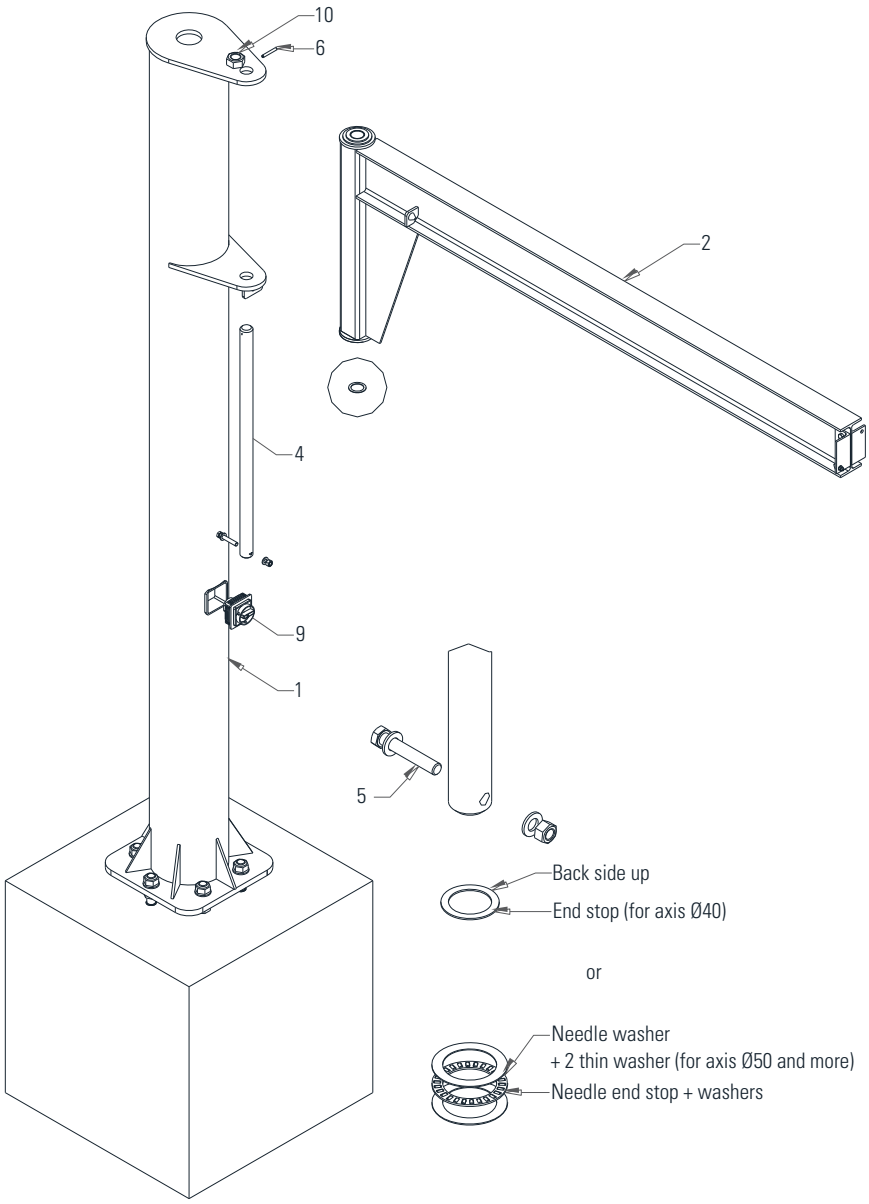
USER MANUAL

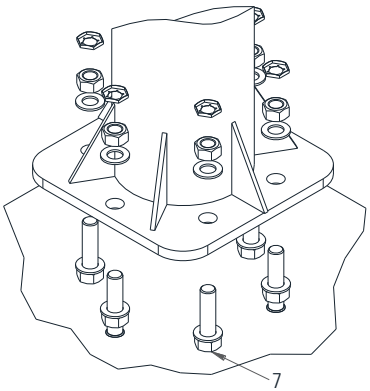
UNDERBRACED PILLAR JIB CRANE

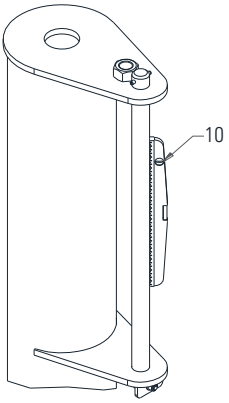
SUMMARY

ASSEMBLY INSTRUCTIONS
PILLAR JIB CRANES UNDERBRACED 270°



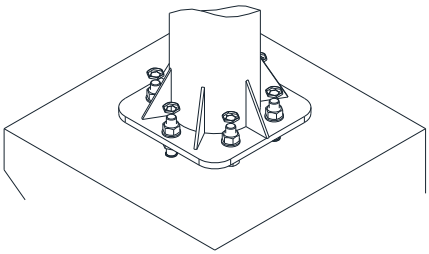
1. Erect the pillar ❶ of the jib crane on the anchor rods laying the bottom of the base plate on a row of nuts M27 ❼ (provided with rod).





Insert washers and nuts M27 on the upper part of the base plate. With a level ❿, check plumb on different positions around the pillar, adjust the vertical with the lower nuts and lock nuts to a torque of 80 daN.m.

Screw the safety nuts provided.



Other fixation system does not engage our responsibility and is not subject to the recommendation of this manual.

2. (See drawing page 5) Place the end stop item ❸ (or 3bis according to the model) on the lower bracket taking care to orient the black side of the end stop in the good side. This black face serving as a support to the rotation arm. Oil or grease.

3. Engage the arm ❷ thanks to an appropriate lifting mean.

4. Oil the axis ❹ insert it, mount the screw ❺. The secrutity pin ❻ will be mounted last.

5. Mount the slowing device (option page 5), the power supply (option page 5), the switch ❾ (option page 5)

MAINTENANCE

No special maintenance is required however following operation has to be done:

- Lubricate regularly rotation end stop,
- Check once a year the correct tightening of fixing screws and generally the tightening of all mounting screws.

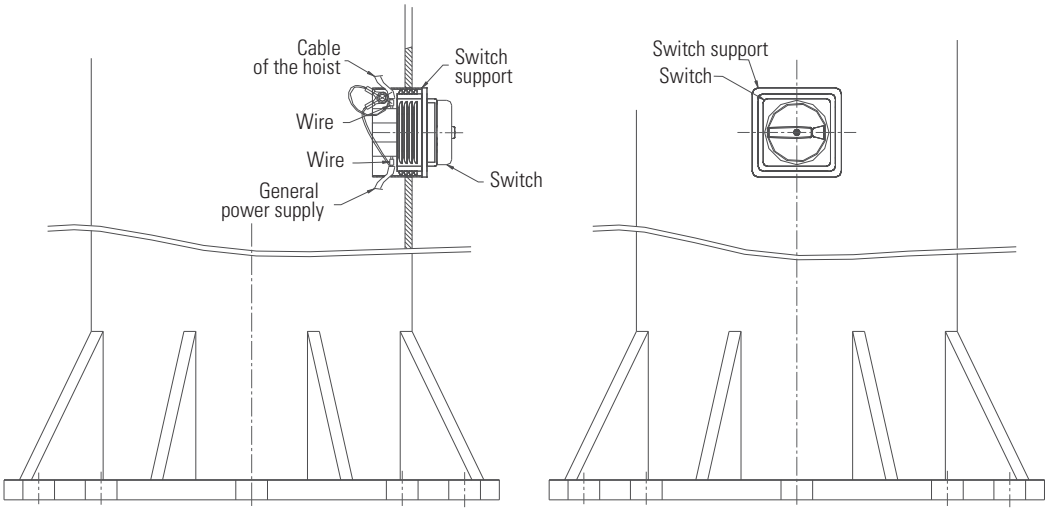
REMINDER

All lifting equipment devices must be validated by an official certificated organism before use.
It is strictly forbidden to use such installation for people transportation usage.

USE

Use accordingly to the safe working load (swf) define by the technical sheet.

ASSEMBLY INSTRUCTIONS
SWITCH



Assembly drawing of the lockable switch

Order of installation of the switch

1. Pull the main power cable.

2. Put the main power cable through the hole of the switch support, then crimp the ends of the wire provided.

3. Connect the 3 phases of the main power on terminals 1, 3 and 5.

4. Crimp the ground on one of the round lugs provided.

5. Pull the cable of the power supply of the hoist.

6. Put the feeding line of the hoist through the hole of the switch support, then crimp the ends of the wire provided.

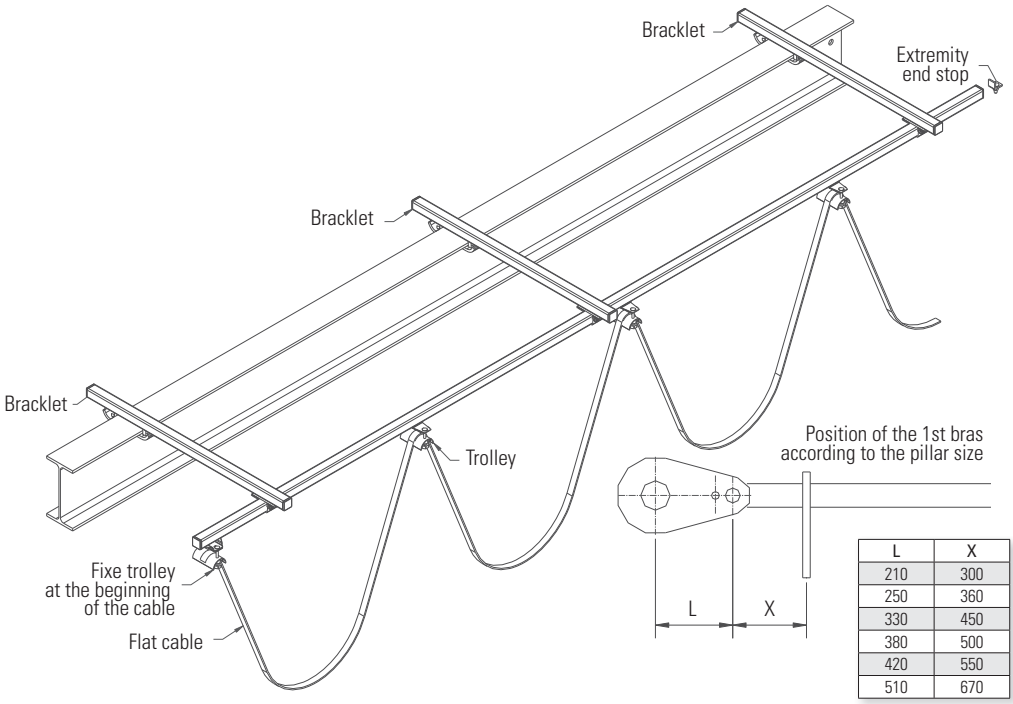
7. Connect the 3 phases of the main power on terminals 2, 4 and 6.

8. Crimp the ground on the 2nd round lugs provided.

9. Insert the slotted screw in the hole of the switch support, set up the two terminals and the ground togetherand block with the nut.

10. Place the switch and attach it to its support using the two hex screws and star washers provided.

ASSEMBLY INSTRUCTIONS
FEEDING LINE



L	X
210	300
250	360
330	450
380	500
420	550
510	670

1. Set the 1st bracket according to the position X of the attached drawing.

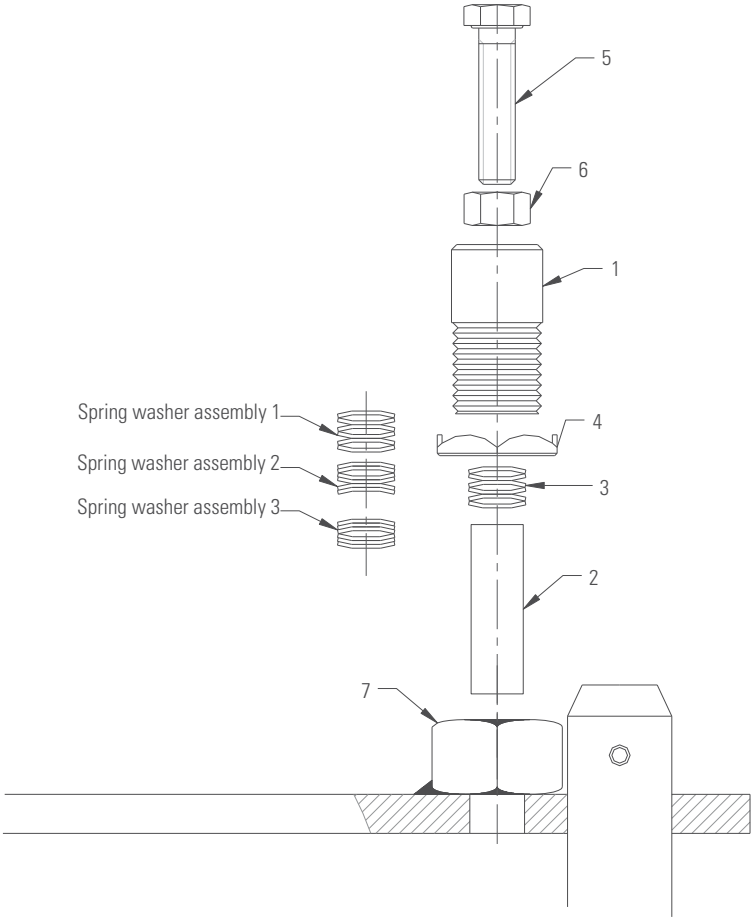
2. Put the next brackets with a maximum distance of 2m between them.

3. When the brackets are locked, engage the rail of the line in each bracket and fix it.

4. Insert first the fix trolley at the beginning of the line then the mobile trolley and finally the end stop.

5. Put the flat cable through the trolleys distributing them equally along the rail. Let 1m of cable at the end of the rail to plug in the hoist.

ASSEMBLY INSTRUCTIONS
SLOWING DEVICE



Installation

The slowing device can only be mounted once the arm is set.

1. Place the rubbing finger in nylon ❷ and the spring washers ❸ according to the needed break in the body of the slower ❶ :

- Assembly 1 : smooth breaking.
- Assembly 2 : Normal breaking
- Assembly 3 : hard breaking

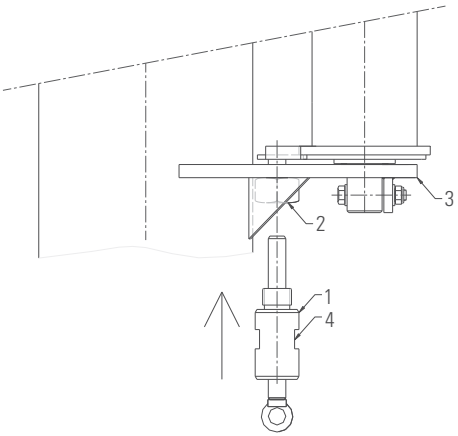
2. Screw the body of the slower and his counter nut ❹ on the existing nut M33 ❼ and lock it.

3. Adjust the pressure thanks to the screw ❺ provided to this purpose before locking it with the counter nut ❻.

ASSEMBLY INSTRUCTIONS
LOCKING DEVICE

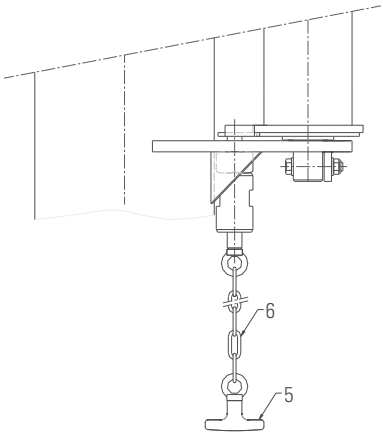
Installation

- Screw the lock body ❶ in the nut ❷ welded on the bracket (❸.
- Block there squeezing using an appropriate key on the flats ❹.
- The hand chain and the handle are already mounted on the locking pin.

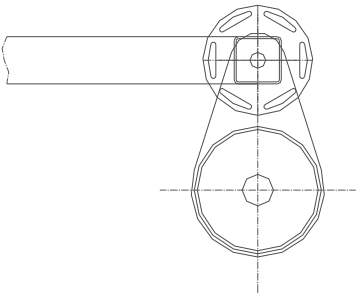


Utilisation

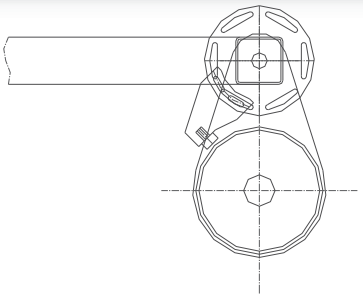
- Pull the handle ❺ located at the end of the chain ❻ to unlock.
- The locking position device finger is assembled on an internal spring. When the chain is released, the finger automatically comes up. During rotation, the locking will automatically matches in the indexing hole (if needed, adjust by cutting the locking finger extra length).
- If you want the lock does not come automatically, hanging chain in a stretched position on the flat welded at human height on the pillar of the jib crane.



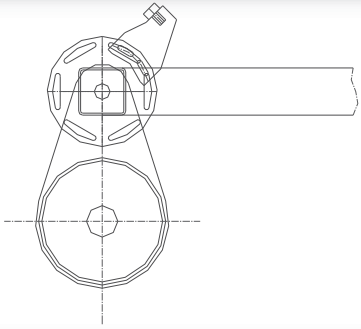
ASSEMBLY INSTRUCTIONS
ADJUSTABLE ROTATION STOPS



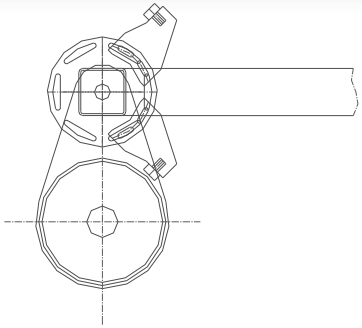
1. Put the arm in the first extrem needed position



2. Assemble the first end stop on the disc with the screw provided.

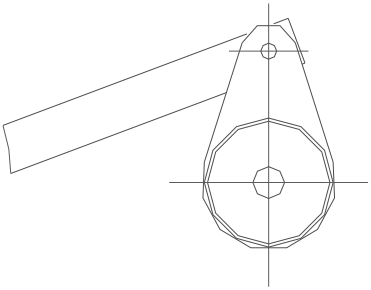


3. Place the arm in the second extrem position.

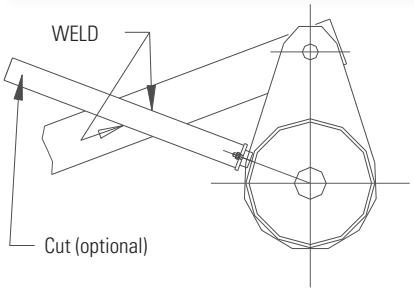


4. Assemble the second end stop on the disc in the step 2.

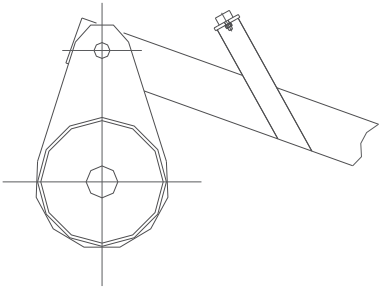
ASSEMBLY INSTRUCTIONS
END STOP TO WELD



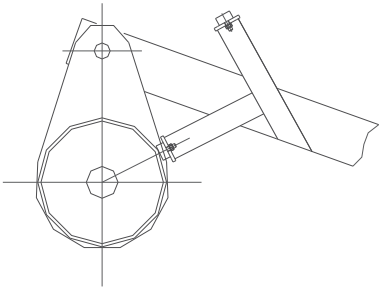
1. Put the arm in the first extrem needed position



2. Weld the first end stop on the upper part of the arm then cut the end of the U.
Important : Align the axis of the end stop and the diametral axis of the pillar.



3. Place the arm in the second extrem position.

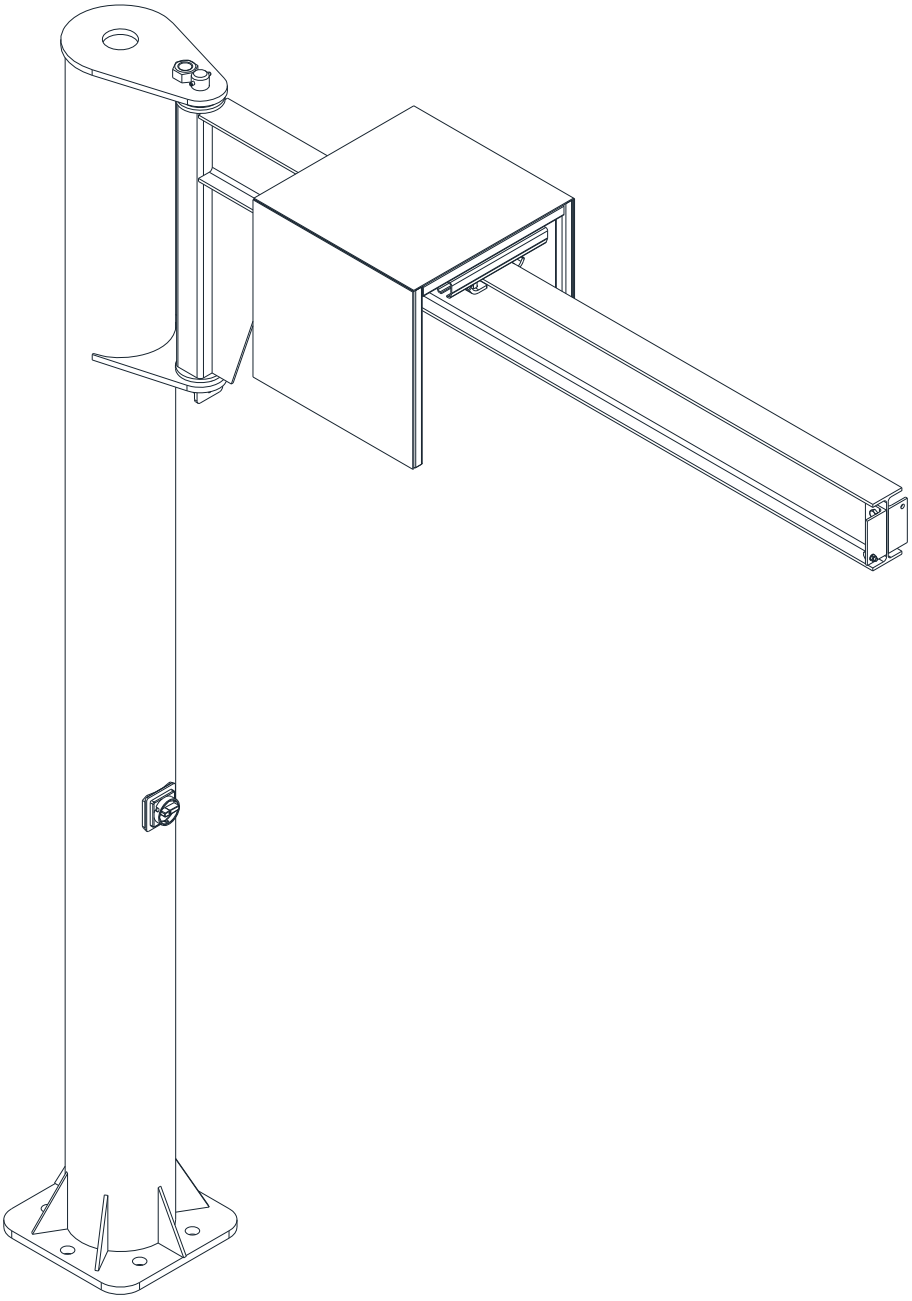


4. Cut the second end stop according to your need the weld it on the upper part of the arm like on step 2.

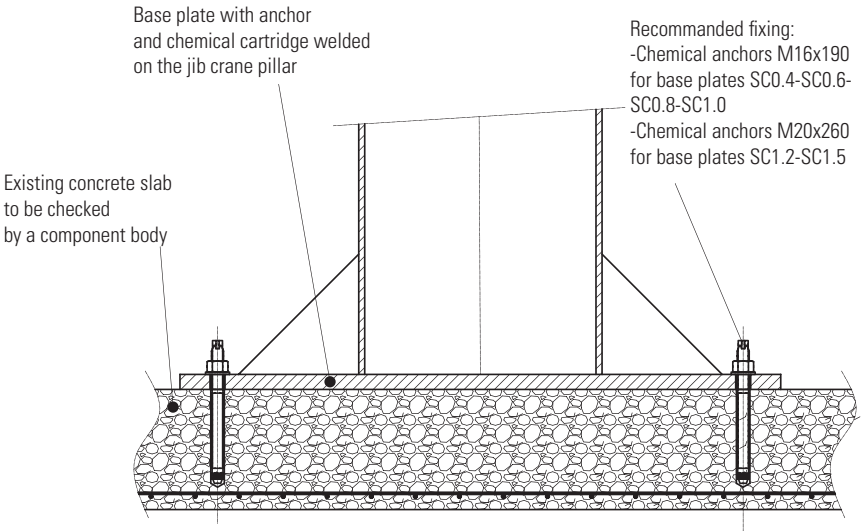
ASSEMBLY INSTRUCTIONS HOIST COVER

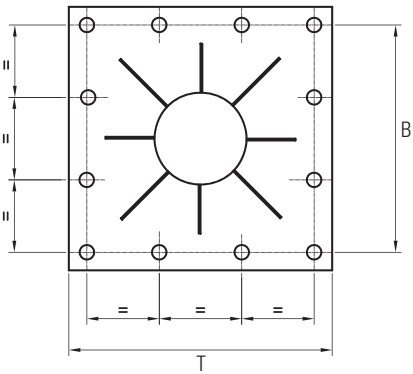
Installation

- Center the cover between the beam, the hoist and the line, before tightening the clamp.
- **Warning ! Do not position the cover to close to the axis, it would affect your slewing range**



SPECIFIC PROCEDURE FOR BASE PLATE WITH ANCHORS & CHEMICAL CARTRIDGES





Ø20 for anchors Ø16, base plates SC03 - SC04 - SC06 - SC08 - SC10
Ø25 for anchors Ø20, base plates SC12 - SC15

N°	TxT	Number of holes	Ø	BxB	Thick	CR
SC0.3	300 x 300	4	20	250 x 250	12	250 DaN.m
SC0.4	400 x 400	8	20	350 x 350	15	1 000 DaN.m
SC0.6	600 x 600	8	20	500 x 500	15	1 500 DaN.m
SC0.8	800 x 800	12	20	700 x 700	20	3 800 DaN.m
SC1.0	1 000 x 1 000	16	20	900 x 900	20	6 000 DaN.m
SC1.2	1 200 x 1 200	16	25	1 100 x 1 100	20	8 000 DaN.m
SC1.5	1 500 x 1 500	16	25	1 400 x 1 400	20	12 000 DaN.m

This type of fixation is to be used with the biggest caution, and while the use of a concrete foundation mass is impossible. This solution imposes a concrete slab of sufficient thickness and quality, to be verifiçed in accordance with the bending moments recommended in the general documentation.

In any case, WE RELEASED OUR RESPONSABILITY as to the keeping of this type of fastening.

These base plates are not dismountable from the jib crane table.

CR = Bending moment mentioned in the pillar jib crane table.

We join for information and as example the technical characteristics of WURTH anchors.

This mark/model is neither imposed nor contractual.

21.1

W-VD/S Shear-Anchor Cartridge System

Individual attachment: Uncracked concrete

Galvanized steel

W-VD/A4 Shear-anchor cartridge system see 21.2

W-VD/HCR Shear-anchor cartridge system see 21.2

Evidence of performance

Approvals	Test reports
European Technical Approval Option 8 for uncracked concrete	**Fire Resistance**

Drill hole cleaning
Cleaning the drill hole: 1x blow-out, 1x brush-out, 1x blow-out, 1x brush-out

Installation instructions
Set anchor bar rotating and + impacting with hammer drill or percussion drill.

1. Applications

- Can be used for medium to heavy loads
- With European Technical Approval, the anchor can be used in reinforced or non-reinforced standard concrete with a strength class of at least C20/25 and at most C50/60 in accordance with EN 206:2000-12
- Anchorage with European Technical Approval in uncracked concrete (concrete pressure zone)
- The anchor may be used for anchorage with primarily static loads (e.g. own weight, installations, support materials) or quasi-static loads
- Installation in dry or wet concrete
- The temperature in the mortar area may not exceed +50 °C and briefly +80 °C
- For use in concrete < C20/25 and pressure-resistant natural stone (without approval)
- W-VD/S (galvanized steel) can be used in dry interior rooms
- Suitable for fastening metal constructions, metal profiles, brackets, foot plates, supports, wood structures, beams etc.

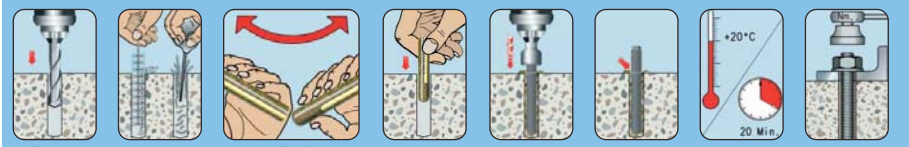
2. Advantages

- Heavy loads, small axial and edge distances
- Hardened composite mortar largely seals off the drill hole
- Attachment with low expansion pressure allows small edge and axial clearances

3. Properties

- Anchoring through bond between mortar, anchor bar and anchoring base. Galvanized anchor bar in the sizes M8, M10, M12, M16, M20 and M24
- Galvanized steel: European Technical Approval ETA-06/0074
- Dimensioned in accordance with the "Guideline for European Technical Approval (ETAG) of Metal Anchors for Use in Concrete", Annex C, dimensioning method A
- Fire resistance: **F30, F60, F90, F120:** One-sided fire stress according to DIN EN 1363-1:1999-10

Setting instructions



Drill hole | 1x blow-out, 1x brush-out, 1x blow-out, 1x brush-out | Resin must flow like honey when cartridge is hand-warm | Push in cartridge | Set threaded rod rotating/ impacting | Visual check of mortar filling quantity | Observe the hardening time | Mount component, apply torque

SHEAR-ANCHOR CARTRIDGE SYSTEM W-VD/A4, W-VD/HCR

Performance data

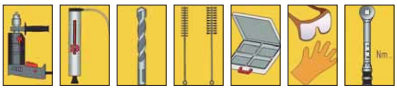
Anchor diameter			M8	M10	M12	M16	M20	M24
Permissible central tensile load[1] on a single anchor without edge influence	**Pressure zone** (uncracked concrete C20/25 M8: $s \geq 3\ h_{ef}$, $c \geq 1.5\ h_{ef}$ M10–M24: $s \geq 2\ h_{ef}$, $c \geq 1\ h_{ef}$)	**N_{perm} [kN] = C20/25** 50°C[2]/80°C[3]	7.9	11.9	15.9	19.8	29.8	35.7
Perm. transverse load[1] on a single anchor without edge influence	**Pressure zone** (uncracked concrete C20/25, $c \geq 10\ h_{ef}$)	**$V_{perm.}$ [kN] = C20/25** 50°C[2]/80°C[3]	6.0	9.2	13.3	25.2	39.4	56.8
Permissible bending torque		**$M_{perm.}$ [Nm]**	11.9	23.8	42.1	106.7	207.9	359.4
Fire-resistance duration		**F30 [kN]**	2.3	3.64	5.26	9.79	15.28	22.01
		F60 [kN]	1.29	2.04	3.07	5.72	8.93	12.86
		F90 [kN]	0.79	1.3	2.0	3.68	5.75	8.28
		F120 [kN]	0.53	1.0	1.5	2.67	4.16	6.0

Characteristic values

Minimum axial spacing	**s_{min} [mm]**	40	45	55	65	85	105
Axial spacing	**$s_{cr,N}$ [mm]**	240	180	220	250	340	420
Minimum edge spacing	**c_{min} [mm]**	40	45	55	65	85	105
Edge spacing	**$c_{cr,N}$ [mm]**	120	90	110	125	170	210
Minimum component thickness	**h_{min} [mm]**	110	120	140	160	220	260
Effective anchoring depth	**h_{ef} [mm]**	80	90	110	125	170	210
Nom. drill dia.	**d_0 [mm]**	10	12	14	18	25	28
Drill cutting dia.	**$d_{cut} \leq$ [mm]**	10.5	12.5	14.5	18.5	25.5	28.5
Drill hole depth	**$h_0 \geq$ [mm]**	80	90	110	125	170	210
Through-hole in the component being connected	**$d_f \leq$ [mm]**	9	12	14	18	22	26
Torque while installing anchor	**T_{inst} = [Nm]**	10	20	40	80	120	180
Cleaning brush dia.	**D [mm]**	11	13	16	20	27	30

Storable in ORSY®

Würth System Components



[1] The part-safety coefficients of the resistances regulated in the approval and a part-safety coefficient of the effects of γ_F = 1.4 have been taken into account. For the combination of tensile and transverse loads, for edge influence and anchor groups, please refer to the Guideline for European Technical Approval (ETAG), Appendix C.
[2] Maximum long-term temperature
[3] Maximum short-term temperature

WHAT TO DO AND WHAT NOT TO DO

It is very important to read these instructions carefully to enable you to install, use and maintain your equipment and reduce any risks caused by its incorrect use.
Any use that is not compliant with the following is dangerous and the manufacturer refuses to accept any liability in such cases.
Please comply with the instructions given below.

WHAT TO DO

GENERALLY

- Read and follow the instructions given in the introduction manual carefully, starting from initial commissioning. During repair or maintenance, use only «standard parts».
- Always keep the instructions manual and the user instructions near the equipment, available to the operator and the person in charge of maintenance.

TRANSPORT / STORAGE

- Handle the equipment and its structure either using the devices provided for the purpose or in the original package.
- Store the equipment away from any harsh environmental conditions (dust, damp…). It must be cleaned and protected from corrosion (lubrication…)

INSTALLATION / MAINTENANCE / INTERVENTIONS

- Have trained people who are electrically and mechanically competent deal with installation.
- Require absolute compliance with the safety rules (harnesses, clearance around working areas, cordoning off the area…)
- Ensure that the equipment attaching structure is rigid.
- Neutralize any sources of electric power.
- Keep strictly to the installation instructions mentioned in the equipment instructions manual.
- Connect directly the power supply cable to the power supply terminal of the electrical unit :
  - the cable must be assembled in accordance with the manual, greased and run in by several maneuvers without a load,
  - the line must be assembled in accordance with the manual, oiled and run in by several maneuvers without a load.
- Set out an inspection program and record all the maintenance work carried out on the equipment, and more particularly: hooks, sheave assemblies, chains or cables, brakes and travel end switches.
- Replace any suspicious or worn parts.

AFTER EXTENDED STOPPAGE OR DURING A CHECK :

- Check the operation and adjustment of the safety devices (brake, travel ends, limiters…) in accordance with the instruction manual.
- Regularly check the condition of the chain or cable and of the hooks.
- If a deformation or any wear is observed, replace the parts.
- Keep the cable clean and greased at all times.
- Check that all of the assembly components are tight.
- Check the condition of the lifting cable component wires.
- Check that the chains are not twisted and are free of any damage.
- Check that the steel cables strands supporting the pushbutton box fulfil their functions. The pushbutton box conductor cable is not a handling cable.

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Any use that is not compliant with the following is dangerous and the manufacturer refuses to accept any liability in such cases.
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WHAT NOT TO DO

TRANSPORT / STORAGE

- Never move or lift the equipment of using the electrical cables.
- Never put the hoist down without using a suitable support to avoid damage to the components on the underside.

INSTALLATION / MAINTENANCE / INTERVENTIONS

- Never modify the equipment without suitable study and the authorization of the manufacturer.
- Never change the values and settings of the safety devices outside the limits provided for in the manual or without the agreement of the manufacturer.
- Never bypass isolating switches, electrical switches, prevention or limiting equipment.

IN USE

- Never transport a load without keeping the personnel at a distance. Never have the book, loaded or empty, move above the personnel.
- Never let anybody unqualified use the equipment.
- Never lift a load exceeding the maximum operating load indicated on the equipment. Shock or accidental catching of the load being handled with the environment can generate overloads.
- Never remove the tab from the hook.
- Never block, adjust or remove switches or end of travel devices to go higher or lower than permitted by them.
- Never use the equipment to pull away, un-jam or pull sideways.
- Never use the equipment to transport people.
- Never touch any moving parts.
- Never use equipment that is in poor condition (wear, deformation…)
- Never use defective spare parts or whose origin in not fully known.
- Never swing the load intentionally.
- Do not cause abrupt movement so n the equipment.
- Never use the mechanical stops as a means of repetitive stoppage.
- Never use the lifting chain or cable as a sling.
- Never sling anything from the nose of the hook (risk of damage to hook and falling of load)
- Never use the hook when cantilevered.
- Never twist the loading chains. (turn-around of the sheave…).
- Never use the electric cables to move the equipment around.
- Never leave a load hanging.
- Never use the equipment as a ground reference for welding.
- Never use the equipment for any purpose or in any place for which it was designed.
- Never use the safety devices as a means of measuring the carried weight.
- Never use the controls pointlessly (avoid keying on them). This can cause overheating or even the deterioration of the equipment.
- Never pull a load cross-wise or bring the equipment vertically above the load before lifting it.
- Never use the equipment with an electric power supply that is different from the one recommended (under or over voltage, absence of a phase…)

TEST UNDER LOAD OF THE JIB CRANES AND OF THE GANTRY CRANES

To ensure the good performance of the equipment, and in the absence of specific legislation, the following is recommended by the manufacturer in terms of dynamic and static load tests on standard devices.
Any other regulation, whether related to specific conditions of a country or a particular use should be specifications duly approved by the manufacturer.

DYNAMIC TESTS

For the dynamic tests will be added an overload of 10% at rated load, whether electric or manual lifting.

The tests are therefore performed on all movements (lifting, travelling, translation, rotation etc ...) It will not be necessary to lift the load to its maximum heightbut it is possible to do it and no time is imposed.

One move of each movement is necessary and sufficient.

Interpretation of dynamic tests :

During these tests the hoist + trolley must remain stable. Ensure no visible distortion too important.

Measure the height under beam or over beam empty before applying the load (Load at the end of the arm if it is a jib crane or at the center if it is a gantry crane) and remeasure under dynamic load.

Do the ratio to recalculate the measured deflection under dynamic load by dividing by 1.1 in order to interpret **Deflection under nominal load**, this deflection is directly proportional to the load.

Only the deflection under nominal load is interpretable to the exclusion of any other!

For pillar jib cranes, deflection observed **(interpreted under nominal load)** must not exceed 1/100th of the span and 1/200th of the sum Height + Span.

For wall jib cranes, deflection should not exceed 1/200th of the span (it will not take into account the possible deformation of the post which is supposedly of sufficient size and have been calculated by the user).

For gantry cranes, deflection should not exceed 1/500th of the span.

If the dynamic tests give satisfaction, there will be static tests.

To ensure the good performance of the equipment, and in the absence of specific legislation, the following is recommended by the manufacturer in terms of dynamic and static load tests on standard devices.
Any other regulation, whether related to specific conditions of a country or a particular use should be specifications duly approved by the manufacturer.

STATIC TESTS

Static testing has for single purpose to ensure the strength of the assembly and verify the absence of permanent deformation or residual.

No deflection measurement shall be interpreted during these tests if it is only to verify the absence of permanent deformation

Requirements during the static tests :

For static tests, it will be an overload applied **in more than 25% of the rated load,** whether it be a manual or electric lifting.

These tests will be performed only on the lifting arms of the bracket in the center position (end of the load arm in the case of jib crane and to the center of a gantry).

It is forbidden to lift the load increased by 25% with the device but additional weights are added to the dynamic load. In the case of a wall jib, the static test will be done in the sense that less strains the the building structure.

The duration of this test shall not exceed 30 min.

Interpretation of static tests:

If after static tests, no permanent or residual deformation is found, the device can be operated.

As defined in the European Machinery Directive, any calculation notes will not be issued unless requested to ordering and duly accepted by Comege, as well as the detailed plans, schedules etc. .... which are the subject of the information folder and as such are confidential documents.

Concerning electric chain hoists:

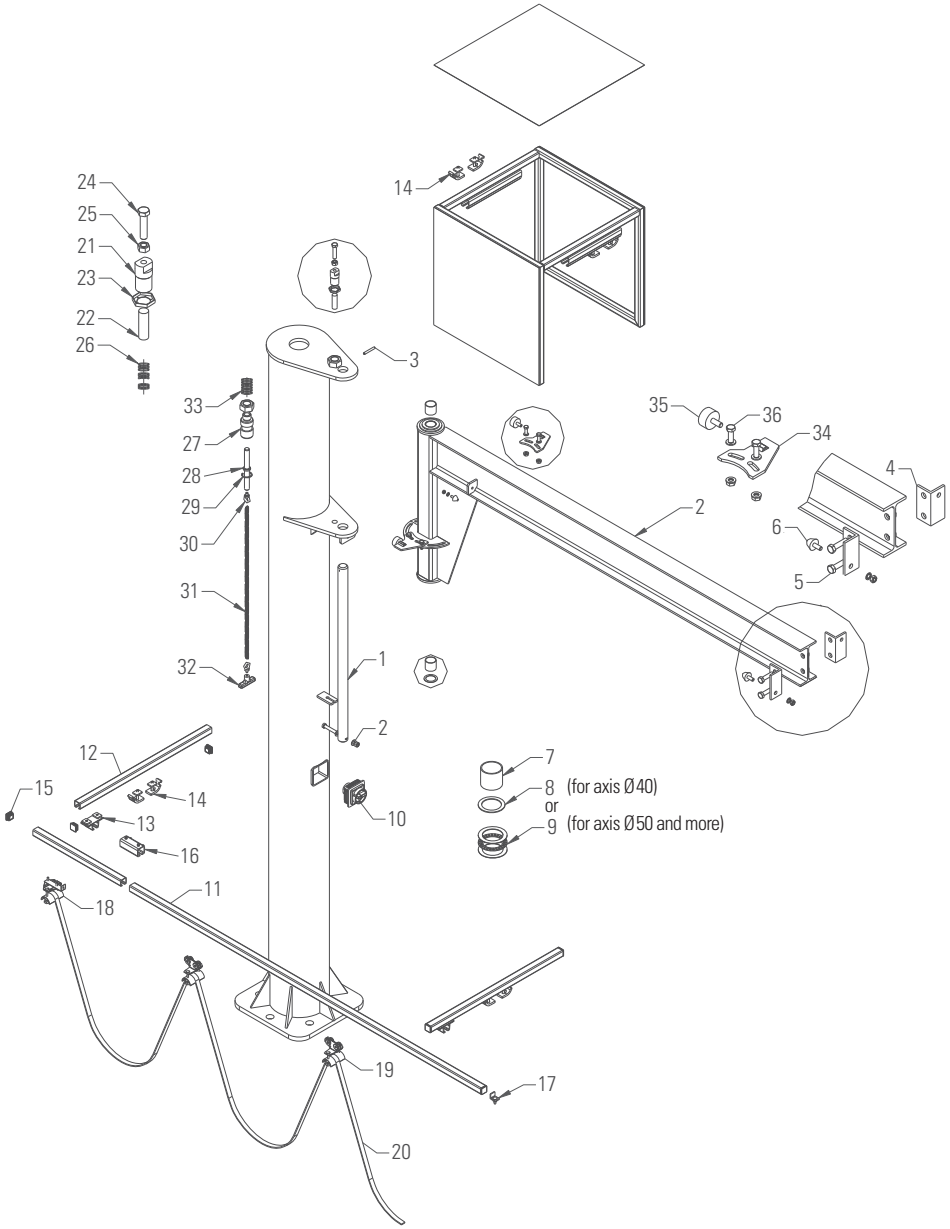
It is reminded that these devices are equipped with **torque limiters** and not **load limiters.**

Also for security reasons, their setting far exceeds the trigger threshold 110% of the rated load.

It is quite acceptable that the torque limiters can be «*calibrated*» to 125 or even 130% of rated load.

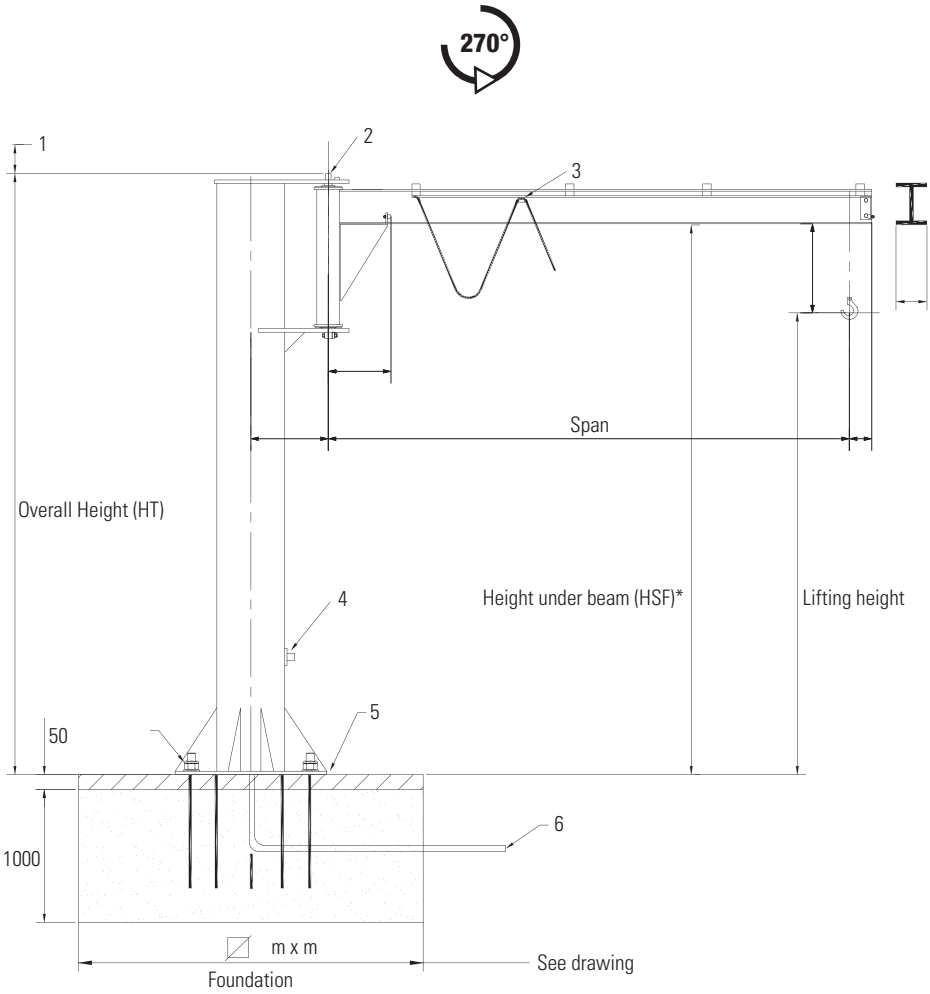
This measure aimed to anticipate wear slip friction system providing torque limit and prevent and to the risk of «*slippage*» of the load.

SPARE PARTS
UNDERBRACED PILLAR JIB CRANE



	N°	Description	Standard	Option
Jib crane	1	Slewing axis	X	
	2	Bolt stop for the axis	X	
	3	Cotter	X	
	4	Extrem end stop	X	
	5	Bolts for the end stop	X	
	6	Rubber bump + bolts	X	
	7	Ring	X	
	8	End stop	X	
	9	Needle end stop + washers	X	
	10	Lockable switch		X
Feeding line (option)	11	Power supply rail		X
	12	Bracket		X
	13	Suspension claw		X
	14	Clamp		X
	15	Plastic cap		X
	16	Junction plate		X
	17	Power supply and stop		X
	18	Fixed cable trolley		X
	19	Mobile cable trolley		X
	20	Cable		X
Slowing Device (option)	21	Body of the break		X
	22	Rubbing finger		X
	23	Bolt		X
	24	Adjustment screw		X
	25	Counter bolt		X
	26	Spring washer		X
Locking Device (option)	27	Hub		X
	28	Shaft		X
	29	Elastic ring		X
	30	Ring screw		X
	31	Chain		X
	32	Handle		X
	33	Spring		X
Adjustable unstop	34	Adjustable unstop bracket		X
	35	Rubber bump		X
	36	Screw for adjustable unstop		X

SPECIFICATIONS
PILLAR JIB CRANES UNDERBRACED



1	Necessary clearance for assembly = 150 mm
2	Rotation slowing device (option) HT + 70 mm
3	Feeding line (option)
4	Lockable lain switch (option)
5	Base plate n°
6	Sheat for supply cable (optional)

Max. capacity	Span	Height under beam HSF (1)	Overall Height (HT)	a	b	c	l	Standard Base plate	Foundation	Splitable base plate (2)	Total Weight	Pillar weight	Arm weight	Additional weight for HSF + 10 cm	Additional weight SC	Hsf maxi	Maximum moment
kg	m	m	m	mm	mm	mm	mm	N°	m	N°	Kg	Kg	Kg	Kg	Kg	m	DaN.m
125	2	3	3,26	210	335	150	91	4	0,9	SC04	179	122	57	3	-8	8,5	517
125	2,5	3	3,26	210	335	150	91	4	0,95	SC04	188	122	66	3	-8	6,5	646
125	3	3	3,26	210	335	150	91	4	1	SC04	197	122	75	3	-8	5	781
125	3,5	3	3,26	210	335	150	91	4	1,05	SC04	207	122	85	3	-8	4	920
125	4	3	3,26	250	335	150	91	4	1,1	SC06	257	163	94	4	23	7,5	1074
125	4,5	3	3,28	250	365	150	100	4	1,2	SC06	292	164	128	4	23	7	1261
125	5	3	3,28	250	365	150	100	4	1,25	SC06	303	164	139	4	23	6	1423
125	5,5	3	3,32	330	365	150	120	5	1,3	SC08	465	268	197	6	77	11	1746
125	6	3	3,32	330	365	150	120	5	1,35	SC08	480	268	212	6	77	11	1944
125	6,5	3	3,32	330	365	150	120	5	1,4	SC08	495	268	227	6	77	11	2150
125	7	3	3,32	330	365	150	120	5	1,45	SC08	511	268	243	6	77	11	2364
125	7,5	3	3,32	330	365	150	120	5	1,5	SC08	526	268	258	6	77	11	2585
125	8	3	3,32	330	365	150	120	5	1,55	SC08	541	268	273	6	77	9,5	2814
125	8,5	3	3,32	330	365	150	120	5	1,6	SC08	557	268	289	6	77	5,5	3051
125	9	3	3,38	380	430	150	150	6	1,7	SC08	777	334	443	7	49	11	3798
125	9,5	3	3,38	380	430	150	150	6	1,75	SC10	798	334	464	7	122	11	4105
125	10	3	3,38	380	430	150	150	6	1,8	SC10	819	334	485	7	122	11	4422
125	10,5	3	3,38	380	430	150	150	6	1,8	SC10	840	334	506	7	122	11	4750
125	11	3	3,38	380	430	150	150	6	1,85	SC10	861	334	527	7	122	7,5	5088
125	11,5	3	3,38	420	430	150	150	6	1,9	SC10	922	374	548	8	126	11	5455
125	12	3	3,44	420	630	150	170	7	2,05	SC12	1240	428	812	8	204	11	6925
250	2	3	3,26	210	335	150	91	4	1	SC04	179	122	57	3	-8	4,5	760
250	2,5	3	3,26	210	335	150	91	4	1,1	SC04	188	122	66	3	-8	4	944
250	3	3	3,26	250	335	150	91	4	1,15	SC06	238	163	75	4	23	6	1148
250	3,5	3	3,26	250	335	150	91	4	1,2	SC06	248	163	85	4	23	4,5	1342
250	4	3	3,26	250	335	150	91	4	1,25	SC08	323	229	94	6	96	5	1541
250	4,5	3	3,32	330	365	150	120	5	1,35	SC08	434	268	166	6	77	11	1903
250	5	3	3,32	330	365	150	120	5	1,4	SC08	449	268	181	6	77	11	2141
250	5,5	3	3,32	330	365	150	120	5	1,45	SC08	465	268	197	6	77	9,5	2387
250	6	3	3,32	330	365	150	120	5	1,5	SC08	480	268	212	6	77	8	2640
250	6,5	3	3,32	380	365	150	120	5	1,55	SC08	534	307	227	7	74	8,5	2922
250	7	3	3,38	380	430	150	150	5	1,65	SC08	678	319	359	7	74	11	3489
250	7,5	3	3,38	380	430	150	150	6	1,7	SC10	714	334	380	7	122	10	3808
250	8	3	3,38	380	430	150	150	6	1,75	SC10	735	334	401	7	122	8,5	4138
250	8,5	3	3,38	420	430	150	150	6	1,8	SC10	796	374	422	8	126	11	4499
250	9	3	3,44	420	630	150	170	6	1,9	SC10	1036	396	640	8	126	11	5482
250	9,5	3	3,44	420	630	150	170	6	1,95	SC10	1065	396	669	8	126	11	5915
250	10	3	3,44	420	630	150	170	6	2	SC12	1093	396	697	8	226	11	6361
250	10,5	3	3,44	420	630	150	170	7	2,05	SC12	1154	428	726	8	204	10,5	6823
250	11	3	3,44	510	630	150	170	7	2,1	SC12	1350	595	755	13	200	11	7355
250	11,5	3	3,44	510	630	150	170	7	2,15	SC12	1378	595	783	13	200	11	7846
250	12	3	3,44	510	630	150	170	7	2,2	SC15	1407	595	812	13	401	11	8352
500	2	3	3,26	250	335	150	91	4	1,2	SC06	220	163	57	4	23	4,5	1392
500	2,5	3	3,26	250	335	150	91	4	1,3	SC08	229	163	66	4	96	4	1715
500	3	3	3,32	330	365	150	120	5	1,4	SC08	388	268	120	6	77	10,5	2151
500	3,5	3	3,32	330	365	150	120	5	1,5	SC08	403	268	135	6	77	8	2504
500	4	3	3,32	330	365	150	120	5	1,55	SC08	419	268	151	6	77	6	2864
500	4,5	3	3,32	330	365	150	120	5	1,6	SC08	434	268	166	6	77	4,5	3232
500	5	3	3,38	380	430	150	150	6	1,7	SC08	608	334	274	7	49	7,5	3796
500	5,5	3	3,38	380	430	150	150	6	1,75	SC10	629	334	295	7	122	6,5	4210
500	6	3	3,38	380	430	150	150	6	1,8	SC10	650	334	316	7	122	4	4636
500	6,5	3	3,38	420	430	150	150	6	1,85	SC10	711	374	337	8	126	6,5	5101
500	7	3	3,44	420	630	150	170	6	1,95	SC10	922	396	526	8	126	8	5935
500	7,5	3	3,44	420	630	150	170	6	2	SC12	951	396	555	8	226	7	6448
500	8	3	3,44	510	630	150	170	7	2,1	SC12	1178	595	583	13	200	11	7050
500	8,5	3	3,44	510	630	150	170	7	2,15	SC12	1207	595	612	13	200	11	7593
500	9	3	3,44	510	630	150	170	7	2,2	SC15	1235	595	640	13	401	11	8150
500	9,5	3	3,55	510	770	150	190	7	2,3	SC15	1507	595	912	13	401	11	9696
500	10	3	3,55	510	770	150	190	8	2,35	SC15	1622	671	951	13	344	11	10384
500	10,5	3	3,55	510	770	150	190	8	2,4	SC15	1660	671	989	13	344	11	11091
500	11	3	3,55	510	770	150	190	8	2,45	SC15	1699	671	1028	13	344	11	11818
500	11,5	3	3,55	510	770	150	190	8	2,5		1738	671	1067	13		11	12565
1000	2	3	3,32	330	365	150	120	5	1,55	SC08	357	268	89	6	77	8	2868
1000	2,5	3	3,32	330	365	150	120	5	1,65	SC08	373	268	105	6	77	5,5	3505
1000	3	3	3,38	380	430	150	150	6	1,75	SC10	524	334	190	7	122	7	4270
1000	3,5	3	3,38	380	430	150	150	6	1,85	SC10	545	334	211	7	122	5,5	4943
1000	4	3	3,38	380	430	150	150	6	1,95	SC10	566	334	232	7	122	4	5626
1000	4,5	3	3,38	420	430	150	150	6	2	SC12	627	374	253	8	226	5	6371
1000	5	3	3,44	420	630	150	170	7	2,1	SC12	840	428	412	8	204	5,5	7278
1000	5,5	3	3,44	510	630	150	170	7	2,2	SC15	1035	595	440	13	401	11	8156
1000	6	3	3,44	510	630	150	170	7	2,25	SC15	1064	595	469	13	401	10	8927
1000	6,5	3	3,55	510	770	150	190	7	2,35	SC15	1274	595	679	13	401	11	10180
1000	7	3	3,55	510	770	150	190	7	2,4	SC15	1313	595	718	13	401	10,5	11052
1000	7,5	3	3,55	510	770	150	190	8	2,45	SC15	1428	671	757	13	344	9,5	11943
1000	8	3	3,55	510	770	150	190	8	2,55		1466	671	795	13		8,5	12854
1600	2	3	3,38	380	430	150	150	6	1,8	SC10	482	334	148	7	122	7	4646
1600	2,5	3	3,38	380	430	150	150	6	1,95	SC10	503	334	169	7	122	5	5653
1600	3	3	3,38	420	430	150	150	6	2,05	SC12	564	374	190	8	226	5,5	6749
1600	3,5	3	3,38	420	430	150	150	7	2,15	SC12	607	396	211	8	204	4	7777
1600	4	3	3,44	420	630	150	170	7	2,25	SC15	783	428	355	8	349	4,5	8947
1600	4,5	3	3,44	510	630	150	170	7	2,35	SC15	978	595	383	13	401	9	10213
1600	5	3	3,44	510	630	150	170	7	2,45	SC15	1007	595	412	13	401	7	11311
1600	5,5	3	3,55	510	770	150	190	8	2,55		1272	671	601	13		8,5	12762
1600	6	3	3,55	510	770	150	190	8	2,6		1311	671	640	13		7	13950
1600	6,5	3	3,55	510	770	150	190	8	2,65		1350	671	679	13		6	15157
2000	2	3	3,38	380	430	150	150	6	1,95	SC10	482	334	148	7	122	5	5693
2000	2,5	3	3,38	420	430	150	150	7	2,05	SC12	565	396	169	8	204	5,5	7016
2000	3	3	3,38	420	430	150	150	7	2,2	SC15	586	396	190	8	349	4	8253
2000	3,5	3	3,44	420	630	150	170	7	2,3	SC15	754	428	326	8	349	4	9604
2000	4	3	3,44	510	630	150	170	7	2,4	SC15	950	595	355	13	401	8	11114
2000	4,5	3	3,55	510	770	150	190	8	2,5		1195	671	524	13	401	8,5	12648
2000	5	3	3,55	510	770	150	190	8	2,6		1234	671	563	13		7,5	14017


500 KG