

TRUCK CRANE

TG-450M

TG

JAPANESE SPECIFICATIONS

CARRIER MODEL	OUTLINE	SPEC. NO.
NISSAN DIESEL K-KG54T	5-section Boom, 2-stage Jib	TG-450M-3-10101
mitsubishi P-K450		TG-450M-3-20101

Control No. JA-01

TG-450M-3-10101

TG-450M-3-20101

TG-450M

CRANE SPECIFICATIONS

CRANE CAPACITY

10.65m Boom	45,000kg	at 3.0m	(11 part-line)
18.0m Boom	28,000kg	at 5.0m	(7 part-line)
25.3m Boom	20,000kg	at 6.0m	(5 part-line)
32.7m Boom	13,000kg	at 7.5m	(4 part-line)
40.0m Boom	7,500kg	at 10.0m	(2 part-line)
9.0m Jib	3,500kg	at 78°	(1 part-line)
16.0m Jib	2,300kg	at 78°	(1 part-line)
Single top	4,000kg		(1 part-line)

MAX. LIFTING HEIGHT

Boom	39.5m
Jib	55.5m

MAX. WORKING RADIUS

Boom	30.0m (Standard)
	34.0m (With device for heavy-duty work)
Jib	36.5m (Standard)
	39.3m (With device for heavy-duty work)

BOOM LENGTH

10.65m – 40.0m

BOOM EXTENSION

29.35m

BOOM EXTENSION SPEED

29.35m / 120s

JIB LENGTH

9.0m, 16.0m

MAIN WINCH SINGLE LINE SPEED

High range:	100m/min	(3rd layer)
Low range:	45m/min	(3rd layer)

MAIN WINCH HOOK SPEED

High range:	9.0m/min	(11 part-line)
Low range:	4.0m/min	(11 part-line)

AUXILIARY WINCH SINGLE LINE SPEED

High range:	93m/min	(2nd layer)
Low range:	42m/min	(2nd layer)

AUXILIARY WINCH HOOK SPEED

High range:	93m/min	(1 part-line)
Low range:	42m/min	(1 part-line)

BOOM ELEVATION ANGLE

-3° – 80°

BOOM ELEVATION SPEED

-3° – 80° / 68s

SWING ANGLE

360° continue

SWING SPEED

2.0 rpm

WIRE ROPE

Main Winch

18mm × 185m (Diameter × Length)
 7 × 7 + 6 × Fi(29) Class C ordinary · Z twist
 Spin-resistant wire rope
 Breaking strength 24.3t

Auxiliary Winch

18mm × 130m (Diameter × Length)
 7 × 7 + 6 × Fi(29) Class B ordinary · Z twist
 Spin-resistant wire rope
 Breaking strength 22.3t

BOOM

5-section power telescoping boom of hexagonal box construction

(stages 2,3: synchronized; stage 4,5: synchronized)

BOOM EXTENSION

3 double-acting hydraulic cylinder

1 wire rope type telescoping device

JIB

2-staged swingaround boom extensions.
 (stages 2: pull-out type)
 Triple offset (5°, 25°, 45°) type

SINGLE TOP

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

HOIST

Hydraulic motor driven planetary gear reducer.
 With free-fall device.
 Automatic brake (with foot brake for free-fall device)
 2 single winches

BOOM ELEVATION

2 double-acting hydraulic cylinders

SWING

Hydraulic motor driven planetary gear reducer
 Swing bearing
 Hand brake
 Swing free/lock changeover type

OUTRIGGERS

Fully hydraulic H-type (Floats mounted integrally)
 Slides and jacks each provided with independent operation device.

Full extended width	6.8m
Middle extended width	4.6m

FRONT JACK

Hydraulic operated type

MAX. OUTRIGGER LOAD

44.0t

HYDRAULIC PUMPS

4 gear pumps

HYDRAULIC OIL TANK CAPACITY

675liters

SAFETY DEVICES

Automatic moment limiter (AML)
 With working range limiting function
 Over-winding cutout
 Level gauge
 Working area control device
 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
 Radio
 Fan
 Block

OPTIONAL EQUIPMENT

Device for heavy-duty work



CARRIER SPECIFICATIONS

MANUFACTURER

NISSAN DIESEL MOTOR CO., LTD

CARRIER MODEL

P-KG54T

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 1,200rpm

CLUTCH

Dry single-plate coil spring type

TRANSMISSION

7-forward and 1-reverse speeds

Synchronized-mesh gear (for 2nd – 7th speeds)

REDUCER

Hypoid gear type

FRONT AXLE

Reverse Elliot-type steel pipe cross section (with stabilizers on front and rear axles)

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

2-circuit air brake, 8-wheels internal expanding brake

Parking Brake

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

Auxiliary Brake

Electro-pneumatic operated exhaust brake

Emergency

Spring brake

ELECTRIC SYSTEM

24 V DC. 2 batteries of 12V-115F51 (96Ah)

FUEL TANK CAPACITY

300 liters

CAB

Two-man type

TIRES

Front 13.00-20-20PR

Rear 11.00-20-14PR

STANDARD EQUIPMENTS

Car heater

Car radio

GENERAL DATA

DIMENSIONS

Overall length 12,840mm

Overall width 2,820mm

Overall height 3,750mm

Wheel base 1,470mm + 3,780mm + 1,400mm = 6,650mm

Tread Front 2,230mm

Rear 2,110mm

WEIGHTS

Gross vehicle weight

Total 37,230kg

Front 16,320kg

Rear 20,910kg

PERFORMANCE

Max. traveling speed 65km/h

Min. traveling speed 1.2km/h

Gradeability (tan θ) 0.57

Min. turning radius 11.0m



TG-450M-3-20101

CARRIER SPECIFICATIONS

MANUFACTURER

MITSUBISHI MOTOR CORPORATION

CARRIER MODEL

P-K450

ENGINE

Model 8DC9

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

Piston displacement 16,031cc

Max. output 320PS at 2,200rpm

Max. torque 110kg·m at 1,400rpm

CLUTCH

Dry single-plate type

Hydraulic control with clutch booster

TRANSMISSION

10-forward and 2-reverse speeds

Constant-mesh gear (1st speed, 2nd speed, reverse)

Synchronized-mesh gear (for 3rd – 10th speeds)

REDUCER

1-stage speed reduction type

Hypoid gear type

FRONT AXLE

Reverse-elliot type steering knuckles

REAR AXLE

Full-floating type, cast-steel housing

SUSPENSION

Front Laminated semi-elliptical leaf spring type

With torsion bar stabilizer

(only for the front front axle)

Rear Equalizer beam and torque rod type

STEERING

Recirculating ball screw type

With linkage type hydraulic power booster

BRAKE SYSTEM

Service Brake

2-circuit air brakes for all wheels

Leading and trailing shoe type.

Parking Brake

Spring brake, acting on 4 rear wheels

Auxiliary Brake

Exhaust brake

ELECTRIC SYSTEM

24 V DC. 2 batteries of 12V-145F51 (112Ah)

FUEL TANK CAPACITY

300 liters

CAB

Two-man type

TIRES

Front 13.00-20-20PR

Rear 11.00-20-14PR

STANDARD EQUIPMENTS

Car heater

Car radio

GENERAL DATA

DIMENSIONS

Overall length 12,860mm

Overall width 2,820mm

Overall height 3,750mm

Wheel base 1,450mm + 3,850mm + 1,350mm = 6,650mm

Tread Front 2,240mm

Rear 2,050mm

WEIGHTS

Gross vehicle weight

Total 37,340kg

Front 16,335kg

Rear 21,005kg

PERFORMANCE

Max. traveling speed 70km/h

Min. traveling speed 1.9km/h

Gradeability (tan θ) 0.31

Min. turning radius 11.0m



TOTAL RATED LOADS

(1) Standard specifications

(i)

[BOOM]

Unit : ton

• Outriggers fully extended + Front jack (360°) • Outriggers fully extended (Over rear · Over sides)					
A	10.65 m	18.0 m	25.3 m	32.7 m	40.0 m
B (m)					
3.0	45.00	28.00			
3.5	40.50	28.00			
4.0	36.50	28.00	20.00		
4.5	33.00	28.00	20.00		
5.0	30.20	28.00	20.00		
5.5	27.50	25.60	20.00	13.00	
6.0	25.00	23.50	20.00	13.00	
6.5	22.70	21.80	18.10	13.00	7.50
7.0	20.70	20.00	16.80	13.00	7.50
7.5	18.90	18.50	15.70	13.00	7.50
8.0	17.40	17.00	14.80	12.30	7.50
8.5	15.40	15.30	14.00	11.60	7.50
9.0	13.85	13.65	13.20	11.00	7.50
10.0		10.95	10.85	10.00	7.50
11.0		9.00	8.85	9.10	6.95
12.0		7.50	7.35	8.20	6.45
13.0		6.30	6.15	6.95	6.00
14.0		5.35	5.20	6.00	5.60
16.0		3.85	3.70	4.50	4.80
18.0			2.50	3.40	3.95
20.0			1.60	2.45	3.10
22.0			0.85	1.75	2.35
24.0				1.15	1.75
26.0				0.65	1.25
28.0					0.85
30.0					0.50

A = Boom length

B = Working radius

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(1) Standard specifications
 (ii)
 [JIB]

Unit : ton

• Outriggers fully extended + Front jack (360°) • Outriggers fully extended (Over rear · Over sides)						
C D E (°)	9.0 m			16.0 m		
	5°	25°	45°	5°	25°	45°
80	3.50	2.20	1.20	2.30	1.10	0.60
79	3.50	2.20	1.20	2.30	1.10	0.60
78	3.50	2.20	1.20	2.30	1.10	0.60
77	3.32	2.14	1.19	2.18	1.07	0.59
76	3.13	2.08	1.18	2.06	1.05	0.59
75	2.97	2.02	1.17	1.96	1.02	0.58
73	2.68	1.91	1.15	1.78	0.97	0.57
70	2.33	1.74	1.11	1.56	0.91	0.56
68	2.15	1.64	1.09	1.44	0.87	0.54
65	1.91	1.49	1.07	1.27	0.81	0.53
63	1.78	1.39	1.03	1.18	0.78	0.51
60	1.45	1.25	1.00	1.06	0.74	0.50
58	1.16	1.03	0.98	0.93	0.68	0.49
55	0.82	0.69	0.66	0.63	0.47	
53	0.62					

C = Jib length

D = Jib offset

E = Boom angle

**(1) Standard specifications
(iii)
[BOOM]**

Unit : ton

• Outriggers middle extended (360°) • Outriggers fully extended (Over front)						Without outriggers (Over rear)	
A \ B (m)	10.65 m	18.0 m	25.3 m	32.7 m	40.0 m	A \ B (m)	10.65 m
3.0	40.00	28.00				3.0	8.00
3.5	34.00	28.00				3.5	6.40
4.0	28.60	28.00	20.00			4.0	5.10
4.5	26.20	26.05	20.00			4.5	4.20
5.0	19.60	19.50	19.40			5.0	3.40
5.5	15.40	15.25	15.20	13.00		5.5	2.80
6.0	12.60	12.30	12.25	13.00		6.0	2.30
6.5	10.40	10.15	10.10	11.30	7.50	6.5	1.90
7.0	8.70	8.50	8.45	9.60	7.50	7.0	1.60
7.5	7.40	7.20	7.20	8.20	7.50	7.5	1.25
8.0	6.30	6.25	6.15	7.10	7.50	8.0	1.00
8.5	5.40	5.40	5.30	6.15	6.90	A = Boom length B = Working radius	
9.0	4.65	4.65	4.55	5.40	6.10		
10.0		3.50	3.35	4.15	4.85		
11.0		2.50	2.45	3.30	3.85		
12.0		1.65	1.65	2.65	3.15		
13.0				1.95	2.50		
14.0				1.40	1.95		
16.0					1.15		



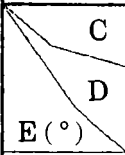
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(1) Standard specifications

(iv)

[JIB]

Unit : ton

• Outriggers middle extended (360°) • Outriggers fully extended (Over front)						
 E (°)	9.0 m			16.0 m		
	5°	25°	45°	5°	25°	45°
80	3.50	2.20	1.20	2.30	1.10	0.60
79	3.50	2.20	1.20	2.30	1.10	0.60
78	3.50	2.20	1.20	2.30	1.10	0.60
77	3.10	2.14	1.19	2.18	1.07	0.59
76	2.65	2.08	1.18	2.06	1.05	0.59
75	2.25	1.85	1.17	1.70	1.02	
73	1.55	1.30				

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 are based on the crane strength.
2. The weights of slings and hooks (400kg for a 45 ton capacity hook, 200kg for a 12 ton capacity hook and 100kg for a 4 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 chart below shows the standard number of part lines for each boom length. The load per line should not exceed 4.0t for both the main winch and the auxiliary winch.

A	10.65m	18.0 m	25.3 m	32.7 m	40.0 m	J
H	11	7	5	4	2	1

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

5. As a rule, free-fall operations 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 (the load per line must be 0.8t or less for both the main and the auxiliary winches) and sudden braking operations must be avoided. Free-fall operations should not be performed without the outriggers.
6. The total rated load for the single top is the same as that of the boom and must not exceed 4.0 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.

**(2) Specifications for the case
when the device for heavy-duty work (option) is mounted**

(i)

[BOOM]

Unit : ton

· Outriggers fully extended + Front jack (360°) · Outriggers fully extended (Over rear · Over sides)					
A \ B (m)	10.65 m	18.0 m	25.3 m	32.7 m	40.0 m
3.0	45.00	28.00			
3.5	40.50	28.00			
4.0	36.50	28.00	20.00		
4.5	33.00	28.00	20.00		
5.0	30.20	28.00	20.00		
5.5	27.50	25.60	20.00	13.00	
6.0	25.00	23.50	20.00	13.00	
6.5	22.70	21.80	18.10	13.00	7.50
7.0	20.70	20.00	16.80	13.00	7.50
7.5	18.90	18.50	15.70	13.00	7.50
8.0	17.40	17.00	14.80	12.30	7.50
8.5	16.05	15.70	14.00	11.60	7.50
9.0	14.90	14.70	13.20	11.00	7.50
10.0		12.20	11.80	10.00	7.50
11.0		10.15	10.00	9.10	6.95
12.0		8.50	8.35	8.30	6.45
13.0		7.30	7.15	7.65	6.00
14.0		6.25	6.10	6.95	5.60
16.0		4.60	4.50	5.35	4.80
18.0			3.35	4.15	4.05
20.0			2.35	3.20	3.55
22.0			1.60	2.45	3.00
24.0				1.80	2.35
26.0				1.30	1.80
28.0				0.85	1.35
30.0					1.00
32.0					0.70
34.0					0.40

A = Boom length

B = Working radius

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**(2) Specifications for the case
 when the device for heavy-duty work (option) is mounted
 (ii)
 [JIB]**

Unit : ton

• Outriggers fully extended + Front jack (360°) • Outriggers fully extended (Over rear · Over sides)						
E (°)	9.0 m			16.0 m		
	C	D	E	C	D	E
80	5°	2.5°	4.5°	5°	2.5°	4.5°
79	3.50	2.20	1.20	2.30	1.10	0.60
78	3.50	2.20	1.20	2.30	1.10	0.60
77	3.32	2.14	1.19	2.18	1.07	0.59
76	3.13	2.08	1.18	2.06	1.05	0.59
75	2.97	2.02	1.17	1.96	1.02	0.58
73	2.68	1.91	1.15	1.78	0.97	0.57
70	2.33	1.74	1.11	1.56	0.91	0.56
68	2.15	1.64	1.09	1.44	0.87	0.54
65	1.91	1.49	1.07	1.27	0.81	0.53
63	1.78	1.39	1.03	1.18	0.78	0.51
60	1.60	1.26	1.00	1.06	0.74	0.50
58	1.46	1.19	0.98	0.98	0.72	0.49
55	1.15	1.02	0.94	0.90	0.70	0.47
53	0.94	0.80	0.76	0.72	0.56	0.46
50	0.66	0.52	0.48	0.45		

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

**(2) Specifications for the case
when the device for heavy-duty work (option) is mounted
(iii)
[BOOM]**

Unit : ton

<ul style="list-style-type: none"> • Outriggers middle extended (360°) • Outriggers fully extended (Over front) 						Without outriggers (Over rear)	
A B (m)	10.65 m	18.0 m	25.3 m	32.7 m	40.0 m	A B (m)	10.65 m
3.0	40.00	28.00				3.0	8.00
3.5	35.00	28.00				3.5	6.40
4.0	30.00	28.00	20.00			4.0	5.10
4.5	26.60	26.50	20.00			4.5	4.20
5.0	23.45	23.35	20.00			5.0	3.40
5.5	18.55	18.40	18.35	13.00		5.5	2.80
6.0	15.10	15.00	14.95	13.00		6.0	2.30
6.5	12.60	12.50	12.40	13.00	7.50	6.5	1.90
7.0	10.65	10.55	10.50	11.65	7.50	7.0	1.60
7.5	9.10	9.00	8.95	10.05	7.50	7.5	1.25
8.0	7.85	7.80	7.70	8.75	7.50	8.0	1.00
8.5	6.85	6.75	6.70	7.70	7.50	A = Boom length B = Working radius	
9.0	6.00	5.90	5.80	6.80	6.90		
10.0		4.50	4.45	5.40	6.05		
11.0		3.45	3.35	4.30	4.95		
12.0		2.60	2.50	3.45	4.05		
13.0		1.95	1.75	2.75	3.35		
14.0		1.35	1.15	2.10	2.80		
16.0				1.15	1.75		
18.0					1.10		

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**(2) Specifications for the case
when the device for heavy-duty work (option) is mounted**

(iv)

[JIB]

Unit : ton

· Outriggers middle extended (360°) · Outriggers fully extended (Over front)						
E (°)	9.0 m			16.0 m		
	5°	25°	45°	5°	25°	45°
80	3.50	2.20	1.20	2.30	1.10	0.60
79	3.50	2.20	1.20	2.30	1.10	0.60
78	3.50	2.20	1.20	2.30	1.10	0.60
77	3.32	2.14	1.19	2.18	1.07	0.59
76	3.13	2.08	1.18	2.06	1.05	0.59
75	2.95	2.02	1.17	1.96	1.02	0.58
73	2.20	1.80	1.15	1.78	0.97	
70	1.35					

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

NOTES:

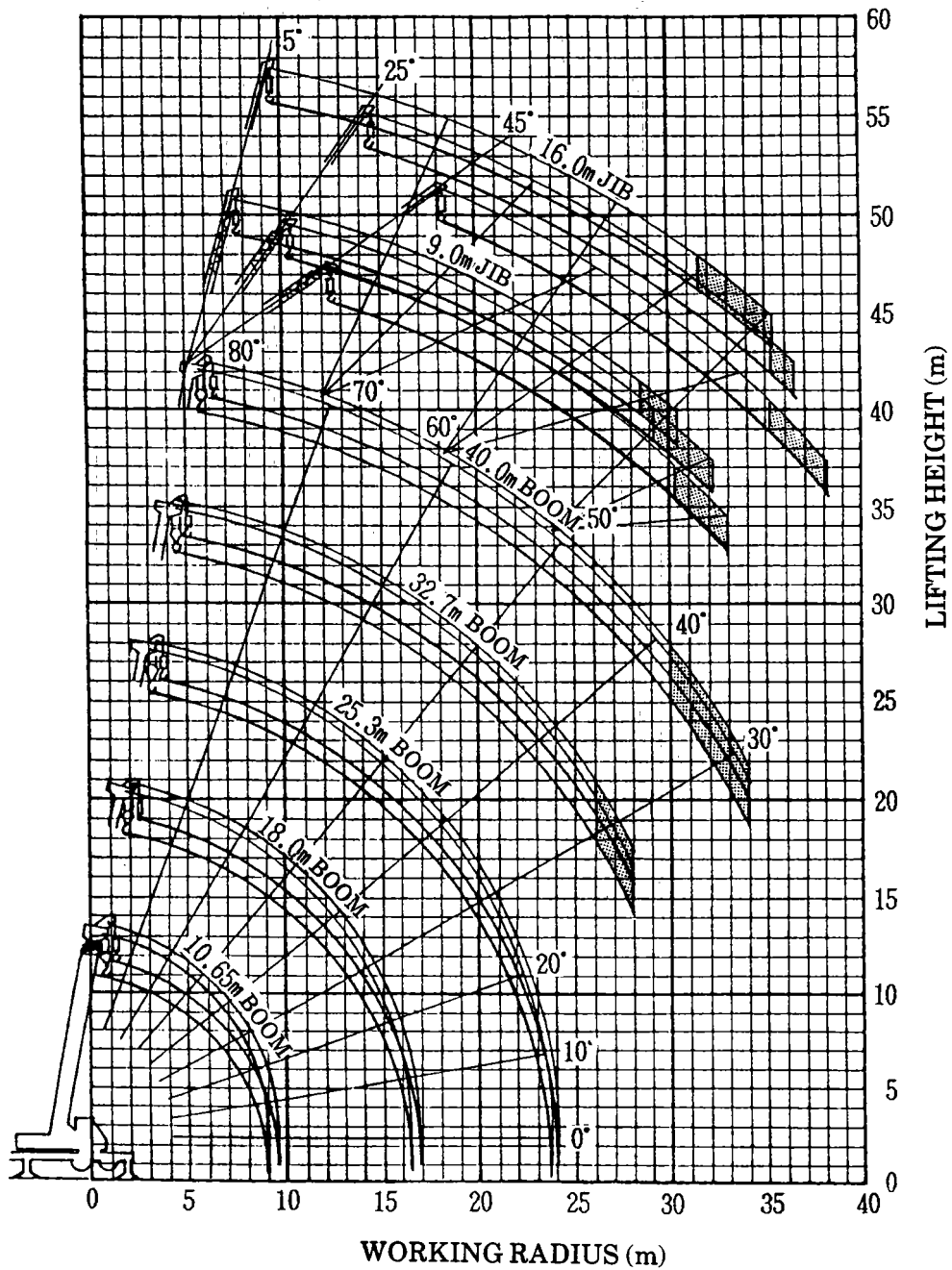
1. The total rated loads shown are for the case when the outriggers are set horizontally on firm ground. The values are based on the crane strength.
2. The weights of slings and hooks (400kg for a 45 ton capacity hook, 200kg for a 12 ton capacity hook and 100kg for a 4 ton capacity hook) are included 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 chart below shows the standard number of part lines for each boom length. The load per line should not exceed 4.0t for both the main winch and the auxiliary winch.

A	10.65m	18.0 m	25.3 m	32.7 m	40.0 m	J
H	11	7	5	4	2	1

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

5. As a rule, free-fall operations 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 (the load per line must be 0.8t or less for both the main and the auxiliary winches) and sudden braking operations must be avoided. Free-fall operations should not be performed without the outriggers.
6. The total rated load for the single top is the same as that of the boom and must not exceed 4.0 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



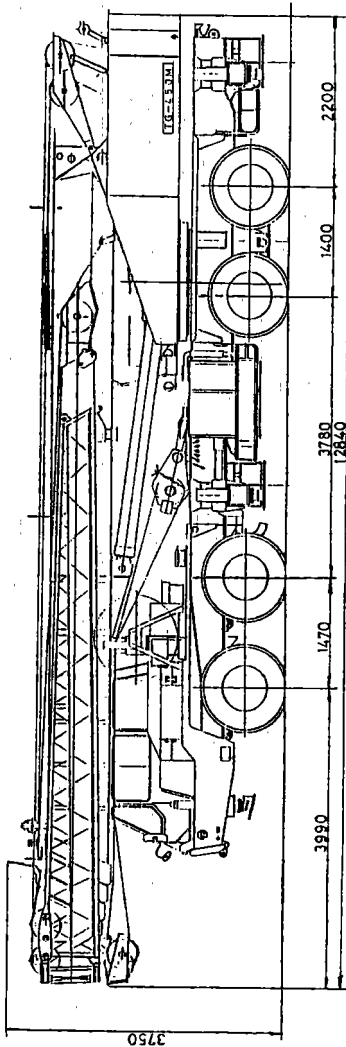
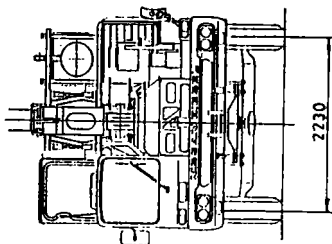
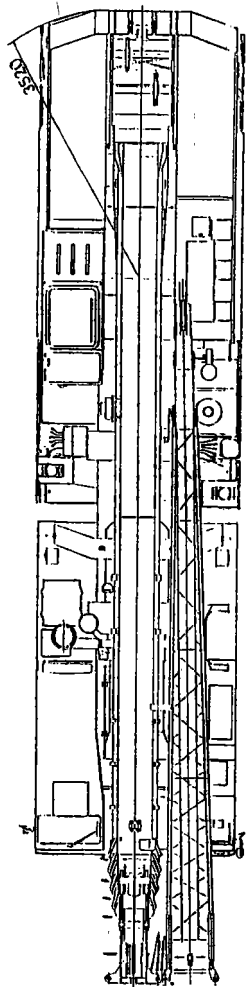
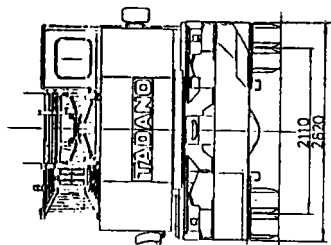
NOTES:

1. The deflection of the boom is not incorporated in the figure above.
2. The above chart is for the case where the outriggers are fully extended and where the front jack are used (over 360°)
3. The shaded area in the diagram applies only to the case when the device for heavy-duty work (option) is mounted.

TG-450M-3-10101

DIMENSIONS (1/100)

K-KG54T



DIMENSIONS (1/100)

P-K450

