

# MICRO - MINI - MAXI INTERLOCKING SHELVING SYSTEM

installation, use and maintenance instructions



Made entirely of 3.1 certified steel sheet, cold-profiled with galvanized steel according to SENDZIMIR process. The main characteristic is to be fully interlocking. The machinery and high-technology automatic equipment used were designed to enable the manufacture of a product that has the highest reliability, minimizing the use of raw material. The elements of the three versions are compatible with each other and can be easily combined, allowing convenient changes and extensions of the systems. The structures have been approved by TUV-GS to guarantee quality and safety.

The reference standards of the theoretical calculation are:  
C.N.R.UNI 10011 - C.N.R.UNI 10022.

The reference standards for materials are:  
UNI EN 10149 - UNI EN 10204 - UNI EN 10346.

## RISKS ASSOCIATED WITH THE INSTALLATION OF THE SYSTEM

**BEFORE ASSEMBLING** the system, check the floors and floor slabs to make sure they are in good condition, without holes and accentuated unevenness and that they have an appropriate consistency for the capacity of the shelves. If the installation is to be carried out on a mezzanine floor it is essential to consult a specialist in order to assess the floor resistance and capacity.

**UNLOADING AND STORAGE OF MATERIALS.** Must be carried out at a predefined location, away from the risks arising from any everyday work and contemporary installation of other systems (electricity, water, air conditioning, etc.). The staff must be informed about the interim storage program, the approach of the material to the area of installation and realization of the system itself.

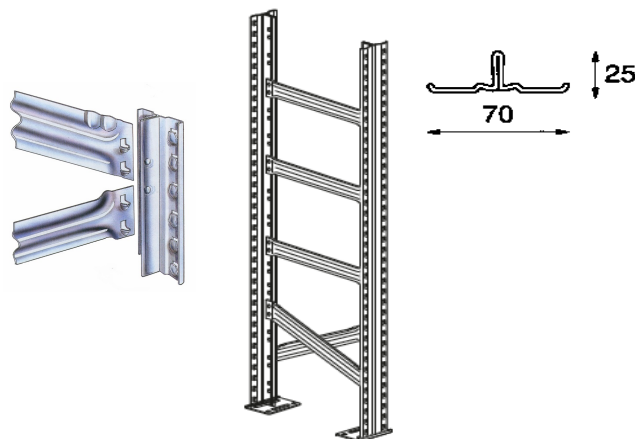
**ASSEMBLY AND INSTALLATION OF THE SYSTEM.** The staff responsible for this installation must be equipped with protective gloves and, if using electric screwdrivers, ear plugs or headphones. During the dowels anchoring to the floor, all personnel will be equipped with face masks with filter. The personnel managers must coordinate all phases of movement and installation and ensure that all applicable standards regarding the health and safety of workers are applied.

## BEFORE BEGINNING THE ASSEMBLY READ CAREFULLY THE CHAPTER "USE AND MAINTENANCE STANDARDS"

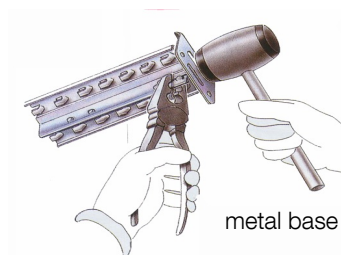
### MOUNTING SEQUENCE

**1 SIDES.** Position the 2 uprights with flaps upward, insert the metal bases, and with a pair of pliers, tighten the tabs that must fit in the special seats, with the aid of a hammer.

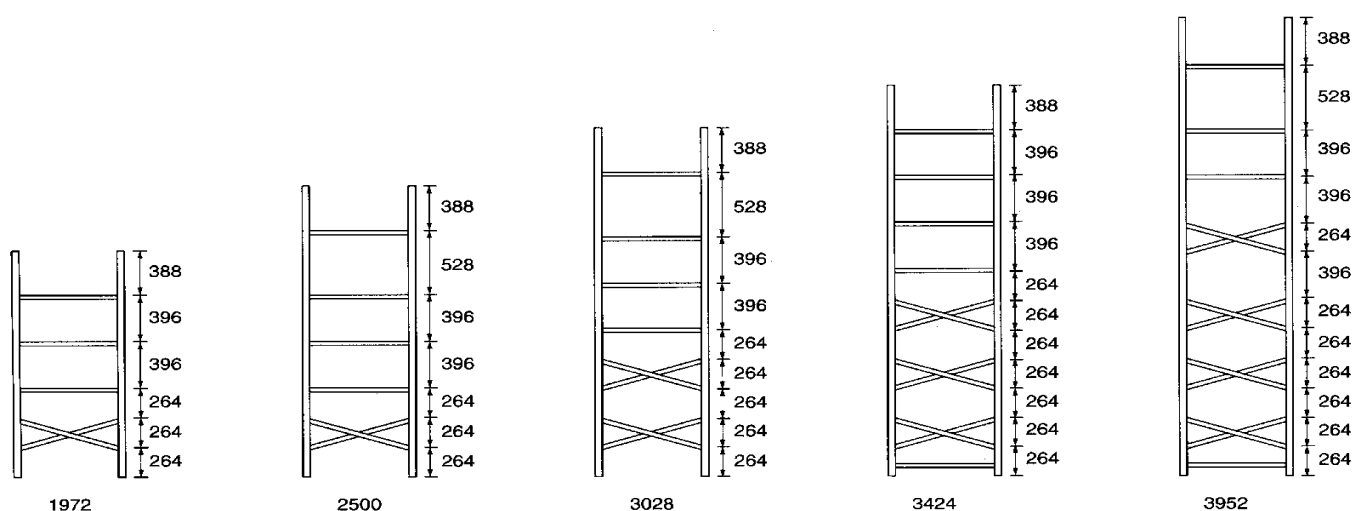
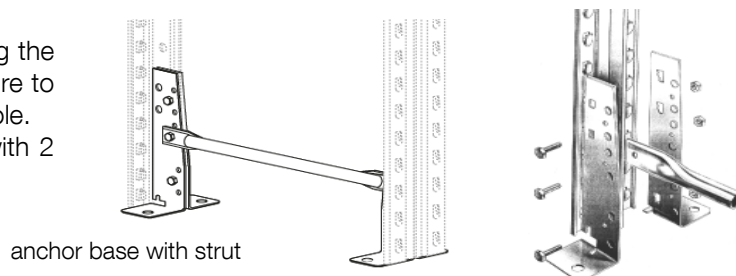
- To obtain the side it is necessary to insert the diagonals and cross bars from the bottom upwards; the diagonals (from just 1 side) and the cross bars are mounted at the intervals indicated in the graph, then the side is turned and the missing diagonals are inserted, being careful to **introduce them diagonally until touching the edge** to facilitate the insertion.



- To lock the cross bars and diagonals you must make them adhere to the uprights and hit them with the tip of the iron hammer alternately in the right and then left side, until activating the anti-release system.



**ANCHOR BASES** They are mounted after assembling the side, each with 3 screws TE 6x20 and nut, making sure to externally add the shock resistant strut in the centre hole. After aligning the shelf as in step "11", floor mount with 2 anchors each side.



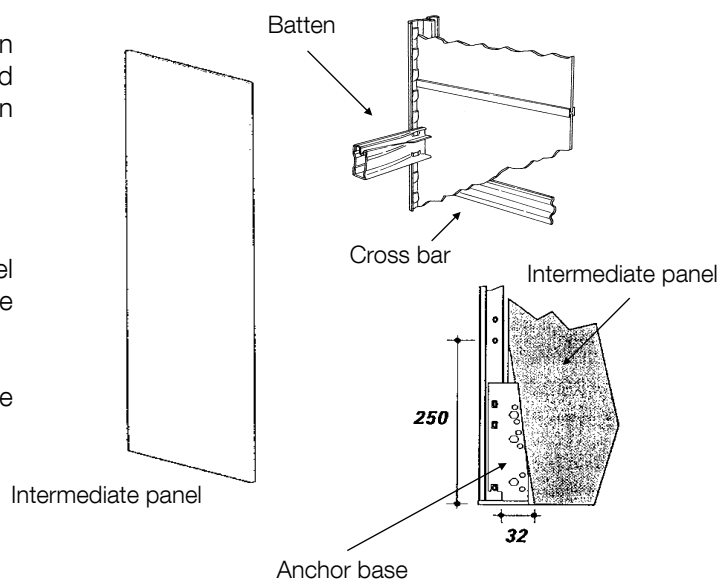
#### ASSEMBLY DIAGRAM FOR CROSS BARS AND DIAGONALS

## 2

**SIDES WITH INTERMEDIATE PANELS.** Proceed as in step "1" and insert the panel between the uprights and the battens before starting the operations described in step "4" (shelves mounting).

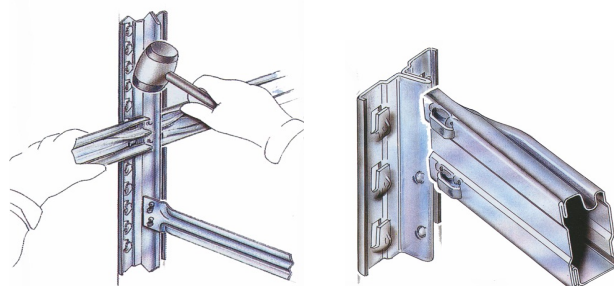
The panel can be locked with 1 self-drilling screw to the upright.

- In case of **heights greater than 2500 mm** the panel is divided into 2 pieces with a "H" PVC profile for the overlap.
- If there are **anchor bases**, you must provide for the trimming of the panels during mounting.



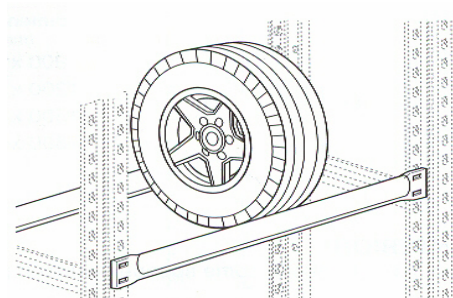
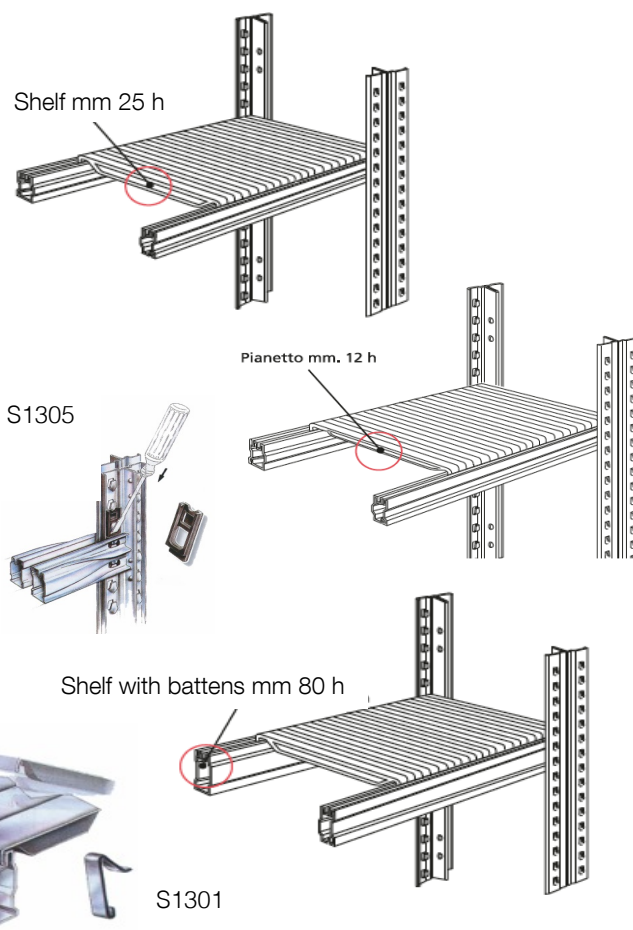
### 3 GROUND TRACKING of the dimensions of the system on the pavement.

In order to determine the minimum passages, it is necessary to take account of the width necessary for operation, the spaces for pedestrian transit and emergency routes.



### 4 SHELVES Verticalize the 1st and the 2nd side, starting the mounting of the battens, **starting from the bottom upwards** continuing until the completion of the span.

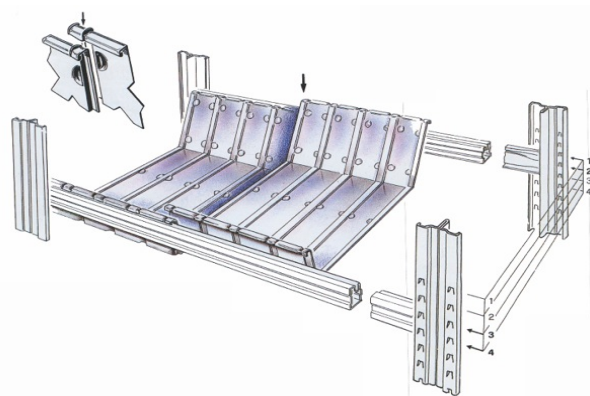
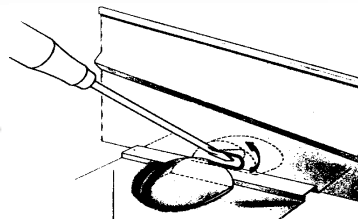
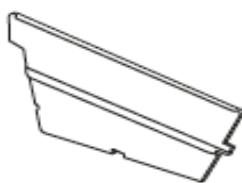
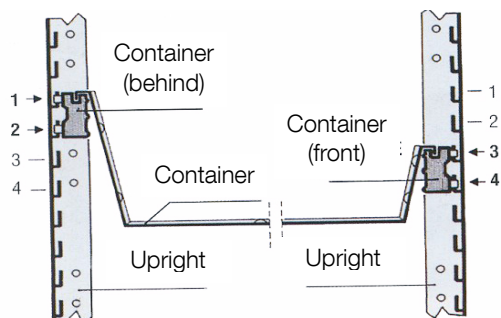
- Snap in the battens, hammering close to the uprights with a hard rubber mallet.
- Arrange the shelves in their seats.
- Insert the safety hook S1305 with the latch facing the outside of the side. It must snap in below the cut of the upper slot.
- In the case of shelves at the upper level and tubes for uprights **(which are mounted only on the maxi sides)** the safety hooks S1301 must be used, which must be attached to the hollow parts of the batten before inserting the shelf.



## 5 TRAPEZOIDAL TRAYS. Enter the battens as indicated in step "4", placing the rear one with two slots higher than the front one.

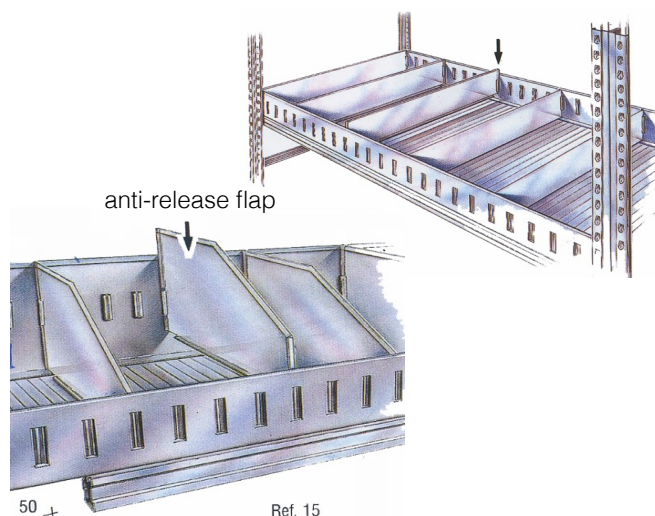
Arrange the trays, moving from left to right and engage the ends on top one another.

Insert the dividers pressing downwards from above and, with the help of a screwdriver, push the anti-release flap inside the indentation of the tray.



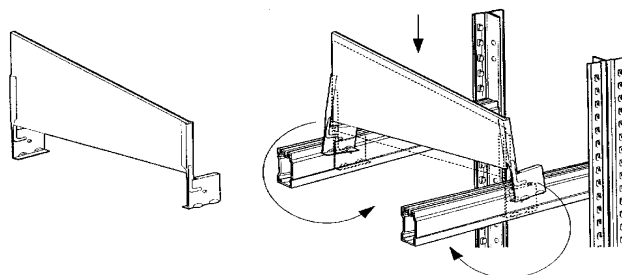
## 6 MODULAR TRAYS Place the front and rear edges against the uprights using the previously mounted shelves as a base; fit the lateral dividers in the last slot, making sure to press the edges outwards for correct insertion; complete with central dividers.

**They are not fitted with rear panels.**



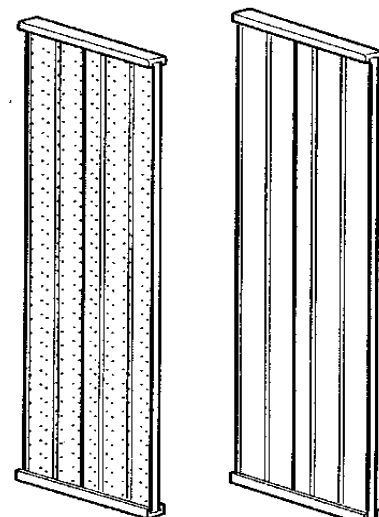
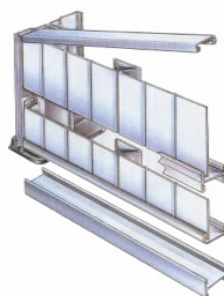
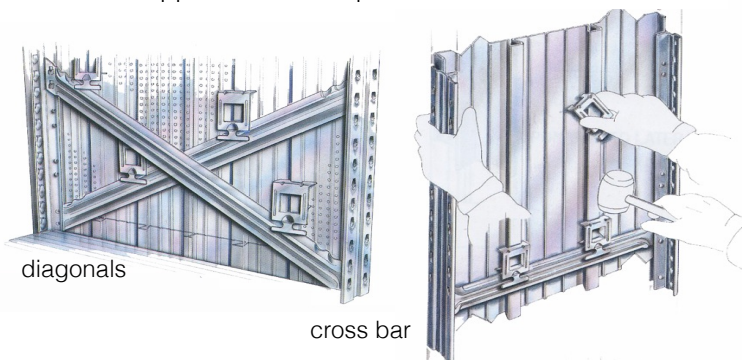
## 7 SLIDING SEPARATORS. Insert the separator into the two supports (left and right) from the top downwards; outwardly, slightly widen the lower ends of the supports and attach them to battens, pressing sideways.

**They are not fitted with rear edges.**



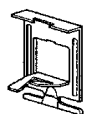


- 8 SIDE PANELS.** They are to be mounted on the completed shelf, inside the uprights, using the lower closure "U" profile. Each panel is fixed with 4 hooks S3070 for heights up to 2500 mm and 6 hooks for greater heights. Widen the upper and lower flaps of the hooks, rotate them, insert them in the ribs of the panels and straighten them, then tighten the flaps and snap them into place on the cross bars and diagonals. Insert the upper closure "U" profile.

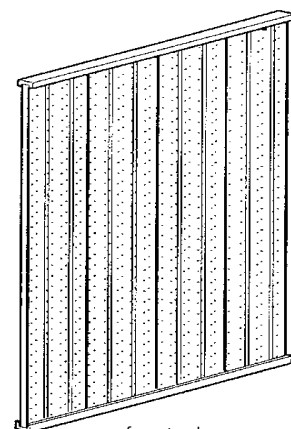
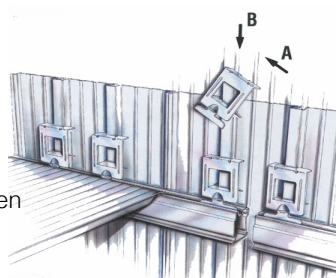


perforated and  
smooth side panel

- 9 REAR PANELS.** Proceed as in step "8", fitting the hooks S3075 on the battens.

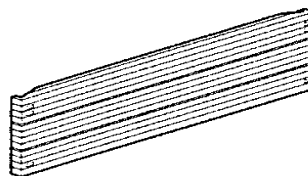


batten

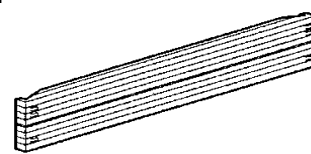


perforated rear panel

- 10 STIFFENING BANDS AND FRONT BASES.** These are snap-fitted on the uprights and can also be used as rear edges for shelves.



band

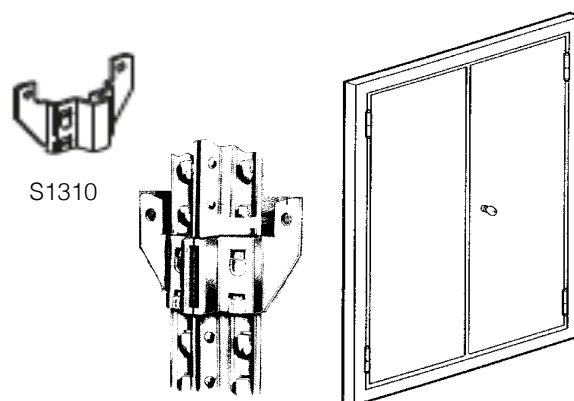


base

- 11 ALIGN** the structure in length, depth and height, shimming the sides if necessary. Consider a maximum tolerance of  $\pm 5$  mm. in height and  $\pm 15$  mm per row of shelves.

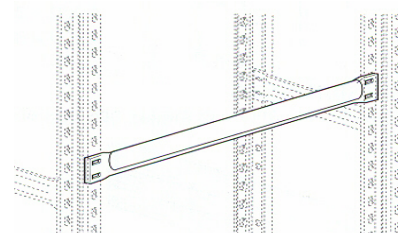
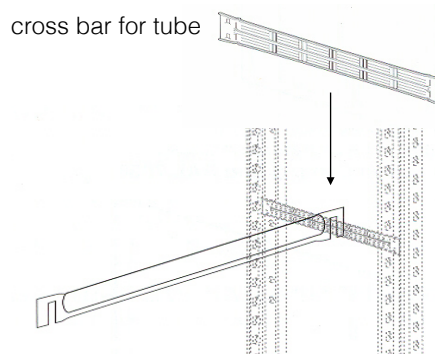
- 12 DOORS.** Attach the 4 brackets S1310 to the uprights, locking with 2 hooks S1301. Place the frame with the welded plates on the brackets and secure with 4 flanged screws TE 6x16, nuts of 6 and washers 6x12.

**In case of consecutive doors,** the S1310 brackets should be split centrally, so as to be able to align and shim the shelf properly.



### 13 HANGER HOLDER TUBES

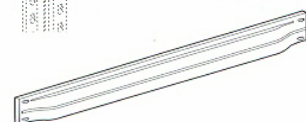
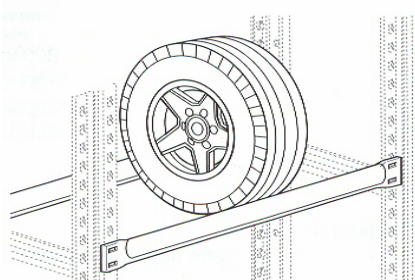
- **Tubes for cross bars.** Mount the cross bar on the side and snap in the tube, which can be a single central or double lateral one. In case of consecutive spans there will always be 1 single cross bar for tubes in the centre. **For the use of the hanger holder tube the structure must be stiffened by at least 3 pairs of battens.**
- **Tubes for uprights.** They are attached with 2 hooks S1301. **They are used only on the maxi sides.**



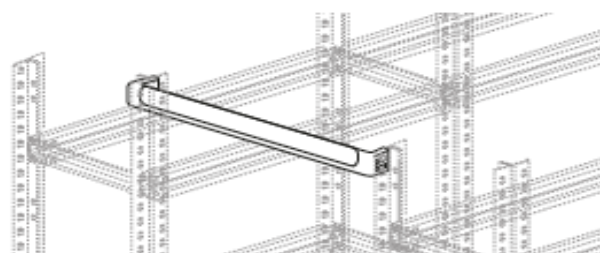
- 14 TYRE HOLDERS.** They are used only on sides 320 mm and 400 deep and with a maximum length of 1200 mm.

- the oval tubes are attached to the upright with 2 hooks S1301
- the maxi battens with 2 hooks S1305.

**Use maxi sides only.**

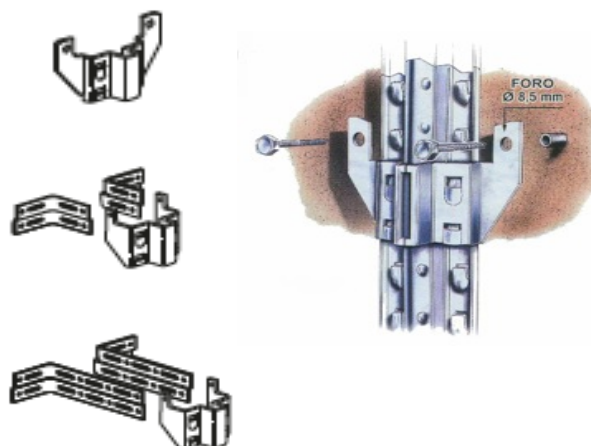


- 15 SPACERS.** They are used for the connections between the rows of shelves or at the top and are attached with 2 safety hooks art.S1301.



## 16 WALL MOUNT BRACKETS.

- **Net span 0.** It fits directly on the upright and is fixed to the wall with suitable anchors.
- **Net span 70.** The angular elements (right and left) are attached to the bracket with 2 screws TCEI 8x20 with nut; the bracket fits on the upright then attach it to the wall with suitable plugs.
- **Net span 200.** The angular elements (right and left) are attached to the bracket with 6 screws TCEI 8x20 with nut; the bracket fits on the upright and is attached to the wall with suitable plugs.  
**We recommend using 2 brackets for each end side and 1 for the central ones.**



## 17 HOOK FOR CONNECTING DOUBLE-SIDED SHELVES.

At least 2 required for each side.

After snapping it into the upright it is necessary to bend the flaps.



- ## 18 PLAQUES.
- For each row of shelves, a plaque indicating the maximum capacities of the sides and shelves must be placed in a visible position.

SCAFFALATURA A PIANI	
PORTATA FIANCATA	kg.
PORTATA MONTANTE	kg.
ALTEZZA DEL 1° PIANO DA TERRA	mm
DISTANZA TRA I PIANI	mm
PIANI IN ALTEZZA	N°
PORTATA PER PIANO CON CARICO UNIFORMEMENTE DISTRIBUITO	
ART. _____ DA mm _____	=kg. _____
ART. _____ DA mm _____	=kg. _____
LA SOMMA DELLA PORTATA DEI PIANI DEVE ESSERE PARI O INFERIORE ALLA PORTATA DELLA FIANCATA MONTANTE	
PORTATA DEL PIANO DI CALPESTIO	kg. _____ M²
ANNO DI COSTRUZIONE _____	
<small>La targhetta dovrà essere compilata dal Responsabile della sicurezza dell'attività Utilizzatore, sulla base delle specifiche tecniche contenute nei manuali di uso e manutenzione. In caso di modifiche apportate alla configurazione originale il Responsabile dovrà apporre gli aggiornamenti necessari.</small>	

plaque

## CAPACITIES AND DIMENSIONS

### CAUTION:

THE CAPACITIES OF THE SIDES ARE VALID FOR SHELVES WITH MINIMUM 4 CONSECUTIVE SPANS WITH THE 1ST

### SHELF DIMENSIONS

Add the nominal length of the shelves increased by 6 mm each span.

Add 100 mm to the total to get the final dimensions including bases.

#### MICRO SIDES

Nominal capacity Kg. 1500

**MICRO SHELVES shelves 600/900**

ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S1090	900x320	280
S1095	900x400	235
S1100	900x500	185
S1105	900x600	150
S1120	1200x320	205
S1125	1200x400	205
S1130	1200x500	205
S1135	1200x600	205
S1150	1500x320	145
S1155	1500x400	145
S1160	1500x500	145
S1165	1500x600	145

#### MINI SIDES

Nominal capacity Kg. 2000

**MINI SHELVES shelves 600/900**

ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S1535	900x320	305
S1540	900x400	235
S1545	900x500	185
S1550	900x600	150
S1555	900x700	130
S1565	1200x320	275
S1570	1200x400	275
S1575	1200x500	260
S1580	1200x600	210
S1585	1200x700	180
S1595	1500x320	175
S1600	1500x400	175
S1605	1500x500	175
S1610	1500x600	175
S1615	1500x700	175

#### MAXI SIDES

Nominal capacity Kg. 3600

**MAXI SHELVES shelves 600/900**

ART.	DIMENSIONI (mm)	CAPACITY (Kg)
S2410	900x320	305
S2415	900x400	235
S2420	900x500	185
S2425	900x600	150
S2430	900x700	130
S2440	1200x320	320
S2445	1200x400	320
S2450	1200x500	260
S2455	1200x600	210
S2460	1200x700	180
S2470	1500x320	205
S2475	1500x400	205
S2480	1500x500	205
S2485	1500x600	205
S2490	1500x700	205
S2500	1800x320	140
S2505	1800x400	140
S2510	1800x500	140
S2515	1800x600	140
S2520	1800x700	140

**MINI SHELVES shelves 300**

ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S1655	900x400	390
S1660	900x500	390
S1665	900x600	345
S1670	900x700	330
S1675	900x800	260
S1690	1200x400	275
S1695	1200x500	275
S1700	1200x600	275
S1705	1200x700	275
S1710	1200x800	250
S1725	1500x400	175
S1730	1500x500	175
S1735	1500x600	175
S1740	1500x700	175
S1745	1500x800	160

**MAXI SHELVES shelves 300**

ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S2560	900x400	450
S2565	900x500	420
S2570	900x600	345
S2575	900x700	330
S2580	900x800	260
S2595	1200x400	320
S2600	1200x500	320
S2605	1200x600	320
S2610	1200x700	320
S2615	1200x800	290
S2630	1500x400	205
S2635	1500x500	205
S2640	1500x600	205
S2645	1500x700	205
S2650	1500x800	180
S2665	1800x400	140
S2670	1800x500	140
S2675	1800x600	140
S2680	1800x700	140

**MAXI SHELVES H80 shelves 300**

ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S2765	1500x500	640
S2770	1500x600	640
S2775	1500x700	550
S2780	1500x800	475
S2795	1800x500	530
S2800	1800x600	530
S2805	1800x700	530

**SIDES WITH HEIGHT GREATER THAN 3028 MM MUST HAVE THE 1ST SHELF AT A MAXIMUM HEIGHT OF 200 MM FROM THE GROUND AND THE NEXT ONES AT 300 MM BETWEEN THEM.**



**LEVEL AT 700 mm FROM THE GROUND and THE REMAINING ONES AT A CONSTANT MAXIMUM OF 500 MM BETWEEN THEM UP TO MAX. OF 3000 MM H**

MICRO TRAYS		
ART.	DIMENSIONS (mm)	CAPACITY (Kg.)
S1180	900x320	270
S1185	900x400	270
S1190	900x500	210
S1195	900x600	195
S1210	1200x320	205
S1215	1200x400	205
S1220	1200x500	205
S1225	1200x600	205

MINI TRAYS		
ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S1915	900x320	270
S1920	900x400	270
S1925	900x500	210
S1930	900x600	195
S1935	900x700	180
S1940	900x800	180
S1945	1200x320	275
S1950	1200x400	275
S1955	1200x500	275
S1960	1200x600	260
S1965	1200x700	240
S1970	1200x800	240
S1975	1500x320	175
S1980	1500x400	175
S1985	1500x500	175
S1990	1500x600	175
S1995	1500x700	175
S2000	1500x800	175

MAXI TRAYS		
ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S2855	900x320	270
S2860	900x400	270
S2865	900x500	210
S2870	900x600	195
S2875	900x700	180
S2880	900x800	180
S2885	1200x320	320
S2890	1200x400	320
S2895	1200x500	280
S2900	1200x600	260
S2905	1200x700	240
S2910	1200x800	240
S2915	1500x320	205
S2920	1500x400	205
S2925	1500x500	205
S2930	1500x600	205
S2935	1500x700	205
S2940	1500x800	205
S2945	1800x320	140
S2950	1800x400	140
S2955	1800x500	140
S2960	1800x600	140
S2965	1800x700	140

**Note: the hanger holder tube must not exceed the capacity of the cross bars.**

HANGER HOLDER TUBES FOR CROSS BAR		
ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S3770	900	195
S3775	1200	98
S3780	1500	86
S3785	1800	50

CROSS BARS FOR TUBES		
ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S3795	400	120
S3800	500	120
S3805	600	120
S3810	700	100
S3815	800	90

HANGER HOLDER TUBES FOR UP.		
ART.	DIMENSIONS (mm)	CAPACITY (Kg)
S3830	900	295
S3835	1200	200
S3840	1500	130
S3845	1800	90

TYRE HOLDER TUBES		
ART.	DIMENSIONS (mm)	PAIR CAPACITY (Kg)
S3830	900	87
S3835	1200	49

TYRE HOLDER BATTENS		
ART.	DIMENSIONS (mm)	PAIR CAPACITY (Kg)
S2411	900	160
S2441	1200	108

**FOR SHELF DISTANCES BETWEEN 300 MM AND 700 MM THERE WILL BE A REDUCTION OF UP TO 50% OF THE NOMINAL CAPACITY OF THE SIDES.**

## USE AND MAINTENANCE STANDARDS

- Composition of spans.** For sides with height up to 3028 mm the 1st shelf must be placed at a maximum height of 700 mm from the ground and the next ones at a regular distance of 500 mm between them for a minimum of 4 consecutive spans. **The sides with height greater than 3028 mm** must have the 1st shelf at a maximum height of 200 mm from the ground and the others at a regular distance of 300 mm between them; **for shelf distances between 300 mm and 700 mm you will have a reduction of up to 50% of the nominal capacity of the sides.**  
**If the number of shelves is less than specified, and the number of spans less than 4,** it is necessary to provide for the stiffening of the structure with side and rear wall constraints, or with connections with the top between 2 rows of shelves or with floor mountings of the sides to minimize the risk of sliding or collapse of the shelf.  
**If wall mounting should become necessary,** verify the consistency of the walls that should be suitable to ensure the necessary resistance to the stresses due to normal use and accidental impacts.  
**Shelves with height greater than 5 times the depth, in the absence of wall mounting or connection in the top between 2 or more shelves, must be floor mounted** (in the case of double-sided shelves the overall depth of the 2 shelves is considered).
- Safety.** The safety hooks must always be inserted into the shelves.  
 In declared **seismic** zones any kind of wall mounting is forbidden.  
**The structures are intended for operations carried out manually, not with forklifts or pallet trucks.**
- Capacities.** For each row of shelves, a plaque indicating the maximum capacities of the sides and shelves must be placed in a visible position. The capacities indicated are always for **uniformly distributed loads** on the shelf, installed according to our instructions and used correctly.  
**Avoid dimensioning the structures at the limits of capacities.**
- In case of **damage to the structures** you must immediately unload the system and replace the parts that are damaged or deformed. Carefully check that the geometry of the shelf has not been changed. In case of frequent accidents it is necessary to have adequate safety measures.
- The warehouse manager and operators must be provided with all the information** about the technical specifications of the system and the rules for its correct use.
- The user, as required by Law, must verify the suitability and efficiency of the structures,** planning a series of tests and inspections and preparing a specific report.
- Every 12 months check the tightness of the anchors** and the fixing systems..
- Every 2 years, check the verticality of the structures** longitudinally and transversally. In case of deviations, use shims to restore the geometry of the shelves.
- The galvanizing of all components must be checked** every 5 years for indoor normal environments and every year for environments subject to corrosion (close to the sea, chemical fumes etc.). If any items are damaged by corrosion they will be replaced.
- It is forbidden to modify** the components of the structures by performing welding or preparing equipment of any kind.

**Failure to follow the "installation, use and maintenance instructions" releases the supplier from any liability and damages to persons or property.**