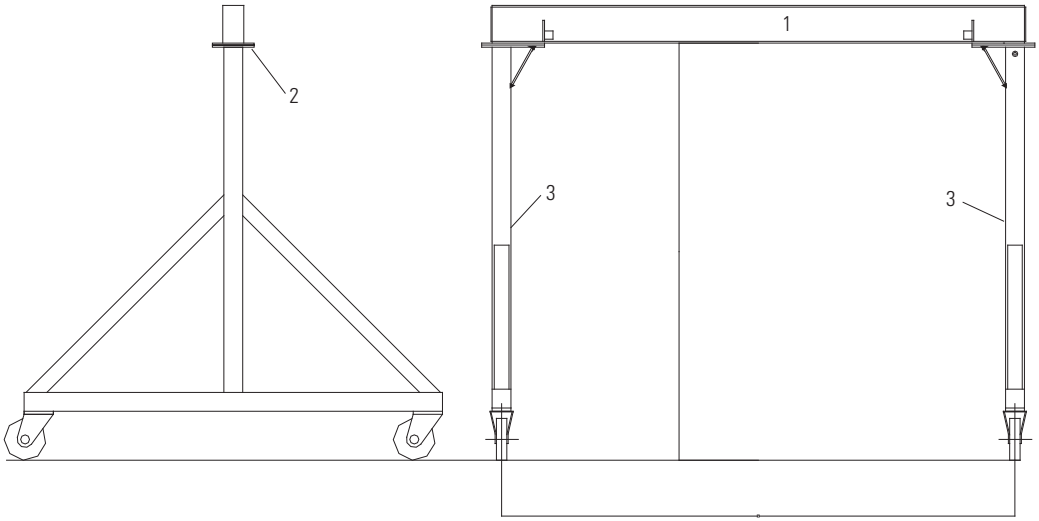
USER MANUAL

WORKSHOP GANTRY CRANES MOVABLE UNDER LOAD

SUMMARY

ASSEMBLY INSTRUCTIONS
WORKSHOP GANTRY CRANE



1. Remove the bolts ❷ assembled on the plates of the beam ❶.

2. Lift the beam ❶ using an appropriate means of lifting up to the height of the legs.

3. Regulate one of the vertical legs ❸ by making it coincide with the plates, introduce the screws ❷ + nuts, then block the plates one against the other.

4. Repeat the same operation for the second leg.

Another method consists of mounting the entire beam on the floor with the legs lying on the side and then putting the gantry crane on its wheels.

UPKEEP

No particular upkeep is to be applied to this type of gantry crane. However, it is advisable to:

- periodically grease the pivots of the wheels ;
- ensure every year that all of the screws and bolts are well tightened.

Clamping of the bolts:

Bolts : M 10 : 3.5 daN.m
M 12 : 6 daN.m
M 14 : 9.6 daN.m
M 16 : 14.6 daN.m
M 18 : 20 daN.m.

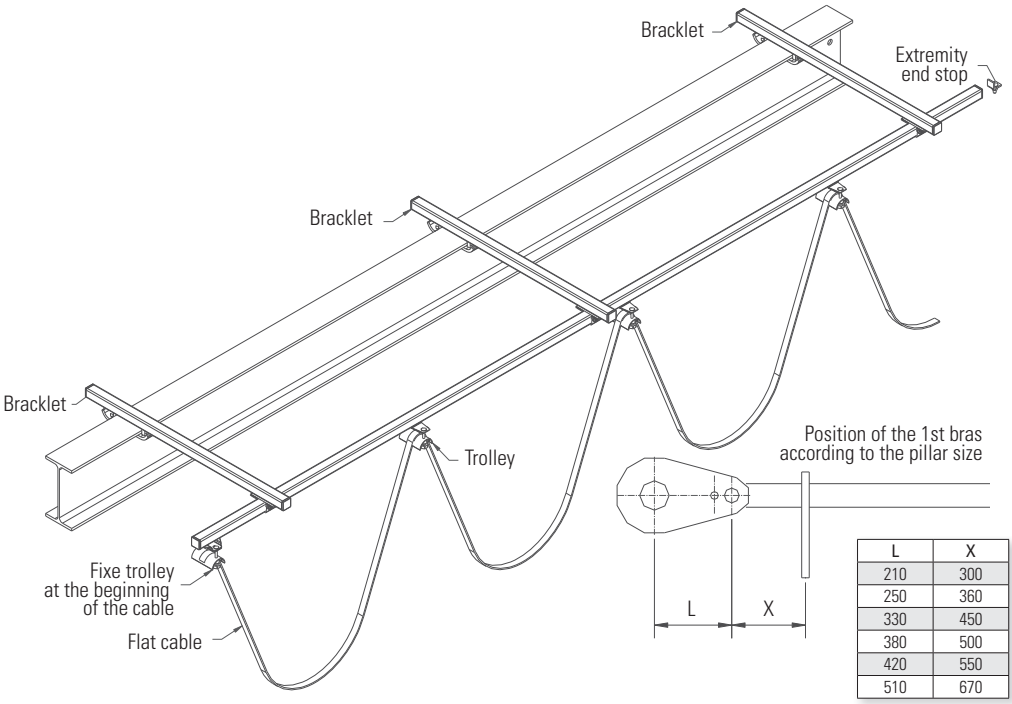
REMINDER

All lifting devices must be received by an authorised organisation before being put into service.
It is formally prohibited to use any lifting device for the purpose of transporting personnel.

USE

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

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.

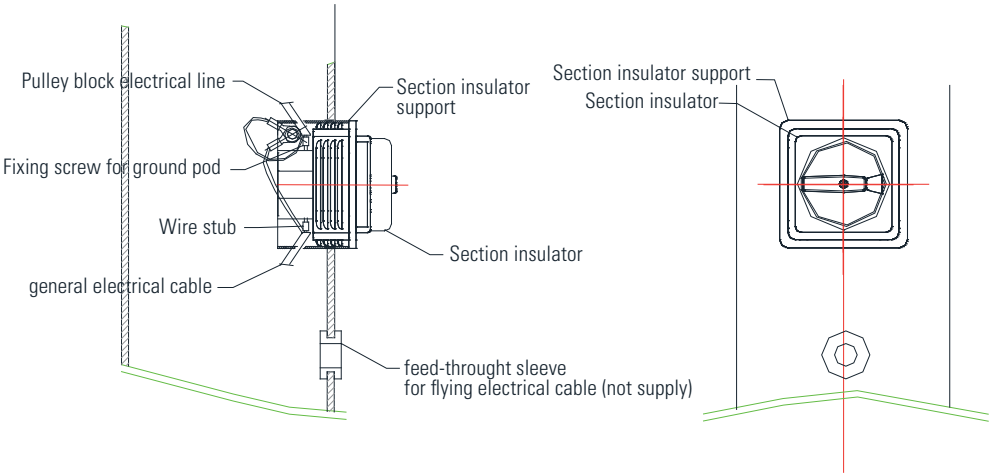
2. Put the next brackets with a maximum distance of 2m between them.

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
POWER SUPPLY LINE



The following is the order of the steps to install the isolating switch

1. Pull the main power supply cable.

2. Insert the main power supply cable into the opening in the isolating switch support, and then crimp the conductor end lugs provided.

3. Connect the three phases of the main power supply cable to terminals T1, T2 & T3.

4. Crimp the earth to one of the round lugs provided.

5. Pull the hoist power supply cable.

6. Insert the hoist power supply cable into the opening of the isolating switch support, and then crimp the conductor end lugs provided.

7. Connect the three phases of the hoist power supply cable to terminals L1, L2 & L3.

8. Crimp the earth to the second round lugs provided.

9. Insert the split head screw into the hole of the isolating switch, position both earthing lugs and lock the assembly with the nut.

10. Position the isolating switch and fasten it on its support using both hexagonal head cap screws and toothed lock washers provided.

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.
Please comply with the instructions given below.

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:

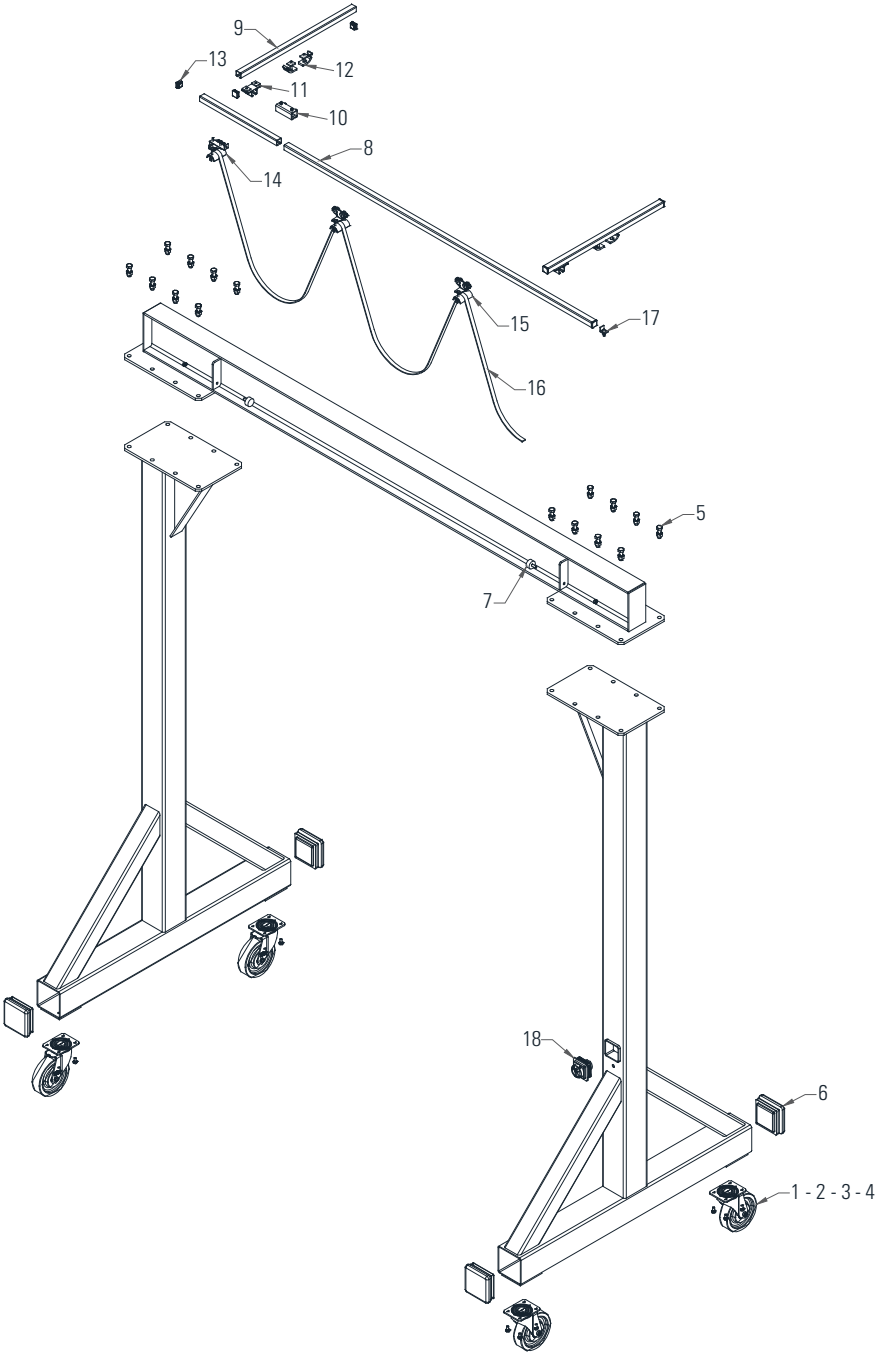
It is reminded that these devices are equipped with **torque limiters** and not **load limiters.**

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.

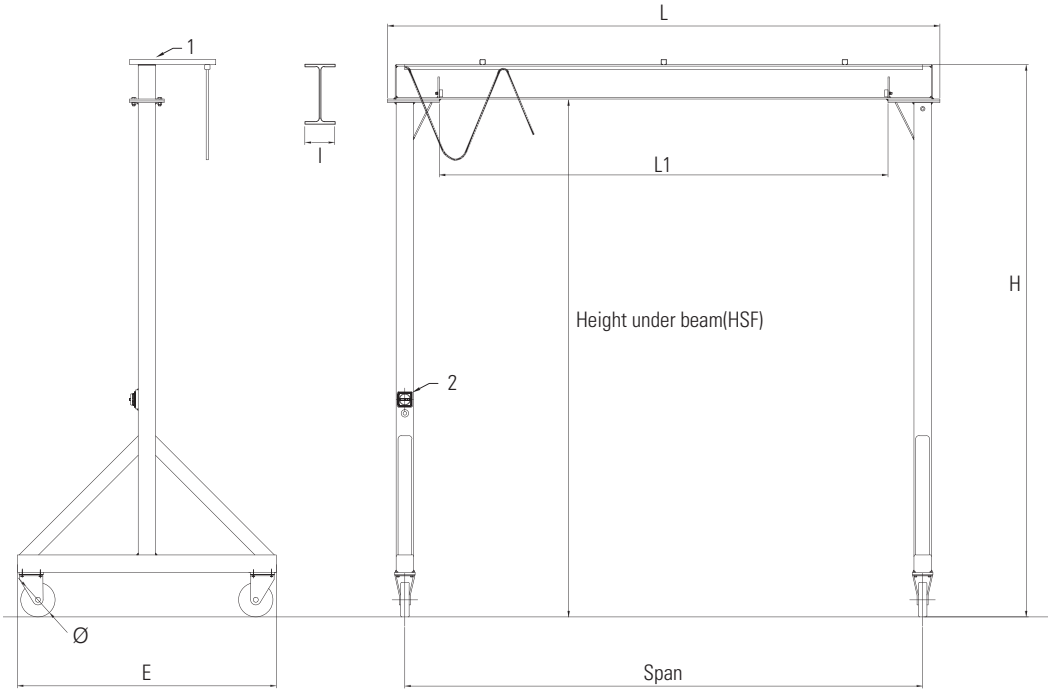
This measure aimed to anticipate wear slip friction system providing torque limit and prevent and to the risk of «*slippage*» of the load.

SPARE PARTS WORKSHOP GANTRY CRANE



Repère	Désignation	Ensemble
1	Polyamyd white wheel	Gantry crane
2	Polyamyd white wheel lock	
3	Wheel with polyurethane tired	
4	Wheel lock with polyurethane tired	
5	Assembly screw of the gantry crane	
6	Rubber bump + bolts	
7	Butée caoutchouc + visserie	
8	Power supply rail	Supply line + lockable main switch
9	Bracket	
10	Junction plate	
11	Junction plate	
12	Clamp	
13	Plastic cap	
14	Fixed cable trolley	
15	Mobile cable trolley	
16	Cable	
17	Power supply and stop	
18	Lockable switch	

SPECIFICATIONS WORKSHOP GANTRY CRANE



1	Add 30 mm for supply cable (option)
2	Lockable main switch (option)

Max capacity	Span	Height under beam (HSF)	H	L	L1	E	Ø	I	Weight
Kg	m	m	mm	mm	mm	mm	mm	mm	Kg
500	2,5	3,00	3 180	2 690	2 090	1 500	150	91	210
	3	3,00	3 180	3 190	2 590	1 500	150	91	220
	3,5	3,00	3 180	3 690	3 090	1 500	150	91	229
	4	3,00	3 180	4 190	3 590	1 500	150	91	239
	4,5	3,00	3 180	4 690	4 090	1 500	150	91	248
	5	3,00	3 180	5 190	4 590	1 500	150	91	257
	2,5	3,50	3 680	2 690	2 090	1 500	150	91	221
	3	3,50	3 680	3 190	2 590	1 500	150	91	231
	3,5	3,50	3 680	3 690	3 090	1 500	150	91	240
	4	3,50	3 680	4 190	3 590	1 500	150	91	249
	4,5	3,50	3 680	4 690	4 090	1 500	150	91	259
	5	3,50	3 680	5 190	4 590	1 500	150	91	268
	2,5	4,00	4 180	2 700	2 100	2 000	150	91	308
	3	4,00	4 180	3 200	2 600	2 000	150	91	318
	3,5	4,00	4 180	3 700	3 100	2 000	150	91	327
	4	4,00	4 180	4 200	3 600	2 000	150	91	336
	4,5	4,00	4 180	4 700	4 100	2 000	150	91	346
	5	4,00	4 180	5 200	4 600	2 000	150	91	355
	2,5	4,50	4 680	2 700	2 100	2 000	150	91	323
	3	4,50	4 680	3 200	2 600	2 000	150	91	332
	3,5	4,50	4 680	3 700	3 100	2 000	150	91	342
	4	4,50	4 680	4 200	3 600	2 000	150	91	351
	4,5	4,50	4 680	4 700	4 100	2 000	150	91	361
	5	4,50	4 680	5 200	4 600	2 000	150	91	370
	2,5	5,00	5 180	2 720	1 920	2 250	150	91	431
	3	5,00	5 180	3 220	2 420	2 250	150	91	440
	3,5	5,00	5 180	3 720	2 920	2 250	150	91	450
	4	5,00	5 180	4 220	3 420	2 250	150	91	459
	4,5	5,00	5 180	4 720	3 920	2 250	150	91	468
	5	5,00	5 180	5 220	4 420	2 250	150	91	478
1 000	2,5	3,00	3 200	2 700	2 100	1 500	200	100	270
	3	3,00	3 200	3 200	2 600	1 500	200	100	281
	3,5	3,00	3 200	3 700	3 100	1 500	200	100	292
	4	3,00	3 200	4 200	3 600	1 500	200	100	303
	4,5	3,00	3 220	4 700	4 100	1 500	200	110	332
	5	3,00	3 220	5 200	4 600	1 500	200	110	345
	2,5	3,50	3 700	2 700	2 100	1 500	200	100	285
	3	3,50	3 700	3 200	2 600	1 500	200	100	296
	3,5	3,50	3 700	3 700	3 100	1 500	200	100	307
	4	3,50	3 700	4 200	3 600	1 500	200	100	318
	4,5	3,50	3 720	4 700	4 100	1 500	200	110	346
	5	3,50	3 720	5 200	4 600	1 500	200	110	360
	2,5	4,00	4 200	2 720	1 920	2 000	200	100	376
	3	4,00	4 200	3 220	2 420	2 000	200	100	387
	3,5	4,00	4 200	3 720	2 920	2 000	200	100	399
	4	4,00	4 200	4 220	3 420	2 000	200	100	410
	4,5	4,00	4 220	4 720	3 920	2 000	200	110	438
	5	4,00	4 220	5 220	4 420	2 000	200	110	451
	2,5	4,50	4 700	2 720	1 920	2 000	200	100	394
	3	4,50	4 700	3 220	2 420	2 000	200	100	405
	3,5	4,50	4 700	3 720	2 920	2 000	200	100	416
	4	4,50	4 700	4 220	3 420	2 000	200	100	428
	4,5	4,50	4 720	4 720	3 920	2 000	200	110	456
	5	4,50	4 720	5 220	4 420	2 000	200	110	469
	2,5	5,00	5 200	2 740	1 740	2 250	200	100	482
	3	5,00	5 200	3 240	2 240	2 250	200	100	493
	3,5	5,00	5 200	3 740	2 740	2 250	200	100	504
	4	5,00	5 200	4 240	3 240	2 250	200	100	515
	4,5	5,00	5 220	4 740	3 740	2 250	200	110	544
	5	5,00	5 220	5 240	4 240	2 250	200	110	557

Max capacity	Span	Height under beam (HSF)	H	L	L1	E	Ø	I	Weight
Kg	m	m	mm	mm	mm	mm	mm	mm	Kg
1 600	2,5	3,00	3 200	2 720	1 920	1 500	200	100	282
	3	3,00	3 200	3 220	2 420	1 500	200	100	294
	3,5	3,00	3 200	3 720	2 920	1 500	200	100	305
	4	3,00	3 200	4 220	3 420	1 500	200	100	316
	4,5	3,00	3 240	4 720	3 920	1 500	200	120	364
	5	3,00	3 240	5 220	4 420	1 500	200	120	380
	2,5	3,50	3 700	2 720	1 920	1 500	200	100	297
	3	3,50	3 700	3 220	2 420	1 500	200	100	308
	3,5	3,50	3 700	3 720	2 920	1 500	200	100	319
	4	3,50	3 700	4 220	3 420	1 500	200	100	331
	4,5	3,50	3 740	4 720	3 920	1 500	200	120	379
	5	3,50	3 740	5 220	4 420	1 500	200	120	395
	2,5	4,00	4 200	2 750	1 750	2 000	200	100	475
	3	4,00	4 200	3 250	2 250	2 000	200	100	486
	3,5	4,00	4 200	3 750	2 750	2 000	200	100	497
	4	4,00	4 200	4 250	3 250	2 000	200	100	508
	4,5	4,00	4 240	4 750	3 750	2 000	200	120	557
	5	4,00	4 240	5 250	4 250	2 000	200	120	531
	2,5	4,50	4 700	2 750	1 750	2 000	200	100	498
	3	4,50	4 700	3 250	2 250	2 000	200	100	509
	3,5	4,50	4 700	3 750	2 750	2 000	200	100	520
	4	4,50	4 700	4 250	3 250	2 000	200	100	531
	4,5	4,50	4 740	4 750	3 750	2 000	200	120	580
	5	4,50	4 740	5 250	4 250	2 000	200	120	595
	2,5	5,00	5 200	2 760	1 760	2 250	200	100	551
	3	5,00	5 200	3 260	2 260	2 250	200	100	562
	3,5	5,00	5 200	3 760	2 760	2 250	200	100	573
	4	5,00	5 200	4 260	3 260	2 250	200	100	585
	4,5	5,00	5 240	4 760	3 760	2 250	200	120	633
	5	5,00	5 240	5 260	4 260	2 250	200	120	649
2 000	2,5	3,00	3 220	2 750	1 750	1 500	200	110	403
	3	3,00	3 220	3 250	2 250	1 500	200	110	416
	3,5	3,00	3 220	3 750	2 750	1 500	200	110	430
	4	3,00	3 240	4 250	3 250	1 500	200	120	461
	4,5	3,00	3 270	4 750	3 750	1 500	200	135	500
	5	3,00	3 270	5 250	4 250	1 500	200	135	518
	2,5	3,50	3 720	2 750	1 750	1 500	200	110	426
	3	3,50	3 720	3 250	2 250	1 500	200	110	439
	3,5	3,50	3 720	3 750	2 750	1 500	200	110	453
	4	3,50	3 740	4 250	3 250	1 500	200	120	484
	4,5	3,50	3 770	4 750	3 750	1 500	200	135	523
	5	3,50	3 770	5 250	4 250	1 500	200	135	541
	2,5	4,00	4 220	2 750	1 750	2 000	200	110	490
	3	4,00	4 220	3 250	2 250	2 000	200	110	503
	3,5	4,00	4 220	3 750	2 750	2 000	200	110	517
	4	4,00	4 240	4 250	3 250	2 000	200	120	548
	4,5	4,00	4 270	4 750	3 750	2 000	200	135	587
	5	4,00	4 270	5 250	4 250	2 000	200	135	605
	2,5	4,50	4 720	2 760	1 760	2 000	200	110	538
	3	4,50	4 720	3 260	2 260	2 000	200	110	551
	3,5	4,50	4 720	3 760	2 760	2 000	200	110	564
	4	4,50	4 740	4 260	3 260	2 000	200	120	595
	4,5	4,50	4 770	4 760	3 760	2 000	200	135	634
	5	4,50	4 770	5 260	4 260	2 000	200	135	653
	2,5	5,00	5 220	2 780	1 780	2 250	200	110	605
	3	5,00	5 220	3 280	2 280	2 250	200	110	618
	3,5	5,00	5 220	3 780	2 780	2 250	200	110	631
	4	5,00	5 240	4 280	3 280	2 250	200	120	662
	4,5	5,00	5 270	4 780	3 780	2 250	200	135	702
	5	5,00	5 270	5 280	4 280	2 250	200	135	720

Max capacity	Span	Height under beam (HSF)	H	L	L1	E	Ø	I	Weight
Kg	m	m	mm	mm	mm	mm	mm	mm	Kg
3 200	2,5	3,00	3 300	2 780	1 780	1 500	250	150	428
	3	3,00	3 300	3 280	2 280	1 500	250	150	449
	3,5	3,00	3 300	3 780	2 780	1 500	250	150	471
	4	3,00	3 300	4 280	3 280	1 500	250	150	492
	4,5	3,00	3 300	4 780	3 780	1 500	250	150	513
	5	3,00	3 300	5 280	4 280	1 500	250	150	534
	2,5	3,50	3 800	2 780	1 780	1 500	250	150	455
	3	3,50	3 800	3 280	2 280	1 500	250	150	476
	3,5	3,50	3 800	3 780	2 780	1 500	250	150	498
	4	3,50	3 800	4 280	3 280	1 500	250	150	519
	4,5	3,50	3 800	4 780	3 780	1 500	250	150	540
	5	3,50	3 800	5 280	4 280	1 500	250	150	561
	2,5	4,00	4 300	2 800	1 800	2 000	250	150	529
	3	4,00	4 300	3 300	2 300	2 000	250	150	550
	3,5	4,00	4 300	3 800	2 800	2 000	250	150	571
	4	4,00	4 300	4 300	3 300	2 000	250	150	592
	4,5	4,00	4 300	4 800	3 800	2 000	250	150	613
	5	4,00	4 300	5 300	4 300	2 000	250	150	634
	2,5	4,50	4 800	2 800	1 800	2 000	250	150	559
	3	4,50	4 800	3 300	2 300	2 000	250	150	580
	3,5	4,50	4 800	3 800	2 800	2 000	250	150	601
	4	4,50	4 800	4 300	3 300	2 000	250	150	622
	4,5	4,50	4 800	4 800	3 800	2 000	250	150	643
	5	4,50	4 800	5 300	4 300	2 000	250	150	664
	2,5	5,00	5 300	2 850	1 450	2 250	250	150	781
	3	5,00	5 300	3 350	1 950	2 250	250	150	802
	3,5	5,00	5 300	3 850	2 450	2 250	250	150	823
	4	5,00	5 300	4 350	2 950	2 250	250	150	844
	4,5	5,00	5 300	4 850	3 450	2 250	250	150	865
	5	5,00	5 300	5 350	3 950	2 250	250	150	886
5 000	2,5	3,00	3 360	2 800	1 800	1 500	300	170	613
	3	3,00	3 360	3 300	2 300	1 500	300	170	641
	3,5	3,00	3 360	3 800	2 800	1 500	300	170	670
	4	3,00	3 360	4 300	3 300	1 500	300	170	698
	4,5	3,00	3 360	4 800	3 800	1 500	300	170	727
	5	3,00	3 360	5 300	4 300	1 500	300	170	756
	2,5	3,50	3 860	2 800	1 800	1 500	300	170	643
	3	3,50	3 860	3 300	2 300	1 500	300	170	671
	3,5	3,50	3 860	3 800	2 800	1 500	300	170	700
	4	3,50	3 860	4 300	3 300	1 500	300	170	728
	4,5	3,50	3 860	4 800	3 800	1 500	300	170	757
	5	3,50	3 860	5 300	4 300	1 500	300	170	786
	2,5	4,00	4 360	2 850	1 450	2 000	300	170	926
	3	4,00	4 360	3 350	1 950	2 000	300	170	955
	3,5	4,00	4 360	3 850	2 450	2 000	300	170	983
	4	4,00	4 360	4 350	2 950	2 000	300	170	1 012
	4,5	4,00	4 360	4 850	3 450	2 000	300	170	1 041
	5	4,00	4 360	5 350	3 950	2 000	300	170	1 069
	2,5	4,50	4 860	2 850	1 450	2 000	300	170	964
	3	4,50	4 860	3 350	1 950	2 000	300	170	993
	3,5	4,50	4 860	3 850	2 450	2 000	300	170	1 021
	4	4,50	4 860	4 350	2 950	2 000	300	170	1 050
	4,5	4,50	4 860	4 850	3 450	2 000	300	170	1 079
	5	4,50	4 860	5 350	3 950	2 000	300	170	1 107
	2,5	5,00	5 360	2 900	1 500	2 500	300	170	1 300
	3	5,00	5 360	3 400	2 000	2 500	300	170	1 328
	3,5	5,00	5 360	3 900	2 500	2 500	300	170	1 357
	4	5,00	5 360	4 400	3 000	2 500	300	170	1 385
	4,5	5,00	5 360	4 700	3 500	2 500	300	170	1 414
	5	5,00	5 360	5 400	4 000	2 500	300	170	1 443


1000 KG