

Cranes and consulting Pty Ltd ®

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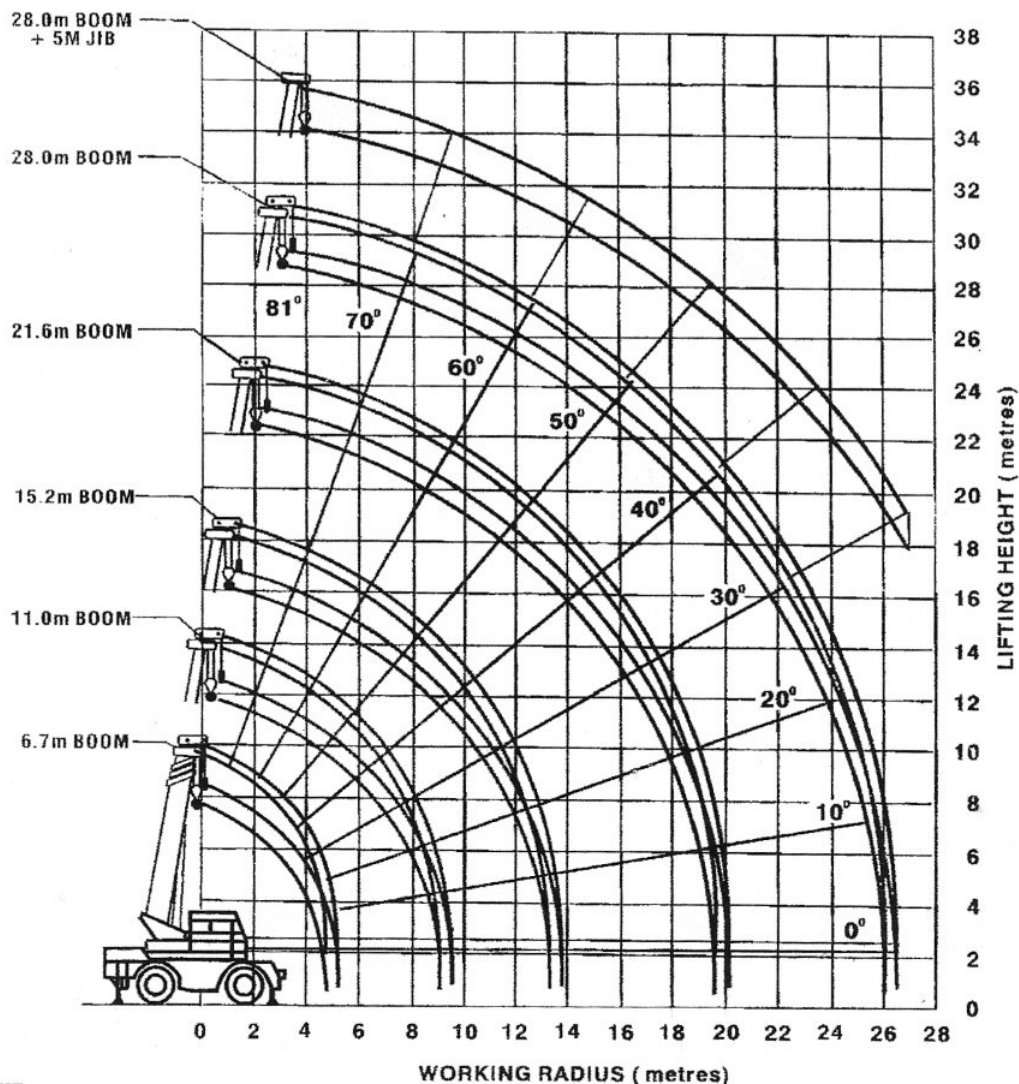
Technical drawing of a KATO 1000 truck with a crane, showing dimensions in millimeters. The drawing includes a side profile view of the truck and a crane. The dimensions are as follows:

- Overall height: 3,400 mm
- Wheelbase: 3,300 mm
- Front overhang: 3,160 mm
- Rear overhang: 2,000 mm
- Total length: 8,460 mm

KATO KR-22H

KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

WORKING RADIUS - LIFTING HEIGHT DIAGRAM



NOTE :

1. This chart does not include any deflection of the jib or boom.
2. This chart only applies when the outriggers have been fully extended.

1-122002ACH - LHD

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KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE CHART 1

TOTAL RATED LOAD IN KILOGRAMS

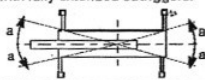
THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

| Working Radius (m) | OUTRIGGERS AT MAXIMUM EXTENSION (5.8m) (360°) | | | | | OUTRIGGERS AT MEDIUM EXTENSION (4.6m) (OVER THE SIDE) | | | | | OUTRIGGERS AT MEDIUM EXTENSION (3.4m) (OVER THE SIDE) | | | | | OUTRIGGERS AT MEDIUM EXTENSION (2.04m) (OVER THE SIDE) | | | | | |
|----------------------------|--------------------------------------------------|---------------|---------------|---------------|---------------|----------------------------------------------------------|---------------|---------------|---------------|---------------|----------------------------------------------------------|---------------|---------------|---------------|---------------|-----------------------------------------------------------|---------------|---------------|---------------|---------------|-----|
| | 6.7m BOOM | 11.0m BOOM | 15.2m BOOM | 21.6m BOOM | 28.0m BOOM | 6.7m BOOM | 11.0m BOOM | 15.2m BOOM | 21.6m BOOM | 28.0m BOOM | 6.7m BOOM | 11.0m BOOM | 15.2m BOOM | 21.6m BOOM | 28.0m BOOM | 6.7m BOOM | 11.0m BOOM | 15.2m BOOM | 21.6m BOOM | 28.0m BOOM | |
| 3.0 | 22,000 | 12,000 | 12,000 | 8,000 | | 22,000 | 12,000 | 12,000 | 8,000 | | 22,000 | 12,000 | 12,000 | 8,000 | | 7,800 | 7,500 | 7,000 | 7,000 | | |
| 3.5 | 20,000 | 12,000 | 12,000 | 8,000 | | 20,000 | 12,000 | 12,000 | 8,000 | | 15,200 | 12,000 | 12,000 | 8,000 | | 6,100 | 5,800 | 5,400 | 5,600 | | |
| 4.0 | 17,000 | 12,000 | 12,000 | 8,000 | 6,000 | 17,000 | 12,000 | 12,000 | 8,000 | 6,000 | 11,400 | 11,000 | 10,000 | 8,000 | 6,000 | 4,800 | 4,500 | 4,300 | 4,550 | 3,800 | |
| 4.5 | 15,000 | 12,000 | 12,000 | 8,000 | 6,000 | 15,000 | 12,000 | 12,000 | 8,000 | 6,000 | 8,950 | 8,600 | 8,400 | 8,000 | 6,000 | 3,800 | 3,500 | 3,400 | 3,800 | 3,800 | |
| 5.0 | | 12,000 | 12,000 | 8,000 | 6,000 | | 12,000 | 12,000 | 8,000 | 6,000 | | 6,950 | 6,850 | 7,000 | 6,000 | | 2,800 | 2,700 | 3,200 | 3,250 | |
| 5.5 | | 12,000 | 12,000 | 8,000 | 6,000 | | 10,000 | 10,000 | 8,000 | 6,000 | | 5,750 | 5,650 | 6,200 | 6,000 | | 2,200 | 2,100 | 2,650 | 2,750 | |
| 6.0 | | 12,000 | 11,500 | 8,000 | 6,000 | | 8,500 | 8,400 | 8,000 | 6,000 | | 4,800 | 4,700 | 5,400 | 5,300 | | 1,700 | 1,600 | 2,250 | 2,350 | |
| 6.5 | | 11,300 | 10,600 | 8,000 | 6,000 | | 7,200 | 7,100 | 7,900 | 6,000 | | 4,050 | 3,950 | 4,650 | 4,700 | | 1,300 | 1,200 | 1,850 | 2,000 | |
| 7.0 | | 9,700 | 9,400 | 7,850 | 6,000 | | 6,200 | 6,100 | 6,850 | 6,000 | | 3,450 | 3,350 | 4,000 | 4,150 | | 900 | 800 | 1,550 | 1,700 | |
| 8.0 | | 7,350 | 7,200 | 7,100 | 5,900 | | 4,650 | 4,550 | 5,300 | 5,650 | | 2,500 | 2,400 | 3,050 | 3,300 | | | | 1,000 | 1,200 | |
| 9.0 | | 5,700 | 5,600 | 6,350 | 5,350 | | 3,600 | 3,500 | 4,200 | 4,500 | | 1,800 | 1,700 | 2,350 | 2,650 | | | | | | |
| 10.0 | | | 4,500 | 5,250 | 4,800 | | | 2,700 | 3,400 | 3,700 | | | 1,100 | 1,850 | 2,100 | | | | | | |
| 11.0 | | | 3,600 | 4,350 | 4,300 | | | 2,050 | 2,750 | 3,050 | | | 600 | 1,400 | 1,650 | | | | | | |
| 12.0 | | | 2,900 | 3,650 | 3,850 | | | 1,500 | 2,250 | 2,550 | | | | 1,000 | 1,300 | | | | | | |
| 13.0 | | | 2,300 | 3,050 | 3,400 | | | 1,050 | 1,850 | 2,100 | | | | 650 | 950 | | | | | | |
| 14.0 | | | | 2,600 | 2,900 | | | | 1,450 | 1,750 | | | | 500 | 700 | | | | | | |
| 15.0 | | | | 2,200 | 2,500 | | | | 1,100 | 1,450 | | | | (13.5m) | 450 | | | | | | |
| 16.0 | | | | 1,800 | 2,100 | | | | 850 | 1,150 | | | | | | | | | | | |
| 17.0 | | | | 1,500 | 1,800 | | | | 600 | 900 | | | | | | | | | | | |
| 18.0 | | | | 1,200 | 1,550 | | | | 400 | 700 | | | | | | | | | | | |
| 19.0 | | | | 1,000 | 1,300 | | | | | 500 | | | | | | | | | | | |
| 20.0 | | | | 850 | 1,100 | | | | | 350 | | | | | | | | | | | |
| 21.0 | | | | (19.6m) | 950 | | | | | | | | | | | | | | | | |
| 22.0 | | | | | 800 | | | | | | | | | | | | | | | | |
| 23.0 | | | | | 650 | | | | | | | | | | | | | | | | |
| 24.0 | | | | | 500 | | | | | | | | | | | | | | | | |
| 25.0 | | | | | 350 | | | | | | | | | | | | | | | | |
| CRITICAL ANGLE | - | - | - | - | - | - | - | - | 18° | 38° | - | - | - | 30° | 42° | 53° | - | 30° | 55° | 62° | 69° |
| STANDARD HOOK | 22t HOOK | | | | | 22t HOOK | | | | | 22t HOOK | | | | | 22t HOOK | | | | | |
| HOOK WEIGHT | 160kg | | | | | 160kg | | | | | 160kg | | | | | 160kg | | | | | |
| NUMBER OF PULLS OF ROPE | 7 | 4 | 4 | 3 | 2 | 7 | 4 | 4 | 3 | 2 | 7 | 4 | 4 | 3 | 2 | 7 | 4 | 4 | 3 | 2 | |

NOTES:

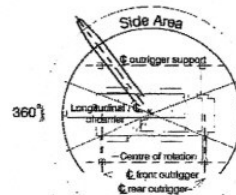
- These capacities are based on condition that the crane is set on firm ground horizontally. Those within the bold lines are based on the crane's strength and those below on its stability.
- Total rated loads below the bold lines do not exceed 75% of tipping load.
- The weights of the lifting hooks are set out in the chart below, the weight of slings and all similarly used load handling devices must be added to the weight of the load.

| | | |
|------------------|----------|---------|
| CAPACITY OF HOOK | 22,000kg | 3,400kg |
| WEIGHT OF HOOK | 160kg | 60kg |
- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- The working radius details shown in chart 2 refer to operations with 28.0 metres of boom. For operations with other boom lengths such operations should be performed on the basis of boom angle only, regardless of boom length.
- The outriggers may be extended and fixed at different settings i.e. fully extended 5.8m and two intermediate settings of 4.6m and 3.4m.
- The crane's rated capacity is generally determined by the amount the outriggers are extended, particularly over the side, it is therefore necessary to refer to the relevant rated load charts prior to commencing work. Load ratings over the front and rear have been determined with fully extended outriggers.



| Outrigger Extension | Medium Extension (4.6m) | Medium Extension (3.4m) | Minimum Extension |
|---------------------|-------------------------|-------------------------|-------------------|
| Region a° | 35 | 20 | 3 |

- The jib must not be used when the outriggers are at minimum extension.
- The rated load when using the rooster sheave is the boom rated load less the weight of the 22 ton hook (160kg) or 3,400kg, whichever is less.



WORKING RADIUS DIAGRAM

- If the boom length exceeds the specified value, refer to the rated lifting capacities for that boom length and the next highest boom length. The crane should be operated within the smaller lifting capacity.
- If operating the boom with either the jib or rooster sheave installed, the weights of the lifting equipment plus 440kg for the case of the jib or 90kg for the case of the rooster sheave will need to be subtracted from the rated load.
- With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.
- Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,300kg.

| BOOM LENGTH | 6.7m | 11.0m | 15.2m | 21.6m | 28.0m | SINGLE TOP |
|-------------------|------|-------|-------|-------|-------|------------|
| NO. OF PART LINES | 7 | 4 | 4 | 3 | 2 | 1 |

- Free fall operation should be performed only without any load on the hook.
- Special weather caution: Should wind gusts exceed 10m/sec postpone the operation. Refer to the operation and maintenance manual.

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KATO KR-22H

KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

CHART 2

TOTAL RATED LOAD IN KILOGRAMS

THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

| 28.0m BOOM + 5.0m JIB | | | | | | | | |
|-------------------------------------------|-----------------------|--------------------|---------------------------------------------------------|-----------------------|--------------------|---------------------------------------------------------|-----------------------|--------------------|
| OUTRIGGERS FULLY EXTENDED(5.8m) (360°) | | | OUTRIGGERS AT MEDIUM EXTENSION(4.6m) (OVER THE SIDE) | | | OUTRIGGERS AT MEDIUM EXTENSION(3.4m) (OVER THE SIDE) | | |
| Boom Angle (Degrees) | Working Radius (m) | Rated Load (Kg) | Boom Angle (Degrees) | Working Radius (m) | Rated Load (Kg) | Boom Angle (Degrees) | Working Radius (m) | Rated Load (Kg) |
| 81.0 | 4.0 | 3,100 | 81.0 | 4.0 | 3,100 | 81.0 | 4.0 | 3,100 |
| 73.0 | 8.5 | 3,100 | 73.0 | 8.5 | 3,100 | 73.0 | 8.5 | 3,100 |
| 68.8 | 11.0 | 3,100 | 68.8 | 11.0 | 3,100 | 68.8 | 10.8 | 1,900 |
| 65.0 | 13.0 | 2,650 | 65.0 | 13.0 | 2,300 | 65.0 | 12.7 | 1,250 |
| 60.0 | 15.5 | 2,200 | 60.0 | 15.4 | 1,550 | 60.0 | 15.0 | 650 |
| 57.0 | 17.0 | 2,000 | 57.0 | 16.8 | 1,200 | 57.0 | 16.5 | 350 |
| 56.0 | 17.4 | 1,850 | 56.0 | 17.2 | 1,100 | 56.0 | 16.9 | 300 |
| 50.0 | 20.1 | 1,250 | 50.0 | 19.9 | 600 | | | |
| 45.0 | 22.1 | 900 | 45.0 | 22.0 | 300 | | | |
| 40.0 | 23.9 | 650 | | | | | | |
| 35.0 | 25.6 | 450 | | | | | | |
| 30.0 | 27.1 | 300 | | | | | | |
| CRITICAL ANGLE 25° | | | 42° | | | 54° | | |

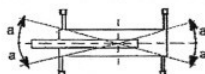
NOTES :

- These capacities are based on condition that the crane is set on firm ground horizontally. Those within the bold lines are based on the crane's strength and those below on it's stability.
- Total rated loads below the bold lines do not exceed 75% of tipping load.
- The weights of the lifting hooks are set out in the chart below, the weight of slings and all similarly used load handling devices must be added to the weight of the load.

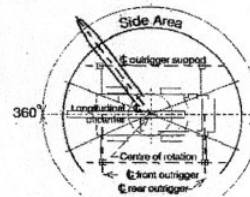
| | | |
|------------------|----------|---------|
| CAPACITY OF HOOK | 22,000kg | 3,400kg |
| WEIGHT OF HOOK | 160kg | 60kg |

- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- The working radius details shown in this chart refer to operations with 26.0 metres of boom. For operations with other boom lengths such operations should be performed on the basis of boom angle only, regardless of boom length.
- The outriggers may be extended and fixed at different settings i.e. fully extended 5.8m and two intermediate settings of 4.6m and 3.4m.
- The crane's rated capacity is generally determined by the amount the outriggers are extended, particularly over the side, it is therefore necessary to refer to the relevant rated load charts prior to commencing work. Load ratings over the front and rear have been determined with fully extended outriggers.
- Although the rated loads for the "Over front" and "Over rear" ranges are the same as those of the "Outriggers fully extended" condition, the front and rear ranges (angles) will differ according to the width to which the outriggers are extended.

| Outrigger Extension | Medium Extension(4.6m) | Medium Extension(3.4m) | Minimum Extension |
|-----------------------|------------------------|------------------------|-------------------|
| Region a ^o | 35 | 20 | 3 |



- The rated load when using the rooster sheave is the boom rated load less the weight of the 22 ton hook (160kg) or 3,400kg, which ever is less.



WORKING RADIUS DIAGRAM

- If the boom length exceeds the specified value, refer to the rated lifting capacities for that boom length and the next highest boom length. The crane should be operated within the smaller lifting capacity.
- If operating the boom with either the jib or rooster sheave installed, the weights of the lifting equipment plus 440kg for the case of the jib or 90kg for the case of the rooster sheave will need to be subtracted from the rated load.
- With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.
- Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,900kg.

| BOOM LENGTH | 6.7m | 11.0m | 15.2m | 21.6m | 28.0m | SINGLE TOP |
|-------------------|------|-------|-------|-------|-------|------------|
| NO. OF PART LINES | 7 | 4 | 4 | 3 | 2 | 1 |

- Free fall operation should be performed only without any load on the hook.
- Special weather caution: Should wind gusts exceed 10m/sec postpone the operation. Refer to the operation and maintenance manual.

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KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

CHART 3

TOTAL RATED LOAD IN KILOGRAMS

THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

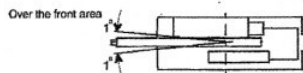
| WORKING RADIUS (m) | WITHOUT OUTRIGGERS | | | | | | | | | | | |
|---------------------|--------------------|-------|-------|-------|-------|-------|----------------------------------------|-------|-------|-------|-------|-------|
| | STATIONARY | | | | | | PICK UP AND CARRY (SPEEDS UP TO 2km/h) | | | | | |
| | BOOM LENGTHS | | | | | | BOOM LENGTHS | | | | | |
| | 6.7m | | 11.0m | | 15.2m | | 6.7m | | 11.0m | | 15.2m | |
| | FRONT | 360° | FRONT | 360° | FRONT | 360° | FRONT | 360° | FRONT | 360° | FRONT | 360° |
| 3.0 | | 6,000 | | 5,500 | | 5,200 | | 4,800 | | 4,400 | | 4,000 |
| 3.5 | 8,500 | 4,500 | 8,500 | 4,100 | 8,000 | 3,800 | 6,800 | 3,600 | 6,400 | 3,300 | 5,900 | 3,000 |
| 4.0 | 8,500 | 3,300 | 8,500 | 3,200 | 8,000 | 3,000 | 6,800 | 2,650 | 6,400 | 2,550 | 5,900 | 2,400 |
| 4.5 | 7,500 | 2,550 | 7,200 | 2,550 | 6,500 | 2,400 | 6,000 | 2,050 | 5,500 | 2,050 | 5,000 | 1,900 |
| 5.0 | | | 6,100 | 2,000 | 5,400 | 1,900 | | | 4,750 | 1,500 | 4,300 | 1,400 |
| 5.5 | | | 5,100 | 1,550 | 4,550 | 1,500 | | | 4,100 | 1,050 | 3,650 | 1,000 |
| 6.0 | | | 4,250 | 1,200 | 3,850 | 1,150 | | | 3,400 | 650 | 3,100 | 600 |
| 6.5 | | | 3,550 | 900 | 3,300 | 850 | | | 2,850 | | 2,650 | |
| 7.0 | | | 3,000 | 650 | 2,800 | | | | 2,400 | | 2,250 | |
| 8.0 | | | 2,150 | | 2,050 | | | | 1,650 | | 1,600 | |
| 9.0 | | | 1,550 | | 1,500 | | | | 1,000 | | 1,000 | |
| 10.0 | | | | | 1,000 | | | | | | 500 | |
| 11.0 | | | | | 600 | | | | | | | |
| CRITICAL BOOM ANGLE | - | - | - | 30° | 30° | 56° | - | - | - | 42° | 35° | 60° |

NOTES :

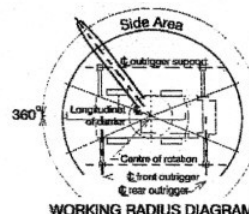
- These capacities are based on condition that the crane is set on a firm and level surface. Those within the bold lines are based on crane strength and those below on it's stability. The tyres must be filled to the prescribed pneumatic pressure (9.0kg/cm²) and the suspension lock cylinders engaged.
- Total rated load for the crane while stationary on wheels does not exceed 75% of tipping load.
- Total rated load for the crane during pick up and carry operations does not exceed 66.7% of tipping load.
- The weights of the lifting hooks are set out in the chart below, the weight of slings and all similarly used load handling devices must be added to the weight of the load.

| | | |
|------------------|----------|---------|
| CAPACITY OF HOOK | 22,000kg | 3,400kg |
| WEIGHT OF HOOK | 160kg | 60kg |

- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- Over the front lifting performance is different to 360° lifting performance. Great care must be taken when transferring from one specific area to the other since there may be a distinct danger of overloading. Refer to rated load charts.



- Load ratings with the single top are the same as the main boom ratings but should not exceed 3,400kg or the boom length exceeds 15.2m.
- With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.



- Free fall operation should be performed only without any load on the hook.
- The parking brake must be applied during lifting while the crane is stationary.
- Pick up and carry operations must be carried out in the low travel mode with the High/Low switch in the "LOW" position.
- During pick up and carry operations keep the load as low as possible and avoid it swaying. Do not exceed 2.0 km/h while travelling, take particular care while turning and avoid sudden acceleration and braking.
- Do not operate any of the crane functions while the crane is mobile.
- Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,300kg.
- In addition to the foregoing notes reference must also be made to the information provided on the other notices and charts.

| | | | | |
|-------------------|------|-------|-------|------------|
| BOOM LENGTH | 6.7m | 11.0m | 15.2m | SINGLE TOP |
| NO. OF PART LINES | 7 | 4 | 4 | 1 |

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