

# JONES CRANES ES

## JC 616

**Diesel hydraulic  
rough terrain crane**



- Maximum capacity - 16.000 kg
- Three section boom 7.80 - 18.80 m
- Maximum travel speed - 40 km/h
- Maximum tip height - 27.10 m

**THE JONES NAME FOR CRANES**

## Power Unit

- Engine** Cummins 4 cylinder turbocharged water cooled diesel developing 87 kW (116 bhp) at 2500 rpm.
- Transmission** Torque converter with full power shift giving 6 forward and 6 reverse gears.

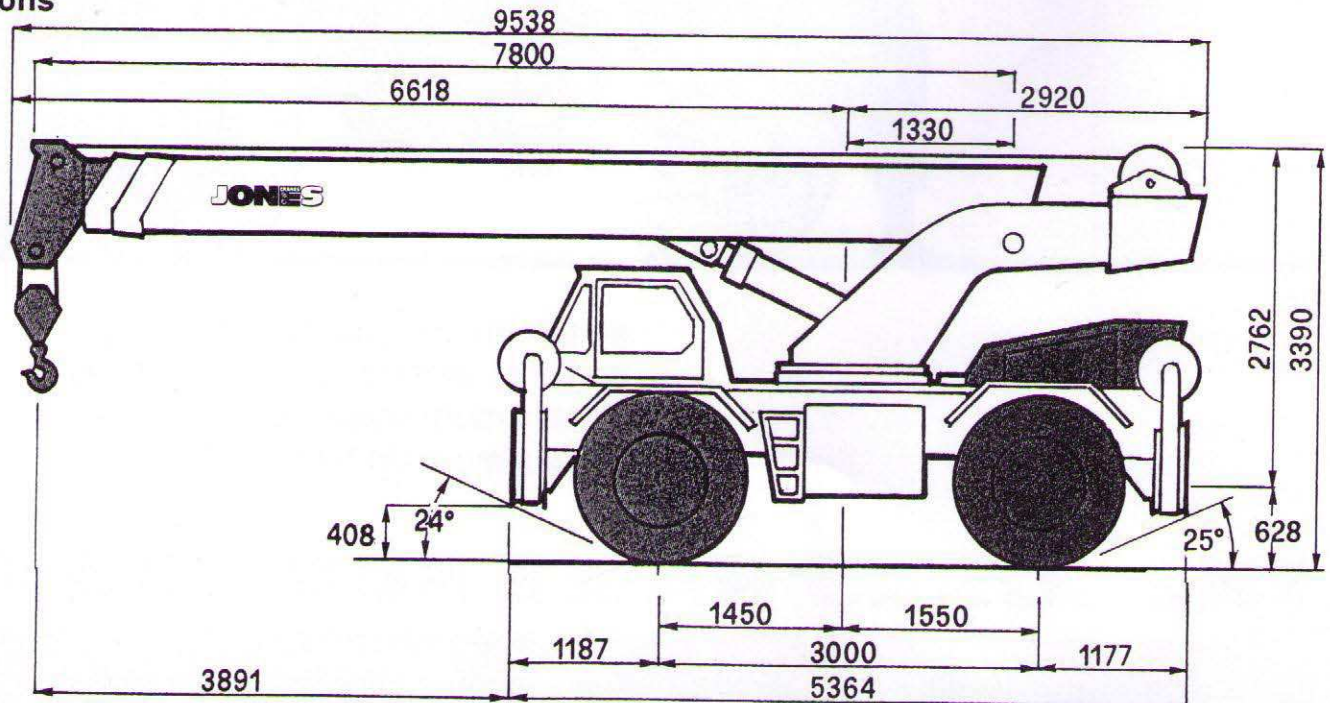
## Chassis

- Drive** 4 x 4 x 4
- Construction** Purpose designed box type section frame fabricated from high tensile steel plate.
- Front Axle** Rigidly mounted drive/steer axle with central differential and planetary reduction hubs. Full power steering controlled by steering wheel in driver's cab.
- Rear Axle** Oscillating drive/steer axle with central differential and planetary reduction hubs. Hydraulic power steering with rear wheel steer indicator. Steering lock for road travel. Automatically operated rear axle lock out.
- Tyres** 14,00 x 24 earthmover type.
- Brakes** Dual circuit air over hydraulic service brakes to all wheels. Cable operated disc type parking brake to front wheels.
- Fuel Tank** 205 Litres ( 45 Gallons )
- Hydraulic Pumps** Three gear type hydraulic pump system. One tandem pump and one single pump. Total capacity 333 litres/min.
- Hydraulic Oil** Tank capacity 430 litres ( 95 Gallons )
- Outriggers** Four independent cantilever type outrigger beams operated by double acting hydraulic rams operated from the driver's cab.

## Crane Superstructure

- Superstructure Frame** Fabricated high tensile steel structure onto which is mounted the telescopic jib, hoist unit, derricking cylinder and counterweight. The superstructure is capable of unlimited slewing in either direction and rotates on a slew bearing that is sealed against the ingress of dust and water.
- Control Valves** Individual valves allowing independent or simultaneous operation of the crane functions operated by control levers in Driver's cab
- Hoist Motion** Three speed hydraulic motor driven double reduction gear unit with 'fail safe' spring applied disc brake and counterbalance valve.
- Derrick Motion** Double acting hydraulic cylinder with lock valve allowing Boom elevation from 0° to + 75°.
- Slew Motion** Hydraulic driven slew pinion through planetary double reduction gearbox. Multidisc type slew brake with hand operated positive slew lock.
- Boom Telescoping** Double acting hydraulic cylinder with lock valve mounted within the jib structure.
- Main Boom** Three section boom of box type construction comprising base section and two fully powered automatically synchronised sections extending from 7,8 m to 18,8 m.
- Hoist Rope** 14 mm diameter x 110 m non spin.
- Hook Block** Three sheave hook block for maximum duty
- Electrical System** 24 Volt Electrical starting and charging circuits. Full road lighting to EEC requirements.

## Dimensions



## Driver's Cab

|                     |   |
|---------------------|---|
| <b>Construction</b> | Fully enclosed, all steel construction, two door driver's cab mounted on Crane chassis giving maximum all round vision through safety glass windows.  |
| <b>Fittings</b>     | Fully upholstered driver's seat with hydraulic damper, adjustable for height rake and leg length. Cab front screen wiper and rear view mirrors.   |
| <b>Instruments</b>  | Full cab instrumentation for engine and transmission oil pressures and temperature, air pressures, fuel and travel speeds, battery charging, road lighting and direction indicators.  |
| <b>Controls</b>     | Normal automotive road controls including steering wheel for front axle and control switch for rear axle steer, transmission gear selection and forward/reverse shift, high low speeds and 2/4 wheel drive. Crane controls for all functions are mounted in the driver's cab. |

## Safety equipment

|                 |   |
|-----------------|---|
| <b>Standard</b> | Overhoist and overlowering limit switches. Lock valves on all hydraulic cylinders with overload valve on all systems. |
| <b>Optional</b> | Audible and visual rated capacity indicator.  |
| <b>Paint</b>    | High gloss finish Yellow superstructure with grey chassis and operator's cab.   |

## Performance Data.

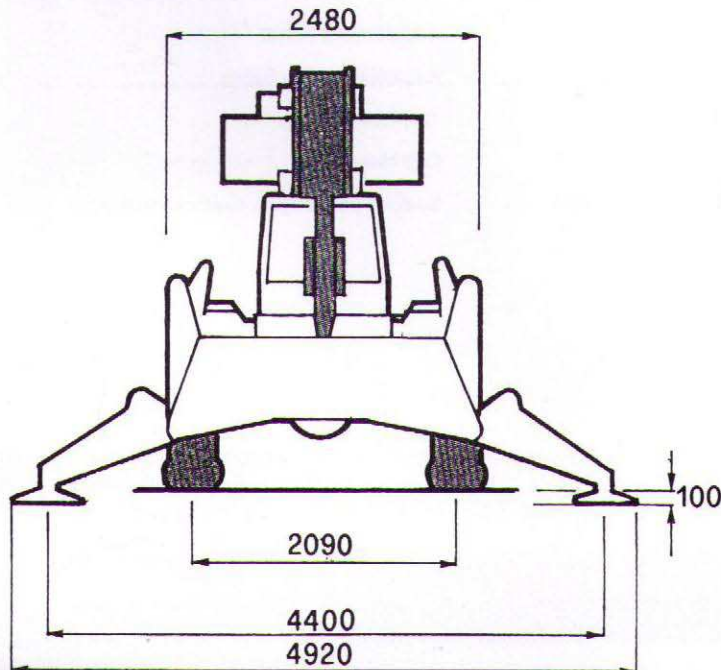
### OPERATING

|  |                             |
|--|-----------------------------|
| <b>Line Pull</b>                         | 4200 kg. ( 41 kN)           |
| <b>Line Speed</b><br>- Fast              | 0 - 92 m/min.<br>3 speed    |
| <b>Boom Derrick Up</b>                   | 34 seconds                  |
| <b>Boom Derrick Down</b>                 | 31 seconds                  |
| <b>Boom extension speed</b>              | 21 m/min                    |
| <b>Slew Speed</b>                        | Up to 2,5 r.p.m.            |
| <b>Travel Speed</b>                      | 40 km/h max. ( 24.8 m.p.h.) |
| <b>Turning Radius</b><br>- 2 wheel steer | 8,506 m between kerbs       |
| - 4 wheel steer                          | 5,656 m between kerbs       |

### GENERAL

|                                      |   |
|--------------------------------------|---|
|                                      | Weight with crane in normal travelling order. |
| <b>Axle Loads</b>                    |   |
| - Front axle                         | 9,500 kg. ( 20948 lbs. )                      |
| - Rear axle                          | 10,100 kg. ( 22270 lbs. )                     |
| - Total weight                       | 19,600 kg. ( 43218 lbs. )                     |
| <b>Maximum gradient</b><br>- unladen | 40%.  |

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## Lifting capacities

Lifting capacities in kilogrammes to BS 1757 : 1986 and DIN 15019.2

| Working Radius (m) | LIFTING CAPACITIES ON OUTRIGGERS -- Main boom length in metres |            |       |            |       |            |       |            |       |            |       |            |
|--------------------|--|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|------------|
|                    | 7.80   |            | 10.00 |            | 12.00 |            | 14.00 |            | 16.00 |            | 18.80 |            |
|                    | 360°   | Over front | 360°  | Over front | 360°  | Over front | 360°  | Over front | 360°  | Over front | 360°  | Over front |
| 3                  | 16000  | 16000      | 14700 | 14700      | 14000 | 14000      | 13500 | 13500      |       |            |       |            |
| 4                  | 13200  | 13200      | 13200 | 13200      | 13200 | 13200      | 12000 | 12000      | 11000 | 11000      |       |            |
| 5                  | 10700  | 10700      | 10700 | 10700      | 10700 | 10700      | 10700 | 10700      | 9600  | 9600       | 8700  | 8700       |
| 6                  | 8400   | 8700       | 8400  | 8700       | 8400  | 8700       | 8400  | 8700       | 8400  | 8700       | 7700  | 7700       |
| 7                  |  |            | 6300  | 7200       | 6300  | 7200       | 6300  | 7200       | 6300  | 7200       | 6300  | 6700       |
| 8                  |  |            | 5000  | 6200       | 5000  | 6200       | 5000  | 6200       | 5000  | 6200       | 5000  | 5800       |
| 9                  |  |            |       |            | 4000  | 5100       | 4000  | 5100       | 4000  | 5100       | 4000  | 5100       |
| 10                 |  |            |       |            | 3300  | 4100       | 3300  | 4100       | 3300  | 4100       | 3300  | 4100       |
| 11                 |  |            |       |            |       |            | 2900  | 3600       | 2900  | 3600       | 2900  | 3600       |
| 12                 |  |            |       |            |       |            | 2400  | 3100       | 2400  | 3100       | 2400  | 3100       |
| 13                 |  |            |       |            |       |            |       |            | 2000  | 2700       | 2000  | 2700       |
| 14                 |  |            |       |            |       |            |       |            | 1800  | 2200       | 1800  | 2200       |
| 15                 |  |            |       |            |       |            |       |            |       |            | 1600  | 2000       |
| 16                 |  |            |       |            |       |            |       |            |       |            | 1400  | 1800       |
| 17                 |  |            |       |            |       |            |       |            |       |            | 1200  | 1600       |

| FREE ON WHEELS - Capacities - kgs<br>Standard tyres 14.00 x 24 |                      |                   |             |                   |
|--|----------------------|-------------------|-------------|-------------------|
| Radius (m)   | Main Boom length (m) | Over front Static | 360° Static | Over front 3 km/h |
| 3  | 7,80                 | 11200             | 8900        | 9200              |
| 4  | 7,80                 | 7700              | 6000        | 6700              |
| 5  | 7,80                 | 6300              | 4000        | 5600              |
| 6  | 7,80                 | 4700              | 2900        | 4200              |
| 7  | 10,00                | 3500              | 2000        | 3200              |
| 8  | 10,00                | 2600              | 1600        | 2300              |
| 9  | 12,00                | 2110              | 1300        | 1800              |
| 10   | 12,00                | 1700              | 1000        | 1400              |
| 11   | 14,00                | 1300              | 700         | 1000              |
| 12   | 14,00                | 1000              | 500         | 700               |
| 13   | 16,00                | 900               |             |                   |
| 14   | 16,00                | 600               |             |                   |

| FLY JIB 360°<br>Capacities on outriggers - kgs. |               |      |      |
|---|---------------|------|------|
| Main Boom angle                                 | 6,5 m fly jib |      |      |
|   | 0°            | 15°  | 30°  |
| 74°   | 2600          | 1900 | 1400 |
| 70°   | 2100          | 1700 | 1300 |
| 60°   | 1600          | 1400 | 1100 |
| 50°   | 1300          | 1100 | 900  |
| 45°   | 1000          | 900  | 700  |
| 4,1 m fly jib                                   |               |      |      |
| 74°   | 2600          | 1900 | 1400 |
| 70°   | 2100          | 1700 | 1300 |
| 60°   | 1600          | 1400 | 1100 |
| 50°   | 1300          | 1100 | 900  |
| 45°   | 1000          | 900  | 700  |

- Specified capacities relate ONLY to the machine as originally manufactured and equipped and used in accordance with CP.3010 'Safe use of cranes'. Any modification invalidates this information.
- The capacities are in accordance with clause 9.1.3c 'STABILITY' of BS1757:1986 'Power Driven Mobile Cranes' with wind forces to tables 5A and 6A of BS 2573, and also comply with DIN 15019.2.
- Capacities are the gross maximum loads which may be freely suspended from the boom head with the crane standing level on a firm supporting surface.
- When determining the suspended load, the weights of hookblock, slings and any lifting attachment must be added to the weight to be lifted.
- When working with Lattice extension stowed main boom capacities must be reduced by 120 kg. Lattice extension erected in working position 480 kg.
- Free on wheels capacities depend on correct tyre pressure, type and condition.
- Radius is measured with the load suspended
- Capacities shown above the bold line are based on factors other than stability. For this reason stability must not be relied upon to indicate capacity.
- Under normal circumstances it is permissible to attempt to telescope the boom in or out with a load suspended, providing the load/radius is within the capacity shown in the duty chart at all times.
- Capacities over the front apply only within 2,5° either side of the crane centre line.
- Suspended loads may be transported at speeds up to 3 km/h. Loads should be carried over the front of the crane whenever possible. Axle locks must be engaged before lifting free-on-wheels except over the front within 2,5° either side of the crane centre line.
- The boom should not be operated even without a load, at any combination of length or radius where there is no lifting capacity indicated on the chart. To do so may result in loss of machine stability.

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