Jib cranes
"VB" SERIES

"Column mounted" manually rotated, max. 300°
"Wall mounted" manually rotated, max. 270°
for capacity from 125 to 2000 kg

CE

VHT®
www.vhtitaly.com

a brand of Oleomec S.r.l. Via Europa, 90 – 25050 Passirano (BS) Italia

a brand of Oleomec S.r.l. Via Europa, 90 – 25050 Passirano (BS) Italia

“Innovation by tradition”

The jib cranes VHT “VB” series, *manually rotated, available in* ***“Column mounted”*** *and* ***“Wall mounted”*** *execution, are designed to handle goods into a plant or in an outdoor square or to serve workstations.*

The ***jib cranes*** *are characterized by three functions:*

- ***lift*** *vertically a load by means of a unit that generally consists of a chain hoist and specific lifting accessories;*
- ***move*** *the load by means of a trolley, electric or manual, that runs on the arm of the jib crane;*
- ***rotate*** *the load around the rotating axe of the arm by means of the pushing force of the load itself, serving the underlying circular area, bounded by the rotating radius of the arm.*

The jib cranes in “Column mounted” *execution are generally provided for fixing to the ground; the self-supporting column can be fixed to the ground by means of stay bolts, on suitable foundation plinth or, after having checked the suitability, with chemical bolts with suitable counter plate.*

The jib cranes in “Wall mounted” *execution are generally provided to be placed to a vertical surface of an existing structure (eg.: walls, pillars, machine bodies, etc..), by means of a system of brackets and tie rods or with fixing screws.*

THE JIB CRANES VHT “VB”SERIES MANUALLY ROTATED, COLUMN MOUNTED AND WALL MOUNTED EXECUTION

Jib cranes “VB” series

Safety, reliability and…competitive advantages

SAFETY AND RELIABILITY OF THE JIB CRANES VHT

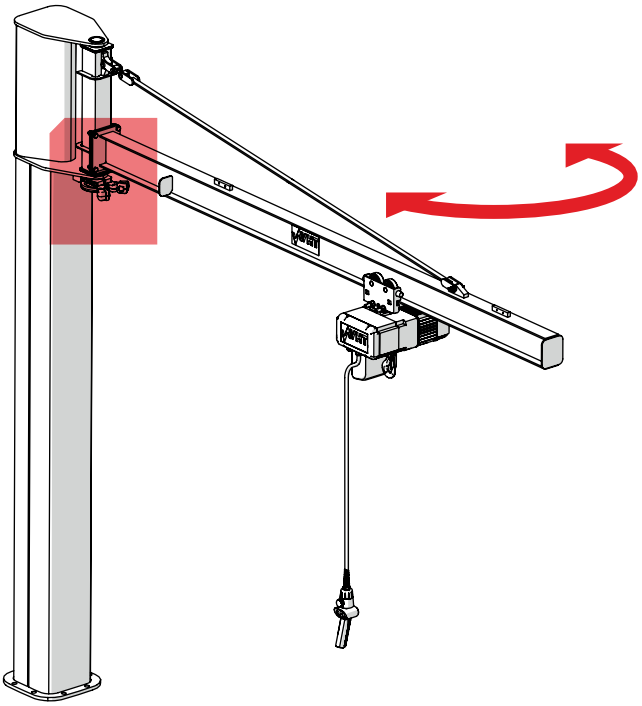
3 YEARS WARRANTY FROM DELIVERY DATE

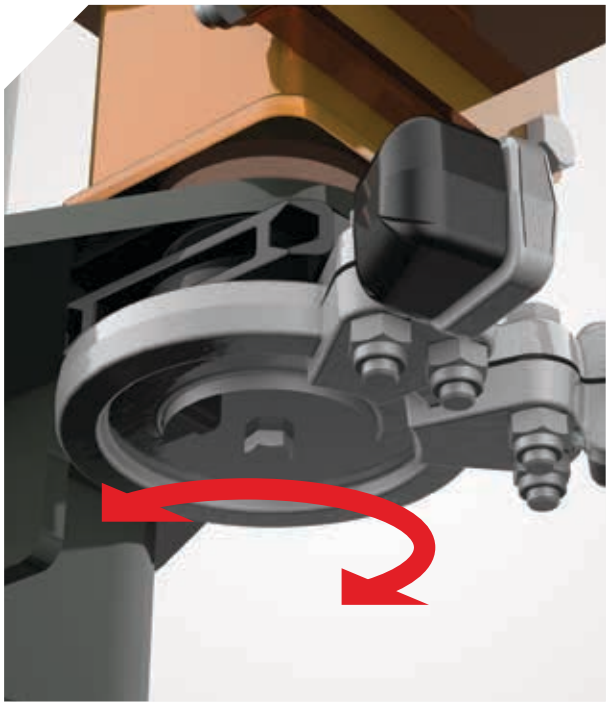
***The jib cranes “VB” series**, manually rotated, **“Column mounted and “Wall mounted”** execution, designed and produced by VHT for **capacity from 125 to 2000 kg**, as well as being characterized by a modern design, guaranteed high security and reliability, thanks to evolutionary project conducted on the basis of a strict "Analysis FMECA" (Failure Mode, Effects, and Criticality Analysis)”.*

***The innovative design**, which allows the maximum arm rotation (300° for all the column-mounted versions and 270° for the wall-mounted versions), gives to the jib cranes **VHT “VB” series** an extraordinary modernity as evidenced by an advanced technical peculiarities consisting of the following **devices and requirements PROVIDED AS STANDARD**:*

***Arm rotating limit device** (patent VHT pending).*

The system has been designed in order to limit the arm rotation to avoid possible interferences and/or collisions against fixed structures of the operating area.
*This device, easily adjustable for the complete rotating arm range, is therefore a **required safety component**, in accordance with the existing European legislation, for the design and construction of machinery (Directive Machine 2006/42/CE - Annex I – Essential safety requirement 4.1.2.6. – Control of movements) .*
Since the device is supplied as standard, its installation doesn’t require a “ declaration of suitability” from the Customer/Installer.

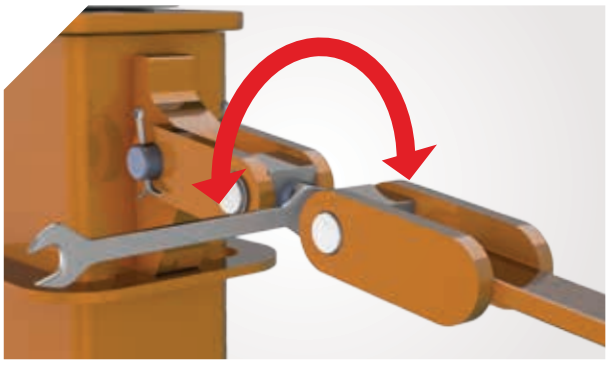


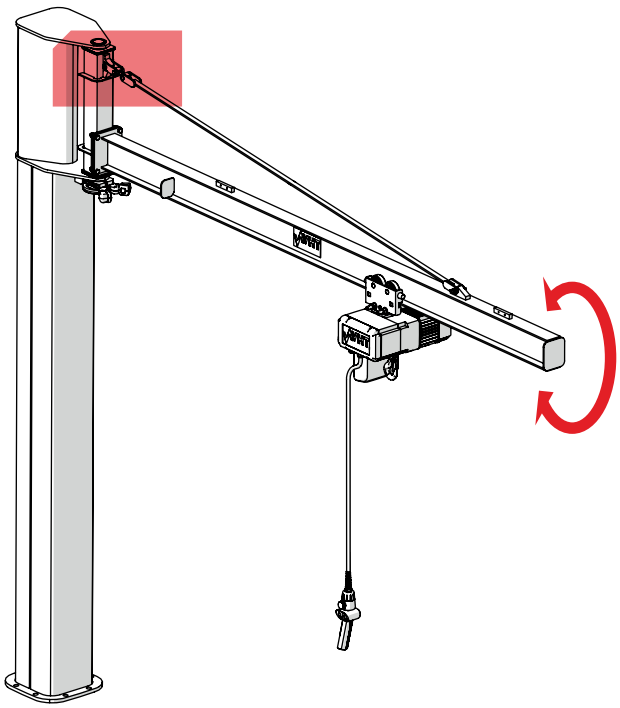


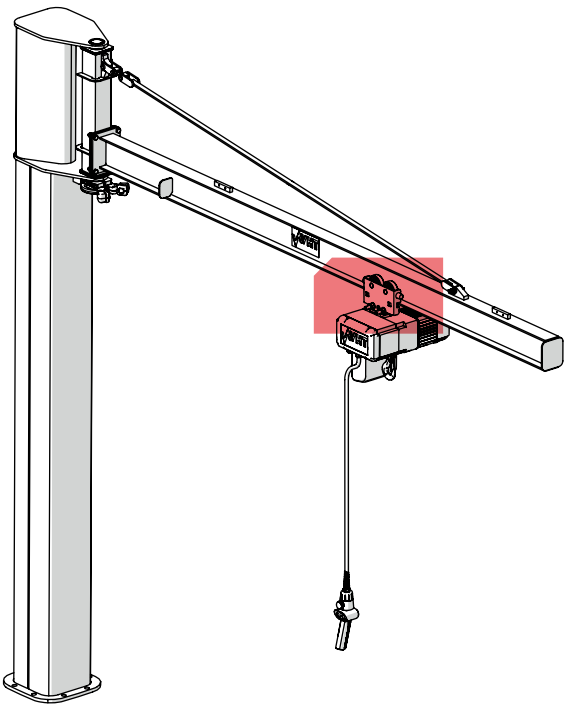
Device for adjusting the flatness of arms overbraced version.
The system allows to set the best value of counterslop of the arm according with the deflection caused by the arm lenght itself and from the height of any column.

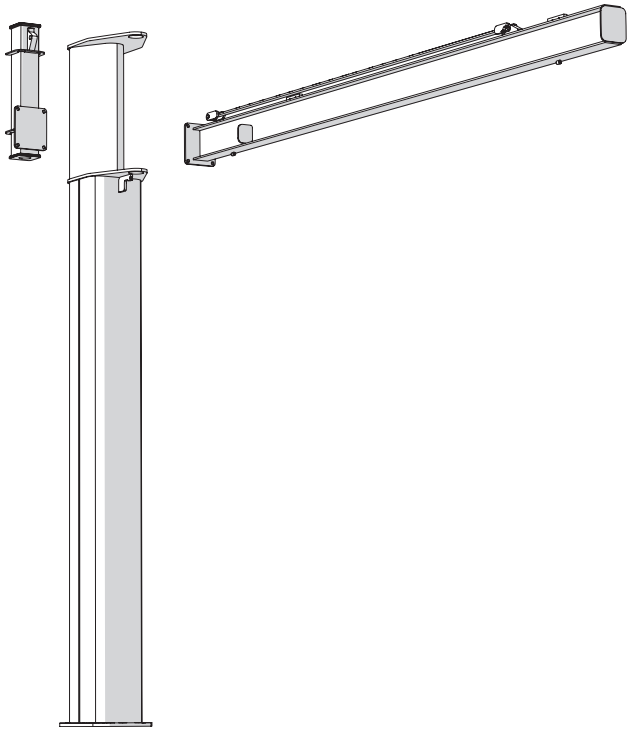
Reduction of the pushing forces and noise in the traverse movements.
The low friction between the wheels and the sliding surfaces they are located in, gives the maximum smoothness and quietness in the push trolleys movement.
In fact the high quality and resistance beams used for the arms are selected with tight tolerances and subjected to sandblasting cycles and are therefore marked by sliding surfaces with low roughness.
Furthermore, to have high smoothness and quietness, the push trolleys, up to 1.000 kg capacity, are provided with wheels in polyamide resin rotating on self-lubricated ball bearings and are provided with guide rollers, in order to avoid any shaving friction.

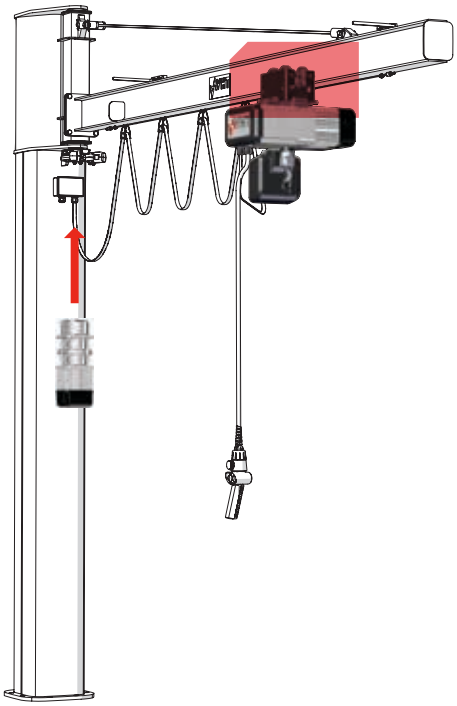
Optimization of time and costs of regular inspections of the trolleys.
As the wheels of the trolleys run on the flange of the beam of the arm, they are easily inspected without disassembly.











Modular design with modular elements.

The system allows to:

- ***Have simple and compactable elements**, disassembled, easy to be packaged, characterized by regular and elementary shapes (such as parallelepipeds) and, therefore, easily and economically handled and delivered.*
- ***Semplify and secure the installation steps** of the single elements composing the over-braced arm, in different executions of column-mounted or wall-mounted jib cranes.*
- ***Reconfigure and redeploy the jib crane**, also after the purchase, following any user's requirement , thanks to a modular design and the use of profiled beams for the arms construction.*

For instance it's always possible(in any time and directly on site) to:
- Replace the push trolley with an electric one;
- Electrify the rotation of the arm with the aid of a dedicated "kit".

The range of the jib cranes VHT "VB" series

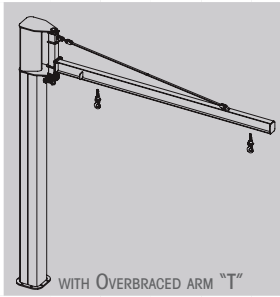
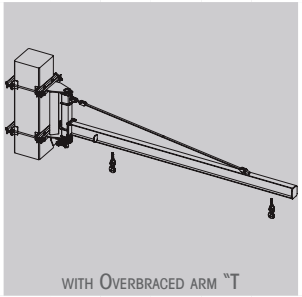
*The range of the **jib crane "VB" series** manually rotated, consisting of N ° 110 basic construction configurations, is realized through the composition of modular elements, in order to obtain machines with **Capacities from 125 to 2,000 kg and Arms from 2 to 8 m**, using:*

- ***N° 5 sizes** in the **"Column mounted"** execution;*
- ***N° 3 sizes** in the **"Wall mounted"** execution;*

Modulated in the following versions:

- ***"VB-C" "Column mounted" series:***
  - *Rotation 300°, types with **Arm:***
    - ***"S"** in **cantilever beam** in rolled profile IPE*
    - ***"T"** in **overbraced beam** in rolled profile IPE or HEAA*
- ***"VB-M" "Wall mounted" series:***
  - *Rotation 270°, types with **Arm:***
    - ***"S"** in **cantilever beam** in rolled profile IPE*
    - ***"T"** in **overbraced beam** in rolled profile IPE o HEAA*

THE 110 BASIC CONFIGURATIONS (VERSIONS) OF THE JIB CRANES "VB" SERIES , ACCORDING TO CAPACITY AND ARM

EXECUTIONS	JIB CRANE "COLUMN MOUNTED" VERSION - "VB-C" SERIES		JIB CRANE "WALL MOUNTED" VERSION- "VB-M" SERIES	
VERSIONS	 WITH OVERBRACED ARM "T"	WITH CANTILEVER ARM "S"	 WITH OVERBRACED ARM "T	WITH CANTILEVER ARM "S"

CAPACITY (kg)	ARM (m) 3	4	5	6	7	8	ARM (m) 2	3	4	5	6	7	ARM (m) 3	4	5	6	7	8	ARM (m) 2	3	4	5	6	7
125																								
250																								
500																								
1000																								
2000																								
SIZE	1		2		3		4			5			1				2				4			

Executions not available

*The columns of the **jib cranes VHT "VB" series**, in **"STANDARD"** execution, are available from the height of the **"Basic"** column, as well as with greater heights, half a meter in half a meter up to a maximum of two meters, than the height of the "BASIC" columns, as shown in the following table:*

STANDARD" HEIGHT OF THE COLUMNS OF THE JIB CRANES VHT "VB-C" SERIES (m)

SIZE	DIMENSION "H" RELATIVE TO THE "BASIC" COLUMN HEIGHT	OTHER COLUMN HEIGHT AVAILABLE AS "STANDARD"			
1	3	3.5	4	4.5	5
2 3	3.5	4	4.5	5	5.5
4 5	4	4.5	5	5.5	6

Note: the dimension "H" related to the "BASIC" column height is referred to the tables of pages 8 and 9

Are also available, on request, jib cranes VHT "VB" series in "NOT STANDARD" execution:

- *Jib cranes with height different from **"STANDARD"**, with column height with "personalized" size, or height exceeding two meters in height or less than the column "Basic".*
- *Jib cranes with **arm lenght different** from **"STANDARD"**, because of "personalized" size, or shorter than the standard lenght limit.*

Classification, criteria of choice and limit use

*The **jib cranes VHT "VB"** series are designed and classified in consideration of standard **EN 13001-1**, in order to operate according to the parameters relating to the service **group A5 of ISO 4301-1.***

In order to choose the right jib crane for the required service it's important to consider the following factors:

1. ***The capacity of the jib crane**: is determined by the maximum load to lift*
2. ***The loading rate (Q)**: is the stress level due to percentage of use of the capacity (average of the loads to be lifted)*
3. ***The functional parameters:** are the operating conditions characterizing the use of the jib crane or:*
   a. ***Functional dimensions:** the height of the arm (determining the lifting height of the hoist) and its cantilever (outreach) must be selected in order to ensure the functional coverage of the space to be served, in consideration of neighboring space;*
   b. ***Type of load:** if it's delicate or less, determines for its positioning the choice of the speed of movement (lifting and translation) more suitable. In some cases it is necessary to use a two-speed hoist with slow speed positioning.*
   c. ***Area of use:** the jib crane is characterized by its conception, by intrinsic high elasticity that is even more evident when it is used to handle loads close to the maximum capacity and/or with mainly location in the top of the arm.*
   d. ***Ambient condition of use:** the jib cranes are designed for indoor use and / or covered area, protected from the weather and in absence of wind. In case of outdoor use measures must be taken in relation to the surface treatment (sandblasting - painting) as well as a parking brake arm and a suitable protection cover for the trolley hoist.*
   e. ***Frequency and mode of use:** determine the correct choice of the type of translation and rotation, which can be manual or electrical in relation to the characteristics of the load to be handled and the frequency of use.*

   If the use is very heavy (frequent and/or repeated switching) with loads close to the maximum capacity, the resulting tiring of the operator due to manual handling must be evaluated, in consideration of the recommendations referred to the following table

Capacity (kg)	Arm (m) 2	3	4	5	6	7	8	Recommendations of use
125	■	■	■	■	■	■	■	■ Field of optimal use for movements of translation and / or rotation of loads normally next to the maximum load and / or with frequent switching
250	■	■	■	■	■	■	■	■ Field of Use allowed for movements of translation and / or rotation of loads occasionally next to the maximum load with sporadic switching
500	■	■	■	■	■	■	■	
1000	■	■	■	■	■	■	■	
2000	■	■	■	■	■			

f. the maximum number of working cycles CA, calculated with the following formula:

$CA = C/h \times Ti \times G/year \times A$

where: *C/h* = *Operating cycles (N° cycles per hour)*
It's the number of complete up/down operations per hour

Ti = *Hoist running time (hours)*
It's the hoist running time in the whole day

G/anno = *Giorni per anno (N°)*
È il numero di giornate lavorative annue di utilizzo della macchina

A = *Years of service (N° years)*
It's the number of years, not less than 10, for which the life of the machine is calculated

OPERATING CYCLES IN THE SERVICE GROUP ISO A5 IN RELATION TO THE LOADING RATE (Q)

Q	LOADING RATE (Q) ACCORDING TO STANDARD EN 13001-1 % OF THE MAX. LOAD (USE % OF THE CAPACITY)	OPERATING CYCLES OF THE JIB CRANE (n°) IN THE SERVICE GROUP A5 ACCORDING ISO 4301-1
Q_0	> 25% ≤ 32%	> 2.000.000 ≤ 4.000.000
Q_1	> 32% ≤ 40%	> 1.000.000 ≤ 2.000.000
Q_2	> 40% ≤ 50%	> 500.000 ≤ 1.000.000
Q_3	> 50% ≤ 63%	> 250.000 ≤ 500.000
Q_4	> 63% ≤ 80%	> 125.000 ≤ 250.000
Q_5	>80% ≤ 100%	> 63.000 ≤ 125.000

*The type of **jib crane VHT "VB" series** is selectable in the table "FEATURES AND SPECIFICATIONS", based on the capacity of the crane as well as other factors, determined or calculated, that characterize its intended use (Loading rate and ISO Service Group)*

Esempio:

- *Execution of the jib crane* → *"Column mounted" Jib crane - "VB-C" series*
- *Column height* → *A (m) = 3,5 m*
- *Jib crane version* → *with Overbraced arm "T"*
- *Arm length and medium run (X_{lin})* → *Arm (m) = 5 m, with medium run of the load on the arm X_{lin} = 2 m*
- *Average angular rotation (X_{ang})* → *X_{ang} = 80°*
- *Maximum load to be lifted: 500 kg* → *Capacity of the jib crane "VB" series =500 kg*
- *Average of the loads to to be lift: 300 kg* → *Loading rate = Q_3*
- *Up/down lifting operations per hour* → *N° cycles per hour C/h = 20*
- *Use on a working shift* → *Ti (hours) = 8*
- *Working days per year: 250* → *D/year = 250*

Calculation of the number of operating cycles (C_A) executable in 10 years:

C_A = C/h x Ti x G/anno x 10 = 20 x 8 x 250 x 10 = 400.000 cycles
(corresponding to class U5 of standard EN 13001-1)

On the basis of the determined and calculated factors, the service group is: Q3 - U5 - D_{lin} $_2$- D_{ang3}, 2 according to the standard EN 13001-1, corresponding to ISO M5 .
*Therefore, as shown in the tables "TECHNICAL DATA" of pag. 10 e 11, the **jib crane** suitable for the use will be:* ***BC335T05.***

THE JIB CRANES VHT “VB” SERIES

JIB CRANES “COLUMN MOUNTED”

“VB-C” SERIES

ARM ROTATION 300°

Overbraced arm “T” version
in rolled profile IPE or HEAA

Cantilever arm “S” version
in rolled profile IPE

JIB CRANES “WALL MOUNTED” VERSION

“VB-M” SERIES

ARM ROTATION 270°

Overbraced arm “T” version
in rolled profile IPE or HEAA

Cantilever arm “S” version
in rolled profile IPE

JIB CRANE "COLUMN MOUNTED" VERSION

"VB-C" SERIES

It is composed by a self-supporting column, fixed to the floor by stay bolts or bolts and by an arm rotating in the upper part of the column itself.
The column is made of press forged steel with a tubular structure and polygonal section. This allows high rigidity and stability of the crane. In the upper part of the column is welded a triangular support with two plates supporting the arm and allowing the rotation of the arm itself.

JIB CRANE "WALL MOUNTED" VERSION

"VB-M" SERIES

It is composed by a bracket support structure, fixed by means of stay bolts or screws to the pillar or to the wall and by an arm that rotates in the upper part of the bracket itself.
The bracket support structure is formed by two steel forged plates that support the arm and allow the rotation of the arm itself.

SURFACES FINISHING

*The protection from atmospheric agents and environmental ones (dust, gas, ecc.), the welded steel structures of the **Jib cranes "VB" series**, are supplied as standard by a varnishing treatment for indoor use.*
The treatment includes the application of a thickness of 60 µm of grey coat RAL 7005 for the column and bracket and yellow coat RAL 1007 for the arm, with consecutive drying in an oven.

SPECIAL EXECUTIONS

*On request, all the **jib cranes "VB" series** can be supplied in the following special executions:*

- *Special anti-corrosive paint or in compliance with Customer's specificatios.*
- *Executions for outdoor use or in sea environment (example: protection roof for the hoist/trolley, anti-condensation heaters).*

ARM

For all the versions of jib cranes, the arm rotating around its own axis on special bearings made in friction material. The arm is made in self-supporting beam for the running of hoist/trolley and is manufactured in the following versions:

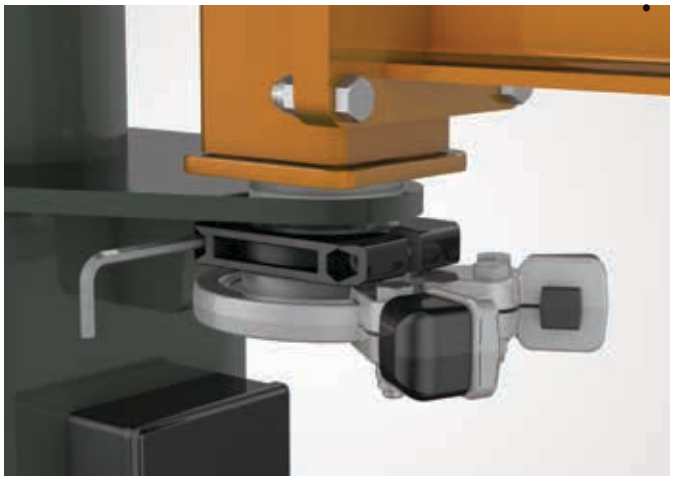
- ***Overbraced "T" version, for capacity from 125 to 2.000 kg and arms from 3 to 8 m***
  - *The arm, on which the trolleys runs manually or electrically, is provided with a roller profile double T, type IPE or HEAA.*
  - *The arm is provided with rotating support and stay bolt, with counterslop device, that support the self-supporting beam.*
  - *The version is characterized by the extreme lightness of movement of the arm, due to low inertia resulting from its own low weight .*
  - *The arm permits the installation of manual and electrical trolleys.*
- ***Cantilever "S" version, for capacity from 125 to 2.000 kg and arms from 2 to 7 m***
  - *Made with a beam in rolled profile in double T type IPE, where on the lower flange runs the manual or electric trolley.*
  - *The beam, cantilevered, is self-supporting, so without supporting stay bolts, and is directly fixed, by means of suitable reinforcements, to the rotating tube.*
  - *This version allows the best use of the available height (thanks to the absence of stay bolts) and the maximum run of the hook.*
  - *The arm allows the installation of manually and electrically trolleys*

BRAKING DEVICE OF THE ARM

*The arms of the **Jib cranes "VB"** series are provided, in all versions, with a braking system, or a friction brake, in plastic material, that allows the regulation of the rotating force of the arm and ensures the stability.*

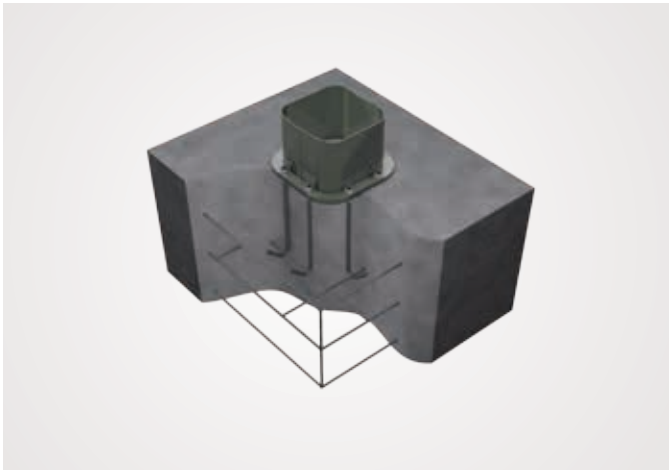
ELECTRIC POWER SUPPLY

*It is designed to power the hoist and/or the electric trolley, runs along the arm of the jib crane. It uses a connection box for the connection between the line and the power festoon, fixed in the top of the column of the of the **jib "VB-C" series** or near the bracket in the wall mounted version **"VB-M" series**.*
*The **Jib cranes "Column mounted "VB-C"** series can be supplied, on request, with padlocked main switch with fuses.*
The distribution of energy is done by means of festoons cable, flame retardant, that runs on the arm by means of slides, sliding on rope fixed under the beam, in the "T" and "S" version.



FIXING SYSTEM

- ***Foundation frame with log bolts***
  - *The foundation frame is used for the Jib cranes "Column mounted" version "VB-C" series and is supplied, on request, for the column fixing on the floor (foundation plinth).*
- ***Bracket and stay bolts group***
  - *The bracket and stay bolts group is used for the fixing to a pillar of the Jib cranes "Wall mounted" version "VB-M" series and is supplied as standard considering the dimensions of the pillar itself. Complete with angular plates, forced against the pillar sides, guarantees the better adhesion of the stay bolts to the pillar*
- ***Chemical bolts for the fixing of the jib crane "column mounted" version***
  - *After the established suitability of the relative surfaces, the fixing to the floor of the Jib cranes "Column mounted" version "VB-C" series can be done also with the use of chemical bolts and, when necessary, by suitable counter plates.*



REGULATORY COMPLIANCE

Reference frame

*All the manual **jib cranes "VB"** series are designed and produced by VHT in compliance with the **Essential Requirements of Safety in Attachment I** of the Community **Directive 2006/42/CE** and , in relation to the Annex II of the Directive itself, can be sold in the following manners:*

- *Complete with lifting unit (hoist), able to work alone, therefore equipped with **EC Declaration of Conformity of Annex IIA** and **CE Marking** in **Annex III** of the Directive;*
- *Incomplete since they are expected to be completed (ex.: with a hoist) by the Customer. In this case the jib crane is **without CE marking** and is supplied with **Declaration of Incorporation** in **Annex IIB** of the **Community Directive 2006/42/CE.***

*In addition, any contingent electrical supply of the **jib cranes "VB" series**, are compliant with **Low Voltage Directive 2014/35/UE**.and the **EMC Directive 2014/30/UE**.*

Reference frame:

*In the design and assembling of the **jib cranes "VB" series** were taken into consideration the following technical standards and regulations:*

EN ISO 12100:2010 "Essentials principles for design concepts"
EN ISO 13849-1:2015 "Parts of control systems related to safety"
EN 13135-1:2018 "Cranes - Safety - Design - Requirements for equipment"
EN 13001-1:2015 "Lifting equipment – General criteria for design - General principles and Requirements"
EN 13001-2:2014 "Lifting equipment – General criteria for design - Loads actions"
EN 13001-3-1:2018 "Lifting equipment – general criteria for design - Stress limit"
EN 16851:2017 "Cranes - Light crane systems"
EN 60204-32:2008 "Safety of the electric equipment of lifting machines"
EN 60529:2017 "IP enclosures"
ISO 4301-1:1988 "Classification of lifting equipment."
FEM 1.001/98 "Calculation of the lifting equipment"
FEM 9.755/93 "Periods of safe work"
FEM 9.941/95 "Controls symbols"

Service class

- *The structural elements and mechanisms of the jib cranes "VB" series are dimensioned in compliance with ISO 4301-1 service group A5 standards.*

Protection and insulation of the electric parts

- *Cables: CEI 20/22 II – Maximum power insulation 450/750 V*
- *Connection box: minimum protection IP65 – Maximum power insulation 1.500 V*
- *Protection and insulation different from standar : available on request.*

Environmental conditions of use in standard execution

- *Use temperature: minimum - 10° C; maximum + 40°C*
- *Maximum relative humidity: 90%*
- *The jib crane must be installed indoor, in a ventilated environment, free from corrosive vapors (acid vapors, saline clouds, etc.).*
- *Special executions, for different environmental conditions or for outdoor use, are available on request.*

Noise - Vibrations

- *During the arm rotation with the maximum load, under the most adverse operating, the noise caused by the jib cranes "VB" series is practically zero, as well as the modest vibrations generated are not dangerous for the health of the workers.*

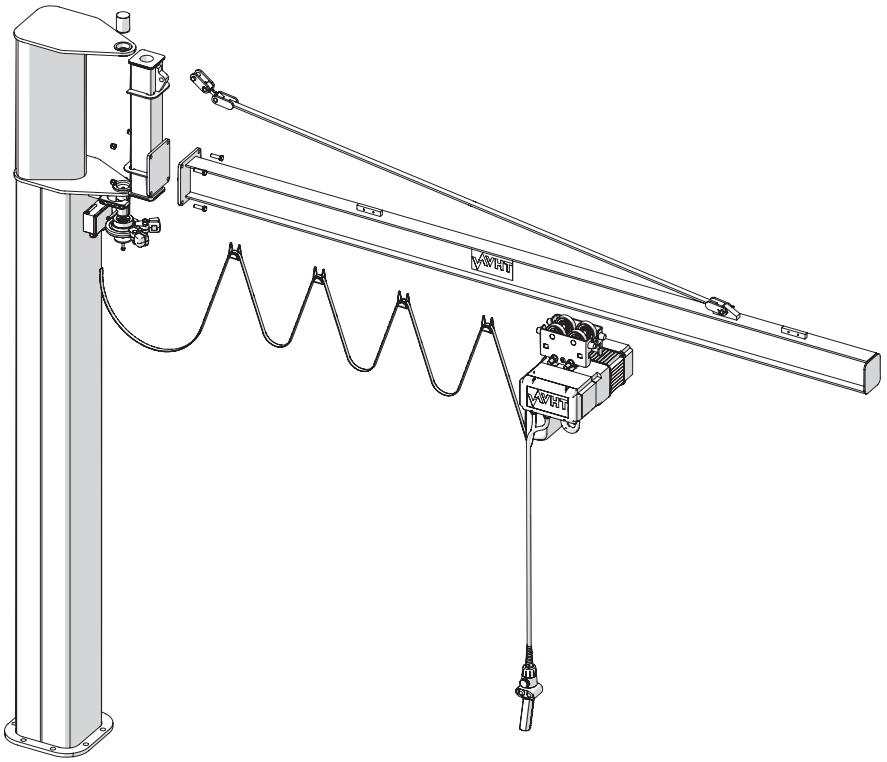
Customer and installer's tasks

Of Jib cranes VHT "VB" series

Preparation of place of installation – Installation and set up

To allow the installation of Jib cranes "VB" series in the place where they will be used, the Customer have to carry out the following operations in advance:

- *Check adequacy and suitability of the support and fixing structures and surfaces as plinths, pillars, wall, floor, bodies machine etc. , obtaining the relevant declaration signed by an expert and qualified engineer (definition and expertise of the engineer in accordance with the standard ISO 9927-1), and check there are not evident lacks on the support structures and fixings;*
- *Check the suitability of the maneuvering areas (rotation) available for the jib cranes, especially if they operate in areas where there are other cranes and operating machines;*
- *Check the suitability and the correct functioning of the electrical power supply:*
  - *Correspondence between the voltage of the power line and the voltage of the motors;*
  - *Presence and suitability of the power main switch;*
  - *Adequacy of cable section of the electric power line and suitability of the ground system.*
- *Set up the weights for the dynamic test (nominal load x 1,1) and static test (nominal load x 1,25);*
- *Set up the equipment for the slinging and lifting of the load tests.*



Installation

*The installation of the **jib cranes "VB" series**, if not correctly carried out, can cause **serious risks for the safety of the workers**, nearby in the assembly stage and/or use. That's way this procedure must be assigned to **specialized installers, with a good knowledge and experience in the field of lifting equipment**, considering:*

- *Environmental characteristics of the place of work (ex.: viability of the floor, etc.);*
- *Height of the work level and load level;*
- *The dimensions and the weight of the parts to be installed, as well as the available spaces for the handling of the parts to be installed.*

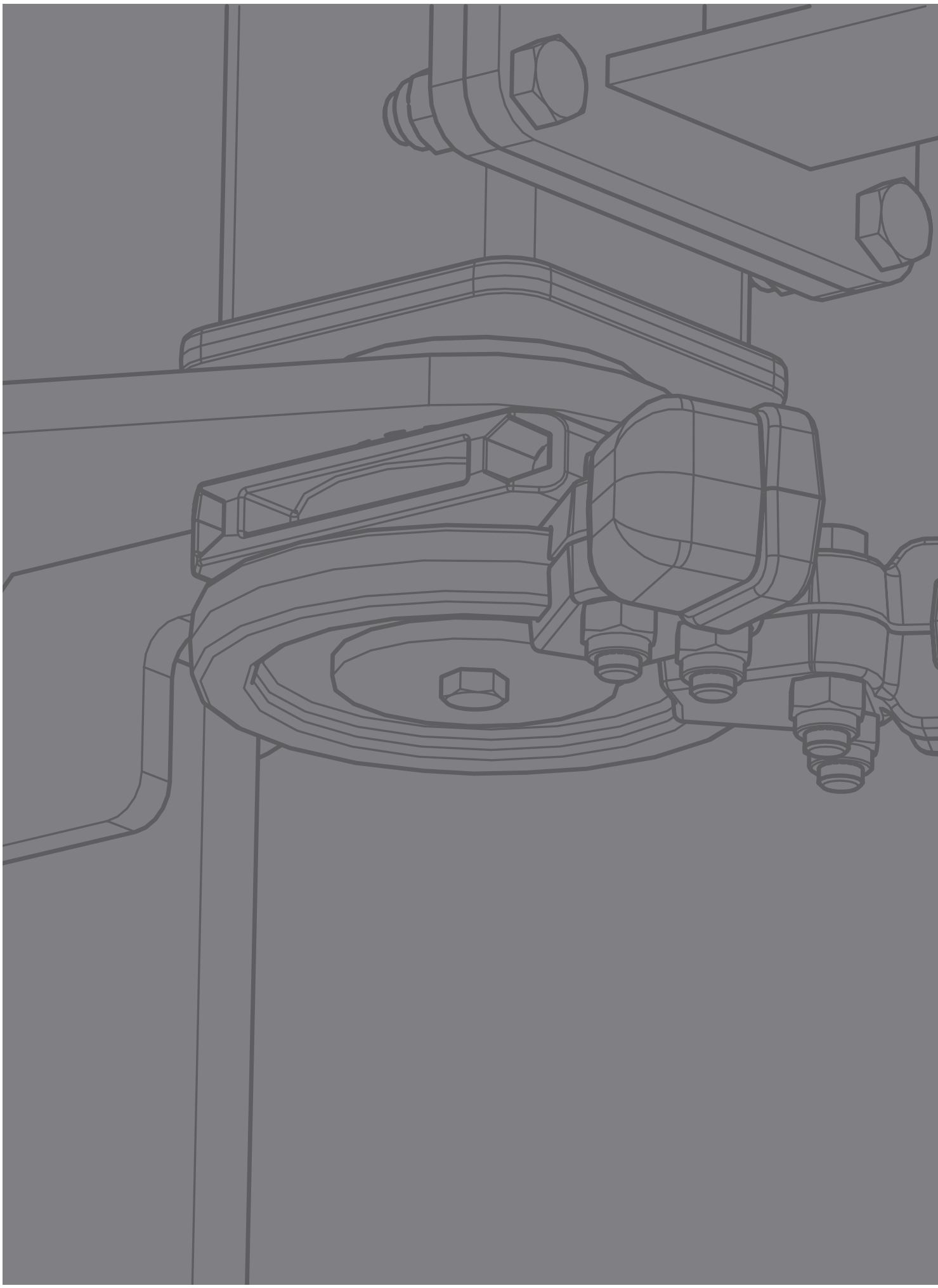
Before starting with the assembling of the parts and with the installation of the jib crane, the installer has to be sure that the characteristics of the crane are suitable with the use which is intended for, and in particular:

- *The capacity of the crane is ≥ compared to the load to lift.*
- *The characteristics of the fixing structures (plinth, floor, pillar, wall, etc.) have been "Declared suitable" by the Customer or by an "Expert engineer", engaged by the Customer .*
- *The characteristics of the lifting unit (trolley/hoist), if not part of the supply, are compatible with those of the jib crane in relation to:*
  - *capacity of the hoist ≤ than capacity of the jib crane;*
  - *weight of the trolley/hoist ≤ than maximum ones intended;*
  - *lifting and transverse speed ≤ than the maximum ones allowed;*
  - *headroom of the figure of trolley/hoist ≤ than those allowed;*
  - *reaction on the trolley wheels than to the maximum ones intended;*
  - *the flange width of the beam must correspond to the provided one for the wheels of the trolley.*
- *The installer must follow the instructions content in the user guide of the jib crane and relative hoist.*

Set up-Ready to use

*Following the installation activities of the **Jib cranes "VB" series** it is the precise duty of the installer to:*

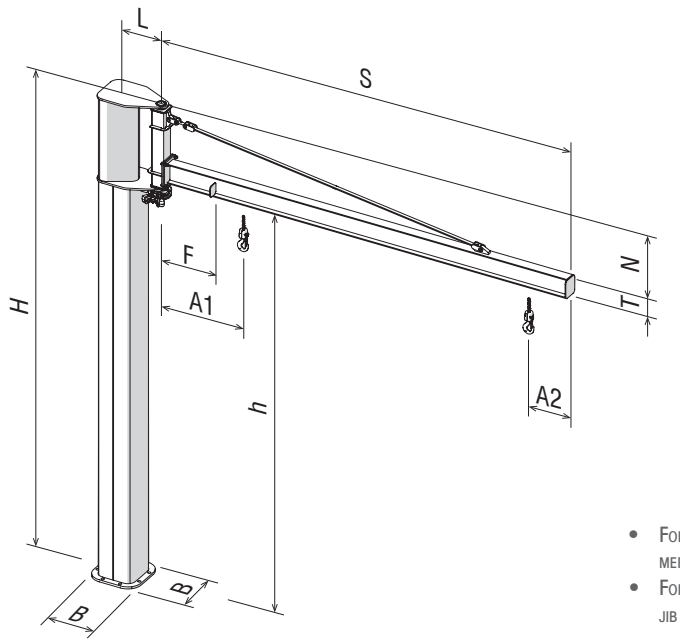
- *Lead the activities of the set-up service as described in the User Guide, ensuring that all the safety devices are properly installed and corresponding to the intended use and provide, if necessary, to their adjustment.*
- *In particular, the installer must be sure about the right installation and functionality of the limit switch of:*
  - *Transverse: end stop of the trolley, must be fixed in order to avoid interference and/or collision of the lifting unit (trolley and hoist) with the structures of the jib crane itself;*
  - *Lifting: limit switch of the hoists must be adjusted in order to avoid the hook contact with the floor;*
  - *Rotation: arm rotating limit device of the jib cranes must be adjusted in order to avoid interference and/or collisions between the arm in rotation and structures on its way.*
- *Prepare the report **"Testing and correct installation"** of the jib crane, deliberating the **suitability for use***
- *Take care of the complete editing of the responsibility of part as intended in the Check Register*



JIB CRANES "VB" SERIES - TECHNICAL DATA

Technical data – Overall dimensions and weights

Jib cranes "Column mounted" version "VB-C" series with overbraced arm "T" version

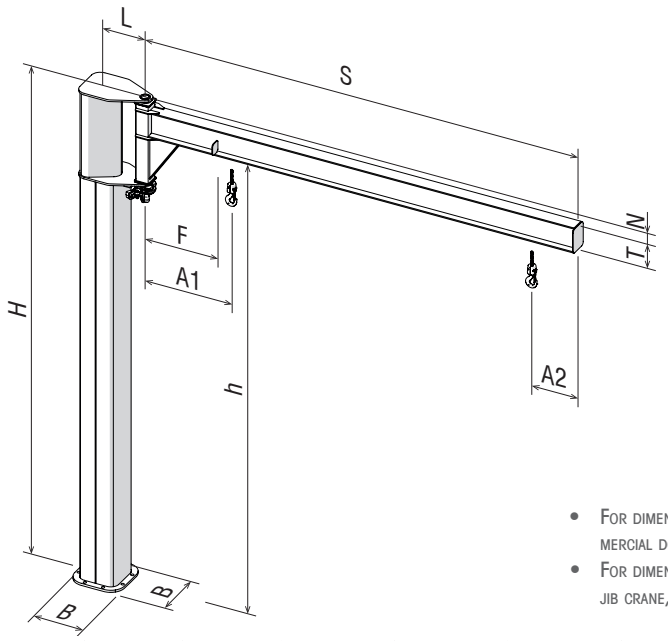


- For dimensions A1 e A2, about the matching of the hook, see commercial documentation of the hoist installed on the jib crane
- For dimension B of the basic plate, in relation with the size of the jib crane, see pag. 20

Capacity	Arm		Height		Size of the jib	Code	Arm in beam IPE or HEAA		Overall dimensions (mm)			Weight	
	Nominal S	True lenght	Basic column H	Under beam h			Profile type	Quote T	L	N	F	Crane	Column by m
kg	m	mm	m	mm				mm				kg	kg/m
125	3	2980	3	2456	1	BC130T03	IPE 140	140	275	404	490	170	29,2
	4	3980	3	2456	1	BC130T04	IPE 140	140	275	140	550	185	29,2
	5	4980	3	2456	1	BC130T05	IPE 140	140	275	404	610	198	29,2
	6	6000	3.5	2662	2	BC235T06	HEAA 140	128	390	710	787	355	36,2
	7	7000	3.5	2662	2	BC235T07	HEAA 140	128	390	710	857	376	36,2
	8	8000	3.5	2662	2	BC235T08	HEAA 140	128	390	710	917	395	36,2
250	3	3000	3	2456	1	BC130T03	IPE 140	140	275	404	490	170	29,2
	4	4000	3.5	2662	2	BC235T04	IPE 140	140	390	698	677	292	36,2
	5	5000	3.5	2662	2	BC235T05	IPE 140	140	390	698	737	309	36,2
	6	6000	3.5	2662	3	BC335T06	HEAA 140	128	390	710	787	393	50,6
	7	7000	3.5	2662	3	BC335T07	HEAA 140	128	390	710	847	414	50,6
	8	8000	3.5	2662	3	BC335T08	HEAA 140	128	390	710	907	433	50,6
500	3	3000	3.5	2662	2	BC235T03	IPE 140	140	390	698	617	276	36,2
	4	4000	3.5	2662	3	BC335T04	IPE 140	140	390	698	677	329	50,6
	5	5000	3.5	2662	3	BC335T05	IPE 160	160	390	678	737	360	50,6
	6	6000	4	2870	4	BC440T06	HEAA 160	148	520	982	927	595	55,7
	7	7000	4	2870	4	BC440T07	HEAA 160	148	520	982	987	625	55,7
	8	8000	4	2870	4	BC440T08	HEAA 200	186	520	944	1047	743	55,7
1000	3	3000	3.5	2662	3	BC335T03	IPE 140	140	390	698	617	313	50,6
	4	4000	4	2870	4	BC440T04	IPE 180	180	520	950	807	515	55,7
	5	5000	4	2870	4	BC440T05	IPE 180	180	520	950	867	539	55,7
	6	6000	4	2870	5	BC540T06	HEAA 200	186	520	944	927	735	83,2
	7	7000	4	2870	5	BC540T07	HEAA 200	186	520	944	987	776	83,2
	8	8000	4	2870	5	BC540T08	HEAA 200	186	520	944	1047	818	83,2
2000	3	3000	4	2870	4	BC440T03	IPE 180	180	520	950	747	491	55,7
	4	4000	4	2870	5	BC540T04	IPE 180	180	520	950	807	590	83,2
	5	5000	4	2870	5	BC540T05	IPE 240	240	520	890	867	674	83,2

Technical data – Overall dimensions and weights

Jib crane "Column mounted" version "VB-C" series with cantilever arm "S" version



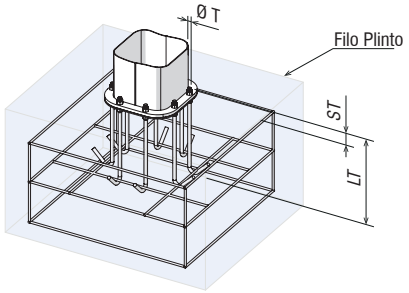
- For dimensions A1 e A2, about the matching of the hook, see commercial documentation of the hoist installed on the jib crane
- For dimension B of the basic plate, in relation with the size of the jib crane, see pag. 20

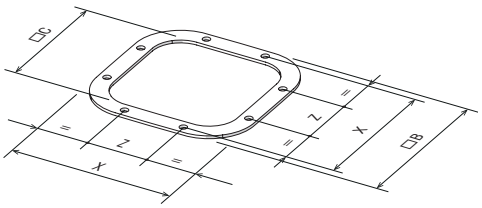
Capacity	Arm		Height		Size of the jib	Code	Arm in beam IPE or HEAA		Overall dimensions (mm)			Weight	
	Nominal S	True lenght	Basic column H	Under beam h			Profile	Quote T				Crane	Column by m
kg	m	mm	m	mm			type	mm	L	N	F	kg	kg/m
125	2	2000	3	2796	1	BC130S02	IPE 140	140	275	64	500	154	29,2
	3	2960	3	2796	1	BC130S03	IPE 140	140	275	64	500	165	29,2
	4	3960	3	2756	1	BC130S04	IPE 180	180	275	64	560	201	29,2
	5	5000	3	2736	1	BC130S05	IPE 200	200	275	64	620	236	29,2
	6	5935	3.5	3185	2	BC235S06	IPE 240	240	390	75	935	418	36,2
	7	6935	3.5	3185	2	BC235S07	IPE 240	240	390	75	995	449	36,2
250	2	2000	3	2796	1	BC130S02	IPE 140	140	275	64	500	154	29,2
	3	2960	3	2756	1	BC130S03	IPE 180	180	275	64	500	184	29,2
	4	4000	3.5	3225	2	BC235S04	IPE 200	200	390	75	815	324	36,2
	5	4975	3.5	3185	2	BC235S05	IPE 240	240	390	75	875	388	36,2
	6	6000	3.5	3155	3	BC335S06	IPE 270	270	390	75	935	488	50,6
	7	7000	3.5	3125	3	BC335S07	IPE 300	300	390	75	995	567	50,6
500	2	2000	3.5	3225	2	BC235S02	IPE 200	200	390	75	755	279	36,2
	3	3000	3.5	3225	2	BC235S03	IPE 200	200	390	75	755	301	36,2
	4	4000	3.5	3185	3	BC335S04	IPE 240	240	390	75	815	394	50,6
	5	5000	3.5	3155	3	BC335S05	IPE 270	270	390	75	875	452	50,6
	6	6000	4	3586	4	BC440S06	IPE 330	330	520	84	1085	728	55,7
	7	7000	4	3556	4	BC440S07	IPE 360	360	520	84	1145	833	55,7
1000	2	2000	3.5	3225	3	BC335S02	IPE 200	200	390	75	755	316	50,6
	3	2935	3.5	3185	3	BC335S03	IPE 140	240	390	75	755	363	50,6
	4	4000	4	3616	4	BC440S04	IPE 180	300	520	84	965	602	55,7
	5	5000	4	3586	4	BC440S05	IPE 180	330	520	84	1025	679	55,7
	6	6000	4	3516	5	BC540S06	IPE 400	400	520	84	1085	906	83,2
	7	7000	4	3466	5	BC540S07	IPE 450	450	520	84	1145	1052	83,2
2000	2	2000	4	3616	4	BC440S02	IPE 300	300	520	84	905	518	55,7
	3	3000	4	3616	4	BC440S03	IPE 300	300	520	84	905	560	55,7
	4	4000	4	3556	5	BC540S04	IPE 360	360	520	84	965	737	83,2
	5	5000	4	3466	5	BC540S05	IPE 450	450	520	84	1025	896	83,2

Technical data – Overall dimensions and weights

Of the jib cranes VHT "VB" series

BASIC PLATES AND FOUNDATION FRAMES FOR JIB CRANES "COLUMN MOUNTED" VERSION "VB-C" SERIES





SIZE OF THE JIB CRANE		1	2	3	4	5
OVERALL DIMENSIONS OF THE BASIC PLATES AND FOUNDATION FRAMES	□ C (mm)	264	354		494	
	□ B (mm)	345	450		630	
	X (mm)	305	404.5		564	
	Z (mm)	126	167.5		234	
CHARACTERISTICS OF THE STAY BOLTS (MINIMUM BREAK RESISTANCE OF ONE STAY BOLT = 430 N/mm²)	Ø T (mm)	16	20		30	
	LT (mm)	450	550		600	
	ST (mm)	45	55		80	

NOTE: THE FOUNDATION PLINTH MUST BE DIMENSIONED CONSIDERING THE MAXIMUM PRESSURE ALLOWED BY THE GROUND AND CONSIDERING THE MOMENTUMS AND REACTIONS STATED ON PAG. 21

FIXING TO THE FLOOR WITH CHEMICAL BOLTS OF THE JIB CRANES "COLUMN MOUNTED " VERSION " "VB-C" SERIES

THE JIB CRANES "COLUMN MOUNTED" VERSION VHT "VB" SERIES, EXCEPT THOSE SHOWN IN THE GREY AREA TO PAG. 21, CAN BE FIXED DIRECTLY WITH CHEMICAL BOLTS WITHOUT COUNTER PLATE, PROVIDING THAT THEY ENSURE THE CHARACTERISTICS OF THE FLOOR STATED IN THE TABLE, WITH THE USE OF THE FOLLOWING FIXING KIT:

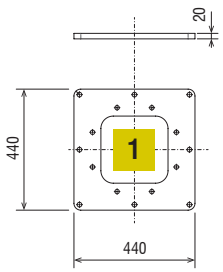
- N° 8 CHEMICAL BOLTS M16 COMPOSED BY VIAL HILTI HVU WITH THREADED BARS HILTI HAS
- N° 8 SPECIAL WASHERS VHT (EXCEPTED THE SIZE 1)

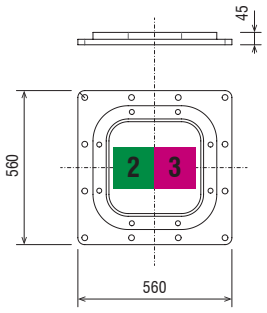
NOTE: FIXING BY MEANS OF CHEMICAL BOLTS DIFFERENT BY THOSE PRESCRIBED OR WITH MECHANICAL EXPANSION MUST BE APPROVED SUITABLE BY THE CUSTOMER.

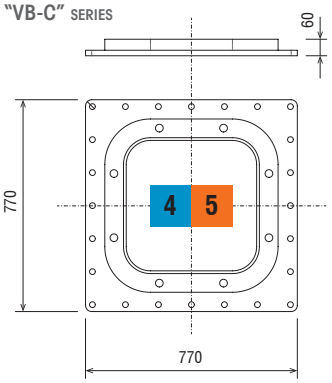
SIZE OF THE JIB CRANE		1	2	3	4	5
FIXING CHARACTERISTICS	CLASSE RCK MIN. OF THE CONCRETE (kg/cm²)	C 20/25				
	TYPE OF THE CHEMICAL VIAL AND BOLTS (VIAL HILTI HVU WITH BARS HILTI HAS)	M16				
	Q.TY OF THE BOLTS (N°)	8				
	MINIMUM THICKNESS OF THE FLOOR (mm)	170				
	HOLES DIAMETER (mm)	18				
	DEPTH OF THE HOLE IN THE CONCRETE FLOOR (mm)	125				

NOTE: THE JIB CRANES SIZE 1 AND 2 CAN BE FIXED TO THE FLOOR WITH MINIMUM THICKNESS OF 140 mm, WITH THE COUNTER PLATE AS PER THE NEXT TABLE

COUNTER PLATE FOR FIXING WITH CHEMICAL BOLTS OF THE JIB CRANES "COLUMN MOUNTED" VERSION "VB-C" SERIES







JIB CRANE SIZE AND COUNTER PLATE TYPES		1	2	3	4	5
FIXING CHARACTERISTICS	CLASS RCK MIN. OF THE CONCRETE (kg/cm²)	C 20/25	C 20/25	C 20/25	C 20/25	C 20/25
	TYPE OF THE CHEMICAL VIAL AND BOLTS (VIAL HILTI HVU WITH BARS HILTI HAS)	M12	M16		M16	M20
	Q.TY OF THE BOLTS (N°)	8	12		24	24
	MINIMUM THICKNESS OF THE FLOOR (mm)	140	170		170	220
	HOLES DIAMETER (mm)	14	18		18	24
	DEPTH OF THE HOLE IN THE CONCRETE FLOOR (mm)	110	125		125	170

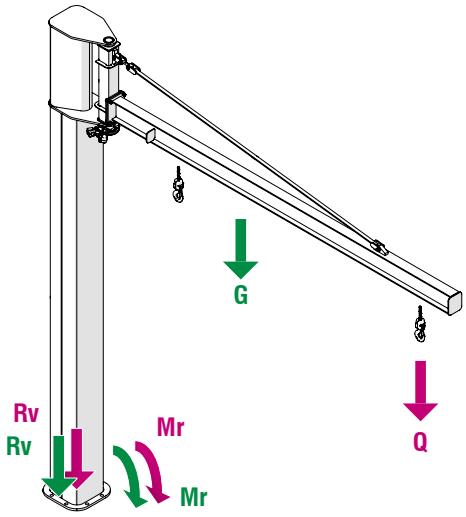
NOTE: THE FIXING BY MEANS OF CHEMICAL BOLTS REQUIRES CHECK OF SUITABILITY OF THE FLOOR, CONSIDERING THE MOMENTUM AND REACTIONS STATED ON PAG. 21

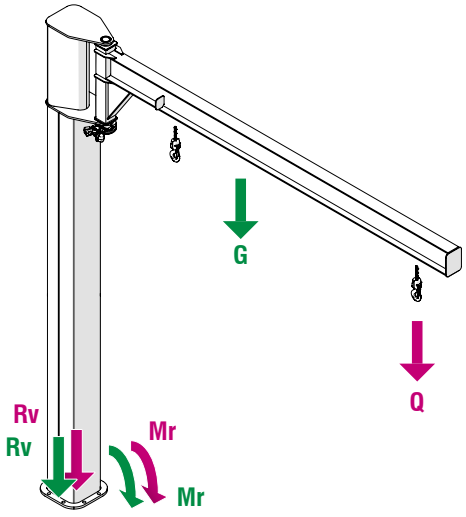
Technical data – Moments and Reactions

Of the jib cranes VHT "VB" series

TILTING MOMENTS (Mr) AND STATIC REACTIONS (Rv) OF THE JIB CRANES "COLUMN MOUNTED" VERSIONS "VB-C" SERIES

LEGENDA:
Mr= TILTING MOMENT DUE TO LOAD Q
Mr= TILTING MOMENT DUE TO CRANE WEIGHT G
Rv= VERTICAL REACTION DUE TO LOAD Q
Rv= VERTICAL REACTION DUE TO CRANE WEIGHT G





CAPACITY (kg)	MOMENTS AND REACTIONS	REACTIONS DUE TO LOAD (Q) AND CRANE WEIGHT (G) WITH ARM												REACTIONS DUE TO LOAD (Q) AND CRANE WEIGHT (G) WITH ARM											
		3 (m)		4 (m)		5 (m)		6 (m)		7 (m)		8 (m)		2 (m)		3 (m)		4 (m)		5 (m)		6 (m)		7 (m)	
		Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G
125	MR(kNm)	6	1,5	7,9	2,2	9,8	3,1	12	8,4	14	9,9	16	12	4,1	0,8	6	1,4	7,9	2,6	9,8	4,1	12	9,9	14	13
	RV(kN)	1,9	1,7	1,9	1,9	1,9	2,0	1,9	3,6	1,9	3,8	1,9	4,0	1,9	1,6	1,9	1,7	1,9	2,0	1,9	2,7	1,9	4,2	1,9	4,5
250	MR(kNm)	9,9	1,5	14	4,4	17	5,3	20	7,3	21	9,2	26	12	6,8	0,8	9,9	1,7	14	4,7	17	6,1	20	11	23	16
	RV(kN)	3,2	1,7	3,2	2,9	3,2	3,1	3,2	4,0	3,2	4,2	3,2	4,4	3,2	1,6	3,2	1,9	3,2	3,3	3,2	3,9	3,2	4,9	3,2	5,7
500	MR(kNm)	19	2,8	24	3,6	30	5,3	36	14	42	16	47	24	13	2,1	19	2,3	24	5,2	30	7,4	36	18	42	25
	RV(kN)	5,7	2,8	5,7	3,3	5,7	3,6	5,7	6,0	5,7	6,3	5,7	7,5	5,7	2,8	5,7	3,1	5,7	4,0	5,7	4,6	5,7	7,3	5,7	8,4
1000	MR(kNm)	35	2,6	47	8,1	58	9,5	69	15	80	18	90	22	24	1,9	35	3,2	47	9,6	58	11	69	21	80	29
	RV(kN)	11	3,2	11	5,2	11	5,4	11	7,4	11	7,8	11	8,2	11	3,2	12	3,7	11	6,1	11	6,8	11	9,1	11	11
2000	MR(kNm)	71	5,4	92	6,5	113	11	=	=	=	=	=	=	49	4,5	70	6,8	91	10	112	17	=	=	=	=
	RV(kN)	21	4,9	21	5,9	21	6,8	=	=	=	=	=	=	21	5,2	21	5,6	21	7,4	21	9,0	=	=	=	=

JIB CRANE FOR WHICH IN CASE OF FIXING TO THE FLOOR WITH CHEMICAL BOLTS, IS MANDATORY THE USE OF COUNTER PLATES AS REFERRED ON PAG. 20

NOTE:

- THE VALUES GIVEN ARE BASED TO STATIC REACTIONS (CALCULATED FOR COLUMN WITH BASIC HEIGHT H, AS REFERRED ON PAG.12 AND 13) AND MUST BE MULTIPLIED WITH THE PROPER DYNAMIC COEFFICIENTS Φ AND COMPOUNDS ACCORDING THE LOAD COMBINATIONS STATED IN THE STANDARDS USED FOR THE CALCULATION (EXAMPLE EN 13001-2).
- THE REACTIONS ARE DIVIDED INTO THE PARTS DUE TO LOAD Q AND CRANE WEIGHT G TO ALLOW THE DESIGNER OF THE FIXING STRUCTURES OF THE JIB CRANE, A RIGHT EVALUATION APPLYING TO EACH OF THEM THE RELATIVE PARTIAL SAFETY COEFFICIENT γ_P.
- THE CHECK OF THE FIXING STRUCTURES OF THE JIB CRANES MUST BE CARRIED OUT BY EXPERT ENGINEERS WHICH GIVE THE SUITABILITY AND WILL OFFICIALLY TAKE ON THE RESPONSIBILITY.

EXAMPLE: COMPOSITION OF THE REACTIONS AS DESCRIBED IN THE STANDARD EN 13001-2.

IT IS CONSIDERED A JIB CRANE WITH OVERBRACED ARM OF CAPACITY 500 kg, ARM 5 m AND COLUMN HEIGHT 5,5 m.

FROM THE TABLE WE OBTAIN THE FOLLOWING STATIC REACTIONS DUE TO CRANE WEIGHT: $Mr_{(G)}$ = 5,3 kNm, $Rv_{(G)}$ = 3,6 kN.

FROM THE TABLE WE OBTAIN THE FOLLOWING STATIC REACTIONS DUE TO LOAD: $Mr_{(Q)}$ = 30 kNm, $Rv_{(Q)}$ = 5,7 kN.

ACCORDING TO STANDARD EN 13001-2 THE COMPOSITION OF THE REACTIONS BY MULTIPLYING EACH PART FOR ITS RELATIVE DYNAMIC COEFFICIENT AND ITS PARTIAL SAFETY COEFFICIENT TO OBTAIN THE DESIGN VALUES:

$$Mr_{Ed} = \Phi_1 \gamma_{p(G)}\, Mr_{(G)} + \Phi_2 \gamma_{p(Q)}\, Mr_{(Q)}$$

$$Rv_{Ed} = \Phi_1 \gamma_{p(G)}\, Rv_{(G)} + \Phi_2 \gamma_{p(Q)}\, Rv_{(Q)}$$

AS DEFINED IN STANDARD EN 13001-2 CAN TAKE ON THE FOLLOWING FACTORS:

$\gamma_{p(G)}$ = 1,16 (MASSES WITH UNFAVORABLE DISTRIBUTION TYPE MDC1)

$\gamma_{p(Q)}$ = 1,34

Φ_1 = 1,1

Φ_2 = 1,33 (VALUE FOR THE OVERLOAD CLUTCH CALIBRATION OF THE ELECTRIC CHAIN HOISTS VHT "VK" SERIES).

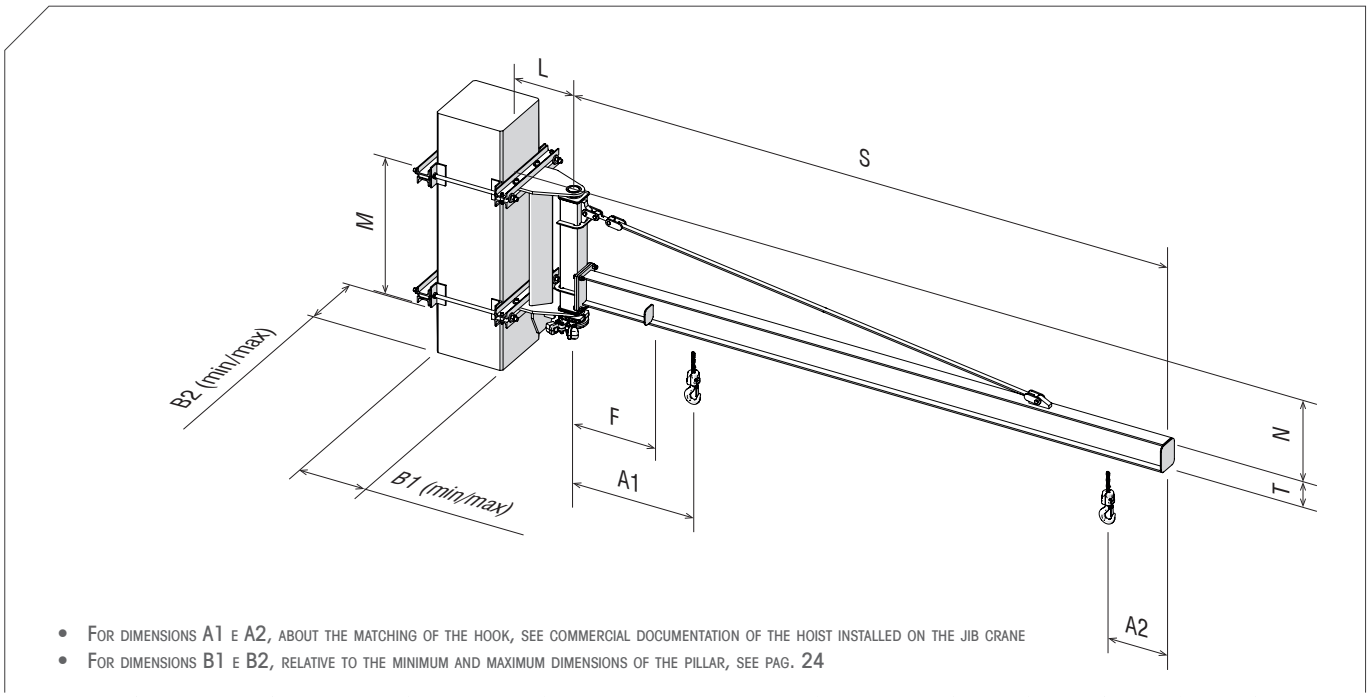
NB: FOR THE VALUE OF THE COEFFICIENT 2 IS RECOMMENDED ASCRIBED, PRUDENTLY IN FAVOR OF SAFETY, TO THE OVERLOAD CLUTCH CALIBRATION STATED BY THE MANUFACTURER OF THE INSTALLED HOIST. WITHOUT DATA, THE STANDARD EN 14492-2 INDICATES THE MAXIMUM OVERLOAD CLUTCH CALIBRATION OF 1,6.

FROM THE COMPOSITION OF THE REACTIONS THERE ARE TO THE BASE OF THE COLUMN: Mr_{Ed} = 60,2 kNm e Rv_{Ed} = 14,7 kN

AS INDICATED BY THE STANDARD EN 13001-2 THE OBTAINED VALUES SHOULD BE COMPARED WITH THEIR RESISTANCE VALUES Mr_{Rd} AND Rv_{Rd} OBTAINED FROM CHARACTERISTICS VALUE OF RESISTANCE OF THE MATERIAL THROUGH A REDUCED COEFFICIENT OF RESISTANCE γ_m = 1,1.

Technical data – Overall dimensions and weights

Jib cranes "Wall mounted" version "VB-C" series with overbraced arm "T" version

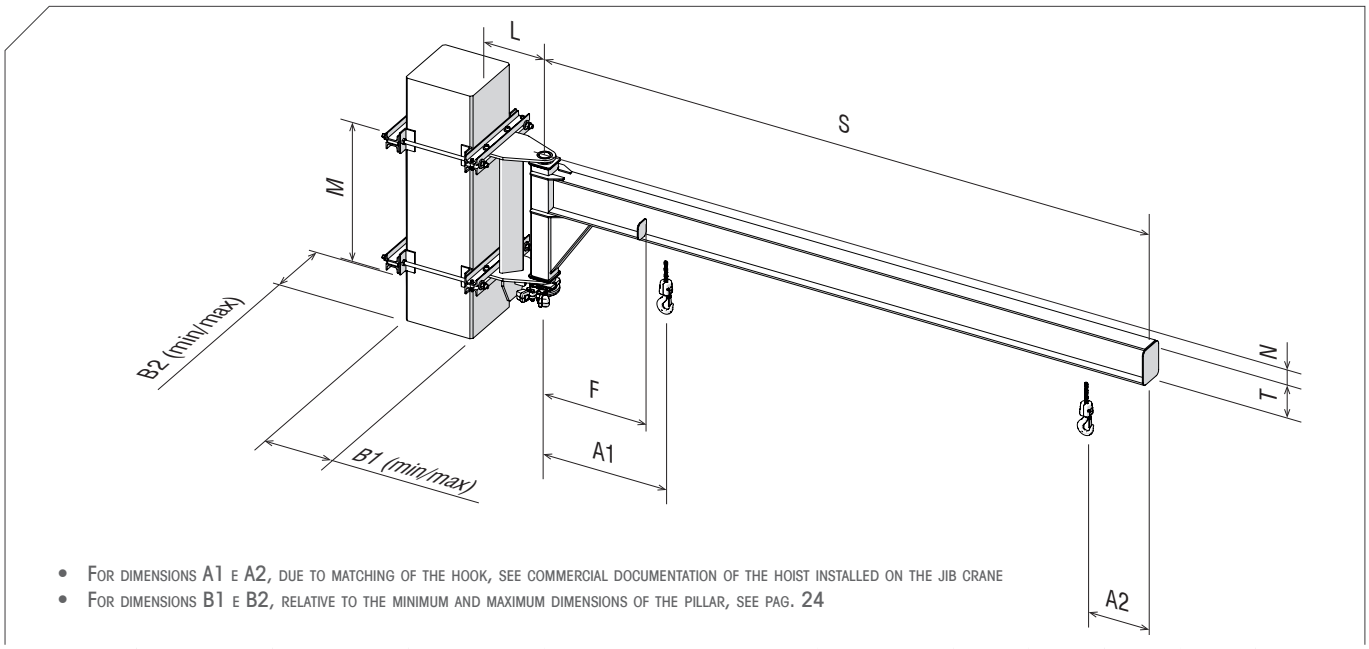


- For dimensions A1 e A2, about the matching of the hook, see commercial documentation of the hoist installed on the jib crane
- For dimensions B1 e B2, relative to the minimum and maximum dimensions of the pillar, see pag. 24

Capacity	Arm		Size	Code	Arm in beam IPE or HEAA		Overall dimensions (mm)				Weight
	Nominal S	True lenght			Profile	Quote T					
kg	m	mm			tipo	mm	L	N	F	M	kg
125	3	2980	1	BM1MET03	IPE 140	140	265	437	490	677	89
	4	3980	1	BM1MET04	IPE 140	140	265	437	550	677	104
	5	4980	1	BM1MET05	IPE 140	140	265	437	610	677	117
	6	6000	2	BM2MET06	HEAA 140	128	337	758	787	1015	218
	7	7000	2	BM2MET07	HEAA 140	128	337	758	857	1015	239
	8	8000	2	BM2MET08	HEAA 140	128	337	758	917	1015	258
250	3	3000	1	BM1MET03	IPE 140	140	265	437	490	677	89
	4	4000	2	BM2MET04	IPE 140	140	337	746	677	1015	155
	5	5000	2	BM2MET05	IPE 140	140	337	746	737	1015	172
	6	6000	2	BM2MET06	HEAA 140	128	337	758	787	1015	256
	7	7000	2	BM2MET07	HEAA 140	128	337	758	847	1015	277
	8	8000	2	BM2MET08	HEAA 140	128	337	758	907	1015	296
500	3	3000	2	BM2MET03	IPE 140	140	337	746	617	1015	139
	4	4000	2	BM2MET04	IPE 140	140	337	746	677	1015	155
	5	5000	2	BM2MET05	IPE 160	160	337	726	737	1015	186
	6	6000	4	BM4MET06	HEAA 160	148	390	1038	927	1331	314
	7	7000	4	BM4MET07	HEAA 160	148	390	1038	987	1331	344
	8	8000	4	BM4MET08	HEAA 200	186	390	1000	1047	1331	462
1000	3	3000	2	BM2MET03	IPE 140	140	337	746	617	1015	139
	4	4000	4	BM4MET04	IPE 180	180	390	1006	807	1331	234
	5	5000	4	BM4MET05	IPE 180	180	390	1006	867	1331	258
	6	6000	4	BM4MET06	HEAA 200	186	390	1000	927	1331	379
	7	7000	4	BM4MET07	HEAA 200	186	390	1000	987	1331	420
	8	8000	4	BM4MET08	HEAA 200	186	390	1000	1047	1331	462
2000	3	3000	4	BM4MET03	IPE 180	180	390	1006	747	1331	210
	4	4000	4	BM4MET04	IPE 180	180	390	1006	807	1331	234
	5	5000	4	BM4MET05	IPE 240	240	390	946	867	1331	318

Technical data – Overall dimensions and weights

Jib cranes "Wall mounted" version "VB-C" series with cantilever "S" version



- For dimensions A1 e A2, due to matching of the hook, see commercial documentation of the hoist installed on the jib crane
- For dimensions B1 e B2, relative to the minimum and maximum dimensions of the pillar, see pag. 24

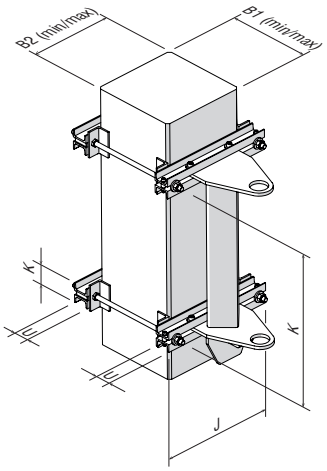
Capacity	Arm		Size	Code	Arm in beam IPE or HEAA		Overall dimensions (mm)				Weight
	Nominal S	True lenght			Profile	Quote T					
kg	m	mm			tipo	mm	L	N	F	M	kg
125	2	2000	1	BM1MES02	IPE 140	140	265	97	500	677	72
	3	2960	1	BM1MES03	IPE 140	140	265	97	500	677	83
	4	3960	1	BM1MES04	IPE 180	180	265	97	560	677	119
	5	5000	1	BM1MES05	IPE 200	200	265	97	620	677	154
	6	5935	2	BM2MES06	IPE 240	240	337	123	935	1015	281
	7	6935	2	BM2MES07	IPE 240	240	337	123	995	1015	312
250	2	2000	1	BM1MES02	IPE 140	140	265	97	500	677	72
	3	2960	1	BM1MES03	IPE 180	180	265	97	500	677	102
	4	4000	2	BM2MES04	IPE 200	200	337	123	815	1015	187
	5	4975	2	BM2MES05	IPE 240	240	337	123	875	1015	251
	6	6000	2	BM2MES06	IPE 270	270	337	123	935	1015	314
	7	7000	2	BM2MES07	IPE 300	300	337	123	995	1015	393
500	2	2000	2	BM2MES02	IPE 200	200	337	123	755	1015	142
	3	3000	2	BM2MES03	IPE 200	200	337	123	755	1015	164
	4	4000	2	BM2MES04	IPE 240	240	337	123	815	1015	220
	5	5000	2	BM2MES05	IPE 270	270	337	123	875	1015	278
	6	6000	4	BM4MES06	IPE 330	330	390	139	1085	1331	447
	7	7000	4	BM4MES06	IPE 360	360	390	139	1145	1331	552
1000	2	2000	2	BM2MES02	IPE 200	200	337	123	755	1015	142
	3	2935	2	BM2MES03	IPE 240	240	337	123	755	1015	189
	4	4000	4	BM4MES04	IPE 300	300	390	139	965	1331	321
	5	5000	4	BM4MES05	IPE 330	330	390	139	1025	1331	398
	6	6000	4	BM4MES06	IPE 400	400	390	139	1085	1331	550
	7	7000	4	BM4MES07	IPE 450	450	390	139	1145	1331	696
2000	2	2000	4	BM4MES02	IPE 300	300	390	139	905	1331	237
	3	3000	4	BM4MES03	IPE 300	300	390	139	905	1331	279
	4	4000	4	BM4MES04	IPE 360	360	390	139	965	1331	381
	5	5000	4	BM4MES05	IPE 450	450	390	139	1025	1331	540

Technical data – Overall dimensions and weights

Of the jib cranes VHT "VB" series

Bracket and staybolts for Jib Cranes "wall mounted" version "VB-M" series installed ON PILLAR

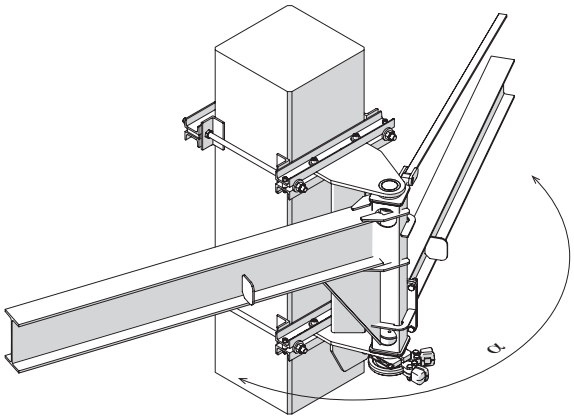
Size of the Jib Crane			1	2	4
Fixing staybolt on pillar		Ø	M16	M24	M30
Vertical distance between staybolts		y (mm)	600	900	1200
Characteristics of the fixing bracket on pillar	Bracket width	U (mm)	60	80	100
	Bracket height	K (mm)	77	115	131
	Short brackets - "C"	J (mm)	450	560	600
	Pillar dimensions B2	min. (mm)	200	280	300
		max. (mm)	330	400	400
	Medium brackets - "M"	J (mm)	620	720	750
	Pillar dimensions B2	min. (mm)	330	400	400
		max. (mm)	500	550	550
	Long bracket - "L"	J (mm)	770	920	950
	Pillar dimensions B2	min. (mm)	500	550	550
		max. (mm)	650	750	750
	Pillar depth B1	max. (mm)	780	750	700

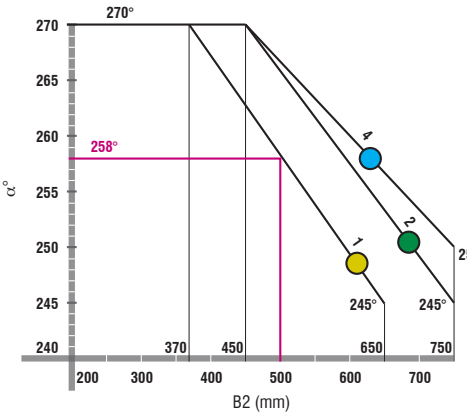


- The kit consists of N° 4 staybolts for fixing on pillar with lenght of 800 mm each.
- For pillar with dimension B1 more than stated in the table are available, on request, staybolts with lenght 1.000 mm or 1.200 mm

Note: The installation of the jib crane on pillar requires check of suitability of the same, considering the moments and reactions as stated on pag. 25.

Rotating field of the Jib Cranes "wall mounted" version "VB-M" series due to Pillar width



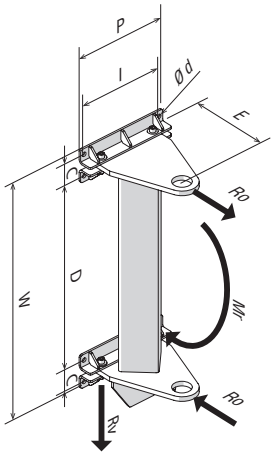


The rotating angle α° max. of 270° is possible for pillar with width B2 max. of 370 mm for size 1 and of450 mm fore size 2 e 4. For pillars with more width the rotating angle α° decreases, as stated in the diagram, up to a minimum of: 245° for size 1 on pillar width of 650 mm, 245° for size 2 on pillar width of 750 mm and 250° for size 4 on pillar width of 750 mm.

Example: jib crane size 1 on pillar width of 500 mm, with medium brackets "M", rotating angle α° = 258°

Brackets and fixing bolts for Jib Cranes "Wall mounted" version "VB-M" series ON WALL

Size of the Jib Crane			1	2	4
N° 8 fixing bolts on wall		Ø	M12	M16	M24
Characteristics of the brackets on wall - "P"		P (mm)	310	400	450
		I (mm)	280	365	400
		C (mm)	77	90	122
		D (mm)	523	810	1074
		E (mm)	262	334	385
		W (mm)	717	1041	1383
		Ø d. (mm)	15	19	29



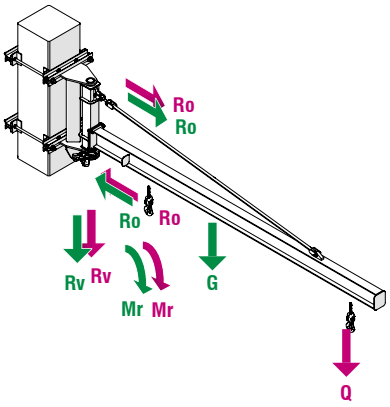
Note:
The installation of the jib crane on pillar requires check of suitability of the same, considering the moments and reactions as stated on pag. 25

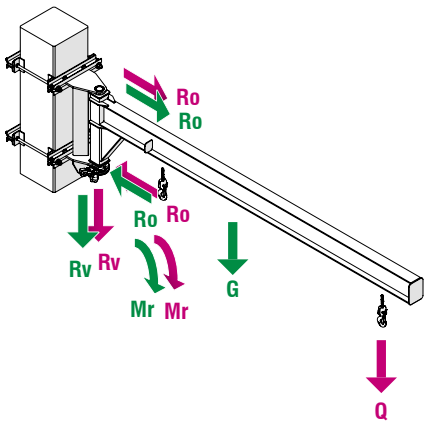
Technical data – Moments and Reactions

Of the jib cranes VHT "VB" series

Tilting moments (Mr) and Static reactions (Rv and Ro) of the Jib Cranes "Wall mounted" versions "VB-C" series

Legenda:
Mr= Tilting moment due to load Q
Mr= Tilting moment due to crane weight G
Rv= Vertical reaction due to load Q
Rv= Vertical reaction due to crane weight G
Ro= Horizontal reaction due to load Q
Ro= Horizontal reaction due to crane weight G





Capacity (kg)	Moments and Reactions	Reactions due to load (Q) and crane weight (G) with arm												Reactions due to load (Q) and crane weight (G) with arm											
		3 (m)		4 (m)		5 (m)		6 (m)		7 (m)		8 (m)		2 (m)		3 (m)		4 (m)		5 (m)		6 (m)		7 (m)	
		Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G	Q	G
125	Mr(kNm)	6	1,5	7,9	2,2	9,8	3,1	12	8,2	14	9,6	16	12	4,1	0,8	6	1,4	7,9	2,6	9,8	4,1	12	9,7	14	13
	Rv(kN)	1,9	0,9	1,9	1,1	1,9	1,2	1,9	2,2	1,9	2,4	1,9	2,6	1,9	0,8	1,9	0,9	1,9	1,2	1,9	1,6	1,9	2,9	1,9	3,2
	Ro (kN)	8,8	2,1	12	3,3	15	4,5	12	8,1	14	9,4	16	12	6	1,2	8,8	2	12	3,8	15	6,1	12	9,6	14	13
250	Mr(kNm)	9,9	1,5	14	4,3	17	5,2	20	7,2	23	9,1	26	12	6,7	0,8	9,9	1,7	14	4,6	17	6	20	11	23	15
	Rv(kN)	3,2	0,9	3,2	1,6	3,2	1,8	3,2	2,6	3,2	2,8	3,2	3,0	3,2	0,8	3,2	1,1	3,2	1,9	3,2	2,6	3,2	3,2	3,2	4,0
	Ro (kN)	15	2,1	14	4,2	17	5,1	20	7,1	23	9	26	11	9,9	1,2	15	2,5	14	4,5	17	5,9	20	11	23	15
500	Mr(kNm)	19	2,7	24	3,5	30	5,2	36	14	41	16	47	23	13	2	19	2,3	24	5,1	30	7,3	36	18	41	24
	Rv(kN)	5,7	1,4	5,7	1,6	5,7	1,9	5,7	3,2	5,7	3,5	5,7	4,7	5,7	1,5	5,7	1,7	5,7	2,2	5,7	2,8	5,7	4,5	5,7	5,6
	Ro (kN)	18	2,7	24	3,5	29	5,1	27	11	31	12	36	18	13	2	18	2,2	24	5	29	7,2	27	13	31	18
1000	Mr(kNm)	35	2,5	46	7,6	57	9,1	68	14	78	18	89	22	24	1,9	35	3,1	46	9,1	57	10	68	20	78	28
	Rv(kN)	11	1,4	11	2,4	11	2,6	11	3,8	11	4,2	11	4,7	11	1,5	11	1,9	11	3,3	11	4,0	11	5,5	11	7,0
	Ro (kN)	34	2,5	35	5,7	43	6,9	51	11	59	13	67	16	23	1,8	34	3	35	6,8	43	7,5	51	15	59	21
2000	Mr(kNm)	68	5,1	89	6,1	110	9,9	=	=	=	=	=	=	47	4,1	68	6,4	89	9,7	110	17	=	=	=	=
	Rv(kN)	21	2,1	21	2,4	21	3,2	=	=	=	=	=	=	21	2,4	21	2,8	21	3,9	21	5,4	=	=	=	=
	Ro (kN)	51	3,8	67	4,6	83	7,4	=	=	=	=	=	=	35	3,1	51	4,8	67	7,3	83	13	=	=	=	=

Note:

- The values given are based to static reactions (calculated for column with basic height H, as referred on pag.12 and 13) and must be multiplied with the proper dynamic coefficients Φ and compounds according the load combinations stated in the standards used for the calculation (example EN 13001-2).
- The reactions are divided into the parts due to load Q and crane weight G to allow the designer of the fixing structures of the jib crane, a right evaluation applying to each of them the relative partial safety coefficient γ_P.
- The check of the fixing structures of the jib cranes must be carried out by expert engineers which give the suitability and will officially take on the responsibility.

Example: composition of the reactions as described in the Standard EN 13001-2.

It is considered a jib crane with overbraced arm of capacity **500 kg**, arm **5 m** and column height **5,5 m.**

From the table we obtain the following static reactions due to crane weight: $Mr_{(G)}$ **= 5,3 kNm,** $Rv_{(G)}$ **= 3,6 kN.**

From the table we obtain the following static reactions due to load: $Mr_{(Q)}$ **= 30 kNm,** $Rv_{(Q)}$ **= 5,7 kN.**

According to Standard EN 13001-2 the composition of the reactions by multiplying each part for its relative dynamic coefficient and its partial safety coefficient to obtain the design values:

$$Mr_{Ed} = \Phi_1 \gamma_{p(G)}\, Mr_{(G)} + \Phi_2 \gamma_{p(Q)}\, Mr_{(Q)}$$

$$Rv_{Ed} = \Phi_1 \gamma_{p(G)}\, Rv_{(G)} + \Phi_2 \gamma_{p(Q)}\, Rv_{(Q)}$$

As defined in Standard EN 13001-2 can take on the following factors:

$\gamma_{p(G)}$ **= 1,16** (masses with unfavorable distribution type MDC1)

$\gamma_{p(Q)}$ **= 1,34**

Φ_1 **= 1,1**

Φ_2 **= 1,33** (value for the overload clutch calibration of the electric chain hoists VHT "VK" series).

NB: for the value of the coefficient 2 is recommended ascribed, prudently in favor of safety, to the overload clutch calibration stated by the Manufacturer of the installed hoist. Without data, the Standard EN 14492-2 indicates the maximum overload clutch calibration of 1,6.

From the composition of the reactions there are to the base of the column: Mr_{Ed} **= 60,2 kNm e** Rv_{Ed} **= 14,7 kN**

As indicated by the Standard EN 13001-2 the obtained values should be compared with their resistance values Mr_{Rd} and Rv_{Rd} obtained from characteristics value of resistance of the material through a reduced coefficient of resistance γ_m **= 1,1.**

Other Standard Executions

VHT Jib Crane VB series with 360° rotation

VHT JIB CRANES WITH ARTICULATED ARM, "VB-S" SERIES

***The jib cranes with articulated arm, "VB-S" series**, hand-pushed within a range of 360°, are available both in **"Column"** and **"Wall mounted"** execution.*
They represent the ideal way for moving materials in a workplace with obstacles that can be a hindrance to the free rotation of the arm, in case the arm was made from a single rigid element.
The "Articulated" jib cranes have an arm made of two segments rotating independently from each other, so to avoid the collision with fixed obstacles in the rotating field.
The "VB-S" series jib cranes wit articulated arm are available as standard for the following capacities and arms:

- ***jib cranes with capacities of 125 kg, 250 kg and 500 kg, with arms ranging from 3 to 7 m;***
- ***jib cranes with capacity of 1000 kg, with arm ranging from 3 to 5 m.***

NOTE:
technical specifications, dimensions and weights are available on request.

VHT JIB CRANES WITH ELECTRIC ROTATION ON SLEWING BEARING, "VB-R" SERIES

***The jib cranes with electric rotation on slewing bearing series "VB-R"**, are used to handle loads where manual handling operations is difficult or dangerous and, in particular, where:*

- ***The load is heavy and requires excessive pulling forces** (e.g. for capacities in access of 2.000 kg)*
- ***The shape and / or the nature of the load makes the handling dangerous** (e.g. warm materials)*
- ***The size of the load makes it difficult to oversee** (e.g. bulky goods)*
- ***The area of operation and use is prohibited or impassable** (e.g. hauling operations / launching boats).*

VB-R electric rotation:

- *The WLL from 2.000 up to 20.000 kg*
- *The arm length from 4 to 12 meters*

NOTE:
technical specifications, dimensions and weights are available on request.

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