SINGLE LEVER CONTROL
4 SECTION "FULL POWER" BOOM:
Each section of boom has an independent hydraulic cylinder, permitting the boom length quite free on extension or retraction within the range from minimum 11 m to maximum 35 m in length. Controlled by only one lever.

NEW CONTROLLED FREE FALL "FREOMATIC" WINCHES
ENSURE SPEEDY OPERATION:
Tandem-drive two speed main and auxiliary winches are driven by high-torque hydraulic motor, having automatic brakes and clutches. This mechanism enables the safe operation of "Free Fall" or "Power Lowering" of the hook.

"GLIDE-MASTER" PLANETARY SLEWING:
"Glide-Master" planetary slewing system enables smooth, precise slewing operation, and in addition a hydrostatic controlled disk brake is provided.

FULL VISION SUPERSTRUCTURE CAB:
Provided with safety glass in all windows and all necessary control levers, gauges, instruments, etc. are well arranged at convenient location for the operator. A comfortable reclining seat gives no fatigue to the operator.

AUTOMATIC SAFETY CUT-OUT: (A.S.L.I.)
Automatic Safety Load Indicator shows continuously both the rated allowable load and the actual lifting status along the boom length and working radius. For a safe operation, a buzzer warns of the danger as soon as the crane operation reaches any overload condition and then the hydraulic power is cut off automatically in the event of dangerous excess. (optional)
SUPERSTRUCTURE

CRANE PERFORMANCE

- Boom length
  - (Full power 4 section): 11m ~ 35m
  - 8.5m ~ 13.5m
  - -2.5° ~ 80°
  - 0.16m/sec.
- Fly jib length:
- Boom derricking angle:
- Boom telescoping speed:
- Extension:

- Hoist and lower rope speed
  - Main winch:
    - High: 91.5m/min, (Mean)
    - Low: 41.7m/min, (Mean)
  - Auxiliary winch:
    - High: 91.5m/min, (Mean)
    - Low: 41.7m/min, (Mean)
- Hoist and lower hook speed
  - Main winch:
    - High: 8.31m/min, (Mean)
    - Low: 3.75m/min, (Mean)
  - Auxiliary winch:
    - High: 91.5m/min, (Mean)
    - Low: 41.7m/min, (Mean)
  - Slewing speed: 1.64 rpm.

WIRE ROPE FOR HOISTING

- Main winch
  - Type: 6 x Fi (29) I.W.R.C.
  - Parts of line: 11
  - Length: 175m x 18mm dia.

- Auxiliary winch
  - Type: 6 x Fi (29) I.W.R.C.
  - Parts of line: 1
  - Length: 110m x 18mm dia.

HYDRAULIC SYSTEM

- Oil pump:
- Hoist motor:
- Slewing motor:
- Control valve:
- Cylinder:
  - 3 section gear type
  - Radial piston type
  - Radial piston type
  - 3 position 4 way double-acting type with integral check, and relief valves.
  - Double acting type with safety check valve or balancing valve.
RATED LIFTING CAPACITIES

1. The rated lifting capacities are the maximum loads guaranteed on a firm level ground and include the weight of hook block and other lifting equipments. The capacities in the green area are based on the structural strength.

<table>
<thead>
<tr>
<th>Hook</th>
<th>for 45 ton</th>
<th>for 12 ton</th>
<th>for 8 ton</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>450 kg</td>
<td>250 kg</td>
<td>120 kg</td>
<td></td>
</tr>
</tbody>
</table>

2. The working radii as given in the table are the actual values including the deflection of the booms. Therefore, operate the crane based on the working radius. But working radius for operation with the jib should be the one for operation with the fully extended boom (35 m). Only boom angle has an effect on operation with the jib when the boom is not fully extended.

3. The rated lifting capacities for operation with outriggers are based on use of outriggers fully extended, the machine set horizontal and the load lifted at either of the rear and sides as shown below.

4. The rated lifting capacities for operation without outriggers is based on best condition of the site, air pressure and the ground surface.

5. When the boom length exceeds the rated one, operation must be carried out under the lifting capacities rated for the larger boom length. But when the boom length is comprised between 27.0 m and 31.0 m and the working radius exceeds 10 m, then operation must be carried out the rated lifting capacities for 27.0 m boom. And in the same way when the boom length is comprised between 31.0 m and 35.0 m and the working radius exceeds 14 m, then operation must be carried out the rated lifting capacities for 31.0 m boom.

6. When using the boom with the jib installed, 1750 kg should be subtracted from rated lifting capacities besides the weight of hoisting equipment, etc.

7. Tip over angles at each boom are as given in the right table. Don’t reduce boom angle smaller than given therein.

8. The minimum number of parts of line is determined so that weight per part will not exceed 4000 kg. The number of parts of line in terms of the boom length is as shown below.

9. The crane will tip over or damaged if operated with a load other than specified in the rated lifting capacity table or not conforming to correct handling.
### GENERAL DATA

<table>
<thead>
<tr>
<th>MODEL</th>
<th>NK-450</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER MODEL</td>
<td>MITSUBISHI K352L</td>
</tr>
<tr>
<td>TOTAL LENGTH mm</td>
<td>13050</td>
</tr>
<tr>
<td>TOTAL WIDTH mm</td>
<td>2750</td>
</tr>
<tr>
<td>TOTAL HEIGHT mm</td>
<td>3800</td>
</tr>
<tr>
<td>ENGINE</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>MITSUBISHI 8DC20A</td>
</tr>
<tr>
<td>Max. Output PS/rpm</td>
<td>265/2500</td>
</tr>
<tr>
<td>Max. Torque kg m/rpm</td>
<td>89/1200</td>
</tr>
<tr>
<td>GROSS WEIGHT Kg</td>
<td>approx. 38,000</td>
</tr>
<tr>
<td>FRONT Kg</td>
<td>approx. 15,000</td>
</tr>
<tr>
<td>REAR Kg</td>
<td>approx. 23,000</td>
</tr>
<tr>
<td>WHEEL BASE mm</td>
<td>6250</td>
</tr>
<tr>
<td>TREAD FRONT mm</td>
<td>2240</td>
</tr>
<tr>
<td>TREAD REAR mm</td>
<td>2065</td>
</tr>
<tr>
<td>MAX. SPEED Km/h</td>
<td>70</td>
</tr>
<tr>
<td>MIN. SPEED (at max. engine torque) Km/h</td>
<td>2.4</td>
</tr>
<tr>
<td>TURNING RADIUS m</td>
<td>11.5</td>
</tr>
<tr>
<td>GRADEABILITY (%)</td>
<td>26</td>
</tr>
<tr>
<td>DRIVE SYSTEM</td>
<td>8x4</td>
</tr>
<tr>
<td>CLUTCH TYPE</td>
<td>Dry single disc</td>
</tr>
<tr>
<td>TRANSMISSION SYSTEM</td>
<td>Synchronmesh &amp; Constantmesh</td>
</tr>
<tr>
<td>TIRE FRONT</td>
<td>12.00-20-18PRx4</td>
</tr>
<tr>
<td>TIRE REAR</td>
<td>12.00-20-18PRx8</td>
</tr>
<tr>
<td>FUEL TANK CAPACITY</td>
<td>300 L.t.</td>
</tr>
<tr>
<td>STEERING TYPE</td>
<td>Ball nut with power assist</td>
</tr>
<tr>
<td>ELECTRICAL TYPE</td>
<td>24V starting, lighting, instrumental light, beam headlight, tail and stop-light, windshield wiper, horn and turn signal.</td>
</tr>
</tbody>
</table>

- MACHINE is subject to the user's specifications and any chassis having proper capacity and dimension are applicable.
- We reserve the right to make specification or equipment changes without notice.
KATO
KATO WORKS CO., LTD.

HEAD OFFICE:
No. 9-37, 1-chome, Higashi-Ohi, Shinagawa-ku,
Tokyo, Japan
Tokyo 471-8111

FOREIGN DEPARTMENT:
The 17th Mori Bldg., Shiba Nishikubo
Sakuragawa-cho 2, Minato-ku, Tokyo, Japan
Tokyo 501-8111

Tel:
Cable Address:
Telex:

0 222-4519 (CRKATO J)