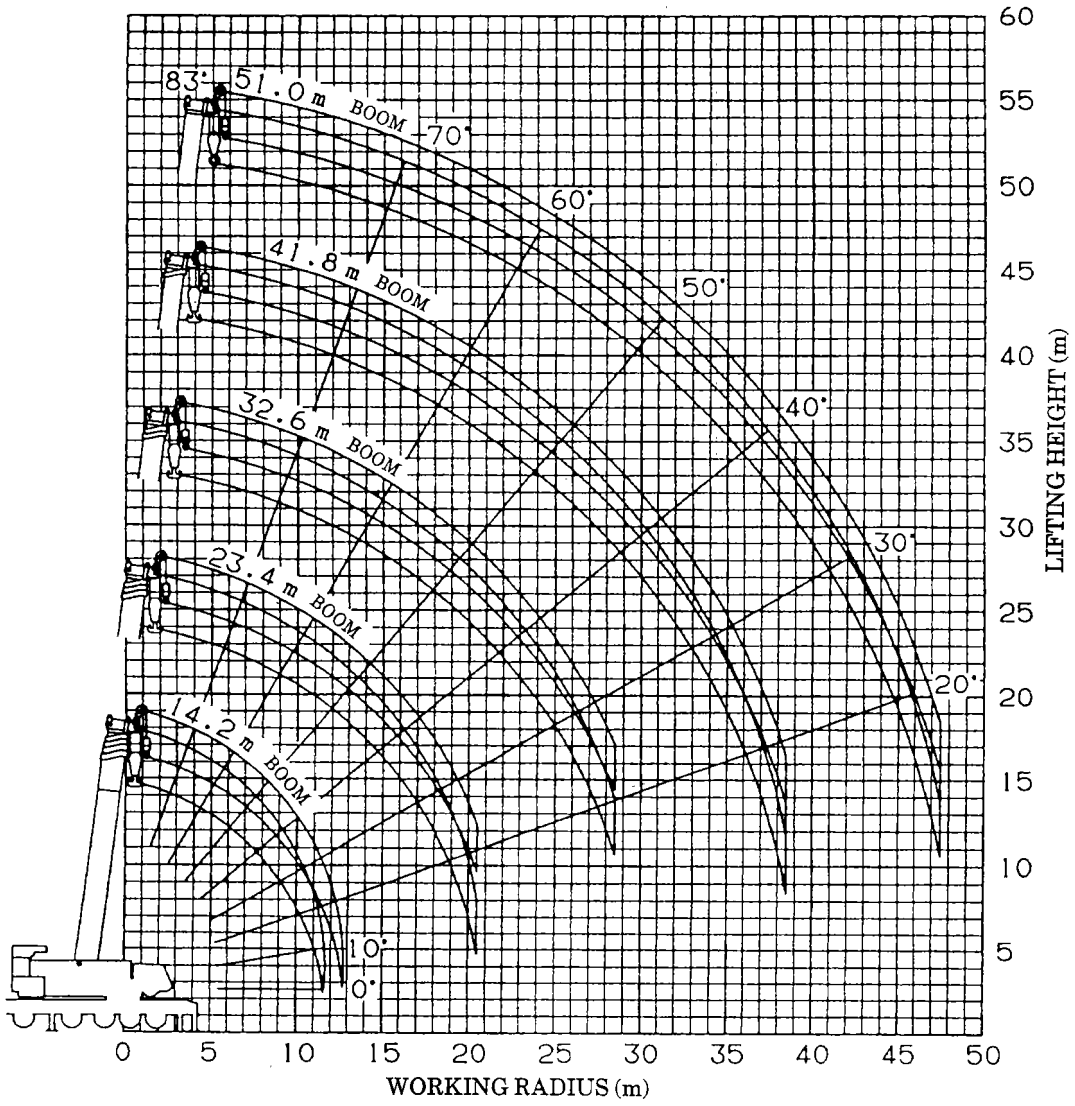
Unit:ton

B (m)	A 14.2m	23.4m
3.0	160.0	145.0
3.5	145.0	145.0
4.0	130.0	130.0
4.5	115.0	115.0
5.0	104.0	100.0
6.0	64.0	80.0
7.0	44.0	51.0
8.0	31.0	32.0
9.0	24.0	21.0
10.0	18.0	14.0
11.0		9.0

A = Boom length
B = Working radius

WORKING RADIUS - LIFTING HEIGHT

[BOOM]

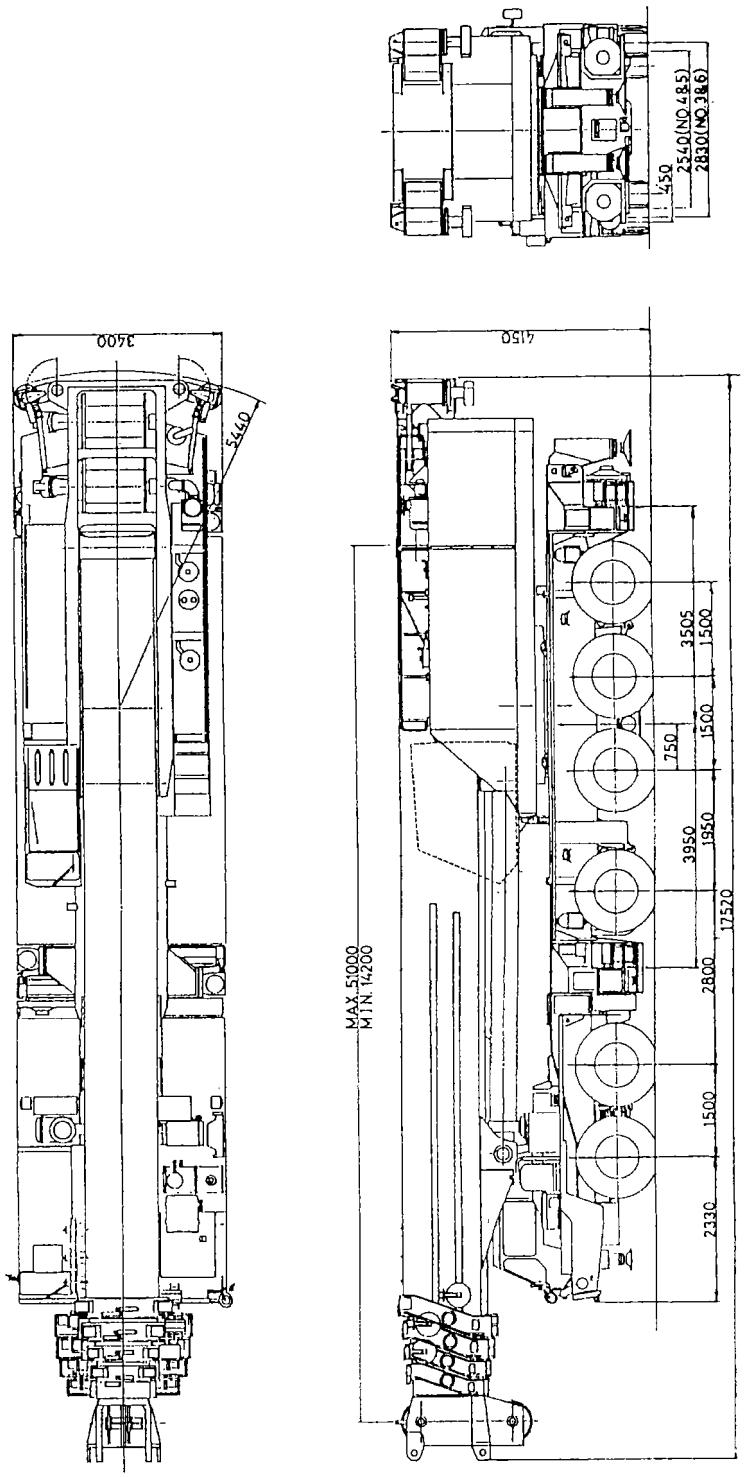


NOTES:

1. The deflection of the boom is not included in the figure above.
2. The above chart is for Performance A.

DIMENSIONS

[On-site traveling condition]



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