HD19 26.6 - Internal climbing system
Internal climbing: continuous climbing system

- The Application of the HD19 internal climbing system with additional fix frames ‘chock frames’ connected to the mast sections CL1 and CL3 can allow continuous climbing.

- Special pockets on the walls of the elevator shaft allow the positioning of the climbing ladders support beams during climbing and of the crane supports during crane work.
The HD19 mast dimensions has been defined considering the core dimensions and the mast deflections.

Minimum elevator shaft width is: 2550 mm
It is suggested minimum shaft length: 3100 mm

External dimensions: 1920x1940x6000 mm
CTL 430-24  Internal Climbing: main parts

Mast section:
- Base section: n° 1 x CL1
- Intermediate section: n° 1 x CL2
- Collar section: n° 1 x CL3
- Standard sections: n° 4 x STD
- Transfer: n° 1 x TT HD19-HD23

Climbing ladders:
N° 2 x Ladder support beams + ladders

Double acting hydraulic cylinder:
- Stroke max: 1675 mm
- Hoisting time – extend: approx. 4 min
- Hoisting time – retract: approx. 3 min
- Design pressure: 315 bar
- Force at 280 bar: 2050 KN

Hydraulic unit:
Motor: 18,5 KW, 1500min-1
Temperature range: -25 °C/+40° C
**CTL 430-24 – Internal Climbing: performance**

### LUFFING JIB TOWER CRANE

**Specifications:**
- Max. jib length: 60.00 m
- Capacity at max. length: 4.00 t
- Max. capacity:

### FEM1.005 C25 - plane area

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### FEM1.005 C25 - suburban

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Internal climbing system: ‘chock frames’
CTL 430-24  Internal Climbing: minimum core dimensions

Internal elevator shaft dimension:
6520 x 2550 mm

Slipform encumbrance:
25mm thick steel plate shutter
15mm deflection of shutter
+/- 10mm tolerance on core wall
Internal climbing: type of solution

Compact design:
- Mast section 1,9m x 1,9m x 6m
- Hydraulic ram inside base element CL1
- Ladder solution

Supporting telescopic feet
( n° 2+2 parts )

Fix pivoting clamps
( n° 2+2 parts )

Mobile pivoting clamps
( n° 2+2 parts )

Climbing fix beam

Hydraulic cylinder

Climbing movable beam

TEREX®
WORKS FOR YOU.
The ‘top ladder element’ is connected to the telescopic beam by pin connection. On that N° 6 positioning holes are provided to fit every ladders length set-up.

Maximum total length of 36m is considered with n° 1 top ladder + n° 5 intermediate ladders.

Two ladder systems are necessary, one for each side.

Total weight of each ladder system is 5.5 ton, telescopic beam included.
Ladders handling

Ladders supporting beam can be handled using additional service cranes (supplied from customer) connected to the mast section thorough two bolted beams ‘E’ (supplied with the climbing system).

External walkways for access are provided.
Ladder installation

Ladder connections

Ladders are connected each others by pins.

- Along ladders the shaft tips have to be positioned on external side respect mast section;

- On the connection to the the ladder supporting beam shaft tips have to be positioned on external side respect mast section;
Ladder installation

- Below the supports, to adjust level, bolted shim plates are provided;

- The base of the pockets has to be levelled. The contact pressure is 15 N/mm^2 on foot print of 220x180mm: maximum reaction 61 tons;

- After that final position has been set-up, to avoid any possible movement, telescopic beams support have to be fixed to concrete pockets by additional clamps/shims (supplied from customer);

- Minimum pockets dimension are: 300x700mm at span 2180mm.
Operative telescopic beams

-Below the supports, to adjust level, bolted shim plates are provided;

-The base of the pockets has to be levelled. The contact pressure is 16 N/mm^2 on foot print of 220x180mm: maximum reaction 65 tons

-After that final position has been set-up, to avoid any possible movement, telescopic beams support have to be fixed to concrete pockets by additional clamps/shims ( supplied from customer )

-Minimum pockets dimension are: 300x700mm at span 1100mm.

-In order to have the same load on the 4 supports, the tollerance of the supporting levels have to be +/- 1mm respect the theoretical horizontal plane. Shim plates can be used for adjustment.
Carry out climbing phase

1- Slewing tower crane balanced
2- Ladder supporting beam positioned for climbing
3- Mobile pivoting clamps engaged (piston pressure 25 Bar)
4- Chock frames released
5- Supporting telescopic foots unloaded (lifted 20-30mm from pocket support)
6- Supporting telescopic foots retracted
7- Proceed with climbing
End of climbing phase

1- Maneuver to have telescopic foots higher of 20-30mm respect pocket support
2- Supporting telescopic foots opened
3- Maneuver to have telescopic foots 100% loaded
4- Pivoting clamps released
5- Chock frames engaged
6- Ladder supporting beam parked for crane service
7- Crane in service
Internal climbing system: cranes range

Suitable for crane with HD23 lower slew ring connection thorough a transfer mast HD23-HD19:

**CTL**
- CTL180
- CTL260
- CTL340
- CTL430

**CTT**
- CTT332
- CTT361
- CTT561A

**SK**
- SK415
- SK575
Thanks