

M²DERN EXPO

SHELVING SYSTEM «FS»

PASSPORT

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1. GENERAL INFORMATION AND PURPOSE OF EQUIPMENT

- 1.1. This Technical Passport applies to all shelving of the FS system (hereinafter — shelving).
- 1.2. The Technical Passport contains a description of the shelving, the principle of use, specifications and other information required for installation and proper operation.
- 1.3. The manufacturer JV “Modern-Expo” constantly improves their products and therefore reserves the right to make structural changes with the preservation of technical specifications.
- 1.4. Shelving of the FS system with middle back panel are designed for displaying, storing and selling of goods on shelves.
- 1.5. It is possible to expand the scope of use of the shelving, but this may require changes to the design or additional elements, and is permissible only after approval by the manufacturer for each individual non-standard case.

2. DECLARATION OF CONFORMITY

All shelvings are manufactured under conditions of controlled quality management system certified according to ISO 9001:2015, which ensures stable quality and guarantees the safety of further use.

The production is carried out on modern high-tech equipment, all products and conditions of its production are certified according to Ukrainian and international standards of safety and quality.

3. SPECIFICATIONS

- 3.1. Shelving is a demountable structure, assembled from individual elements.
- The upright is perforated in increments of 25.4 mm and has a demountable structure with a base foot.
- The number of crossbars for uprights is:
- $H \leq 2100$ mm — 2 pcs.;
 - $H \geq 2200$ mm — 3 pcs.

Height of the upright

Table 3.1

Cross section of the upright, mm	Height of the upright, mm								
80x30	1320	1473	1625	1778	1930	2082	2235	2387	2540
100x30	1320	1473	1625	1778	1930	2082	2235	2387	2540

Depths of the shelving elements

Table 3.1

Name of the element	Depths of elements, mm					
Reinforced shelf	200	300	400	500	600	700
Bracket	200	300	400	500	600	700
Base foot	200	300	400	500	600	700

Length of sections with shelves, middle back panels and plinth — 665, 1000, 1250 and 1330 mm.

Universal brackets FS KRU are installed at an angle of 0°, 15° horizontally.

Base foot FS PN 01 80 has height — 128 mm, FS PN 01 100 — 148 mm.

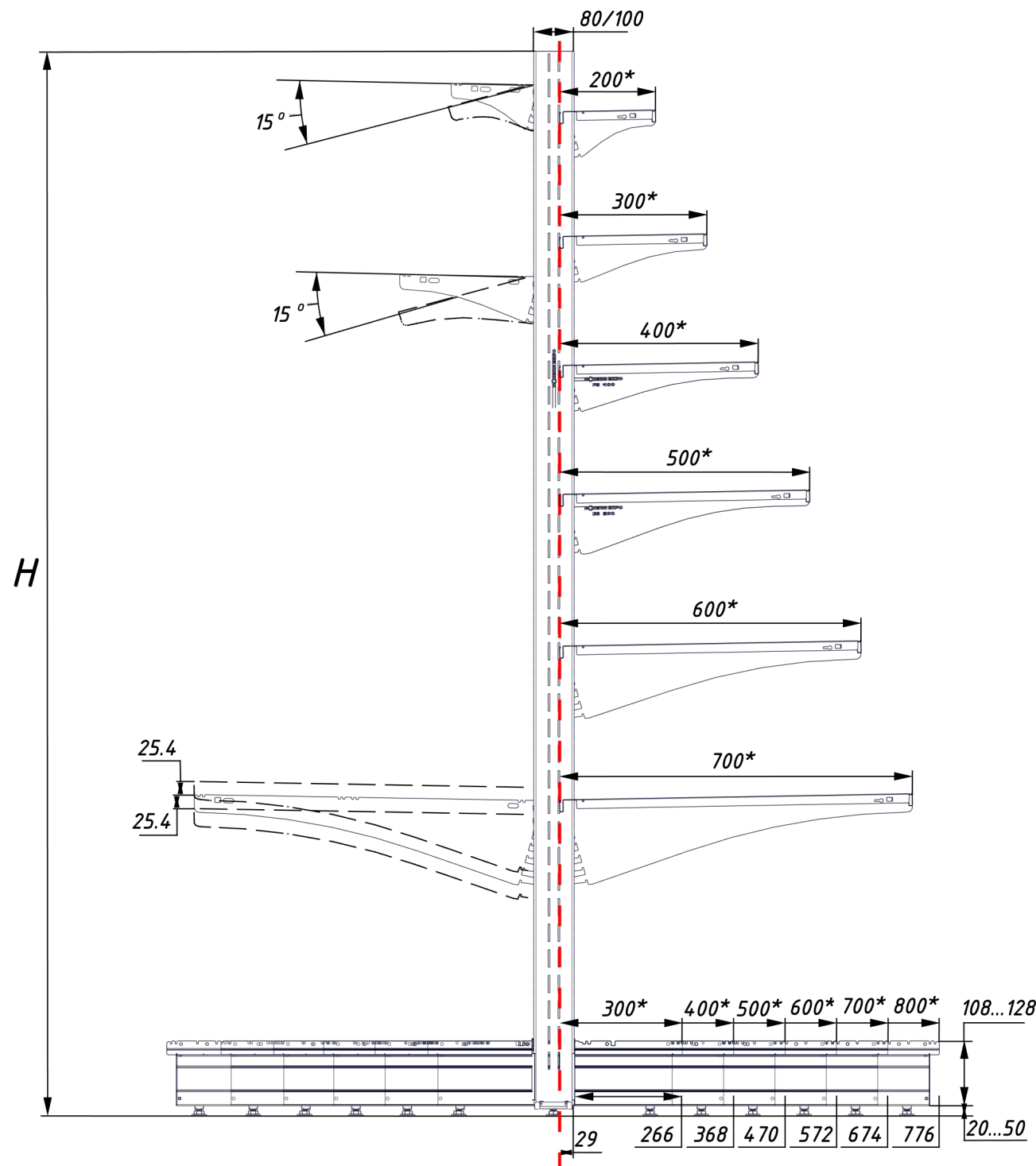
Number of shelf reinforcements in standard version

Table 3.3

Shelf depth, mm Shelf length, mm	200	300	400	500	600	700
665	1	1	2	2	3	4
1000	1	1	2	2	3	4
1250	1	1	2	2	3	4
1330	1	1	2	2	3	4

3.2. Dimensional line of the system FS

Pic. 3.1



! * All dimensions are stated in millimeters and are conditional

3.3. Materials and thickness of the elements

Table 3.4

Nº	Element	Material	Thickness, mm
1	Upright	S275JR	2,3
2	Base foot	Cт 3ПC	1,2
3	Back panel	Cт 3ПC	0,6
4	Universal bracket	S275JR Cт 3ПC	2,0 (200) 2,5 (400...500) 3,0(600...700)
5	Shelf	Cт 3ПC	0,6
6	Plinth	Cт 3ПC	0,6
7	Upright insert	Cт 3ПC	0,8

3.4. The adjustable leg has a range of adjustments 30 mm

The value of the floor level difference shall not exceed 30 mm.

3.5. Lighting – LED lighting,

has a supply voltage of 24V, with the following specifications:

Table 3.5

Nº	Color temperature, K	Power, Vt	Lenght, mm
1	3000, 6500	6,4	600
2	3000, 6500	10	950
3	3000, 6500	12,7	1200

Connection of LED lamps is made on the type of “dad-mom”. More detailed information is available in the technical catalog of the M-light lighting system.

The lighting kit including:

1. LED-light lamp of appropriate lenght and temperature color;
2. Connecting cable;
3. Busbar;
4. Electrical unit of appropriate capacity.

4. PAINTS AND SHADE DIFFERENCES

Deviations from the RAL standard are allowed for powder coating standards for products.

This is due to a number of factors, including:

- **Variations in paint production** – different batches may have slight differences due to the peculiarities of the formulation and technology for manufacturing dyes.
- **Type of coating** – the shade may vary depending on the structure of the paint (glossy, matte, semi-matte, etc.).
- **Lighting conditions** – the color may look different under the influence of daylight, artificial or mixed light.
- **Subjective perception of color** – the peculiarities of human vision can affect how the consumer sees the shade.
- **External factors** – prolonged exposure to climatic conditions or ultraviolet radiation can cause the color of the coating to change over time.
- **Technological processes** – temperature, humidity and other production parameters can affect the final shade of the powder coating.

These features are natural for production and do not affect the quality and durability of the products.

5. OPERATION OF STORE FIXTURE EQUIPMENT

Dear Customers! The following conditions will allow operating your shelves for a long period of time, maintaining their appearance and functionality throughout their use time.

5.1. Shelving must be installed on an even surface with all inserts and operated exclusively in an vertical position.

5.2. Recommended air temperature for operating the shelving is +10 ... +25°C. The distance to the heating units and other heat sources shall be at least 1 m. Avoid prolonged thermal effect, which causes the heating of the shelving surface, as well as direct contact with objects with temperature exceeding +80°C. Do not install shelving close to permanently damp and cold walls and do not subject to a sharp temperature drop, as there is a risk of damage to the product or its components.

5.3. It is recommended to operate shelving at a relative humidity of air from 45% to 70%. Do not expose shelving to conditions of the limit values of humidity in the room for a long period, much less their periodical change. Subsequently, such extreme conditions can adversely affect the shelving. In case of such conditions, we recommend frequent ventilation of the room.

5.4. Avoid direct sunlight.

5.5. Load on the shelving components (uprights, shelves) shall be distributed uniformly and not exceed the permissible limit (p. 28-32 and in the KM catalog p. 9-14)

5.6. Data presented in this Technical Passport do not take into account seismic activity.

5.7. Protect shelving from mechanical damage (impacts with solid objects, do not place objects with sharp edges on the surface, do not scratch the surface with a cutting tool, etc.).

5.8. Avoid direct (especially prolonged) contact of the shelving surface with water. If moisture accidentally appeared on the product, it must be wiped dry with a soft cloth.

5.9. Shelving care shall be done using only soft non-abrasive cleaning agents for the elements covered with powder paints. Difficult contaminations are recommended to clean with a soft bristle brush. Regularly remove dust using a dry cloth (flannel, plush) or a vacuum cleaner.

5.10. During operation of the shelving, it is prohibited:

- Non-intended use of the shelving
- Moving the shelving in the assembled condition.
- Exceeding the allowable loads specified in the Table 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13.
- Exposing the shelving and their elements to unproductive loads (throwing goods on the shelves, standing on the shelves with feet, etc.).
- Operating the shelving that is not set with adjusting inserts according to vertical and horizontal levels.
- Expose the shelving to external forces (hits, shocks, etc.).
- Using shelving components not corresponding the dimensions (for example, a shelf 400 mm deep with a bracket 300 mm long, etc.).
- Using abrasives, sharp objects, chemicals, etc. to clean shelving surfaces.
- Allowing contact of any shelving elements with an open flame or high temperature.
- Allowing contact of shelving details with chemically active preparations and liquids of organic origin.
- Allowing direct contact with food.

Significant deviation from the specified operating modes leads to a major deterioration in the consumer characteristics of the shelving.

6. INSTALLATION INSTRUCTIONS



Wrench:
• 13–14 mm
• 17–19 mm



Hand rubber hammer



Cordless tool



Levelling
gauge



Rope

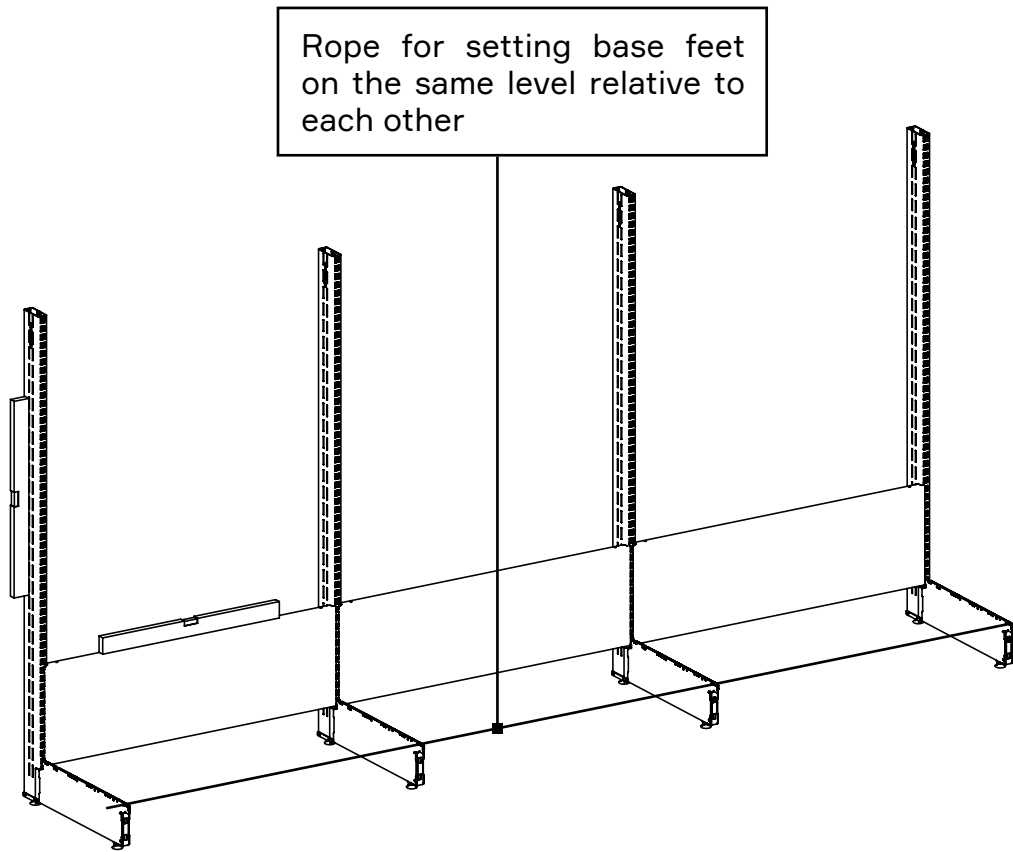


Hex key

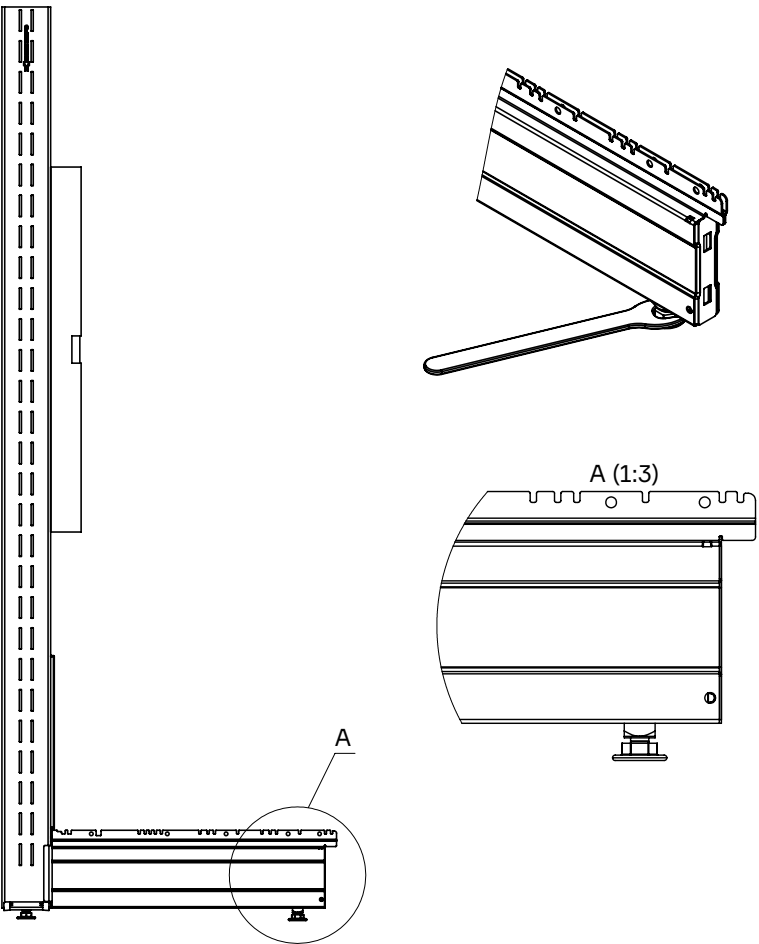
When assembling shelving, observe the following rules:

- The installation of shelving must be carried out by at least two persons authorized to perform this type of works
- Installation shall be carried out according to safety rules and using appropriate means.
- Follow the order of operations.
- Tighten up each mounting element thoroughly.
- The shelving shall be assembled from the bottom to the top
- If it is necessary to move the shelving structure, disassemble it into separate components.
- During and after installation, be sure to place the shelving vertically to the floor with the help of the water level gauge and the adjustment inserts. Base feet shall be on the same level relative to each other (see pic. 4.1, 4.2, 4.3, 4.4).

Pic. 4.1



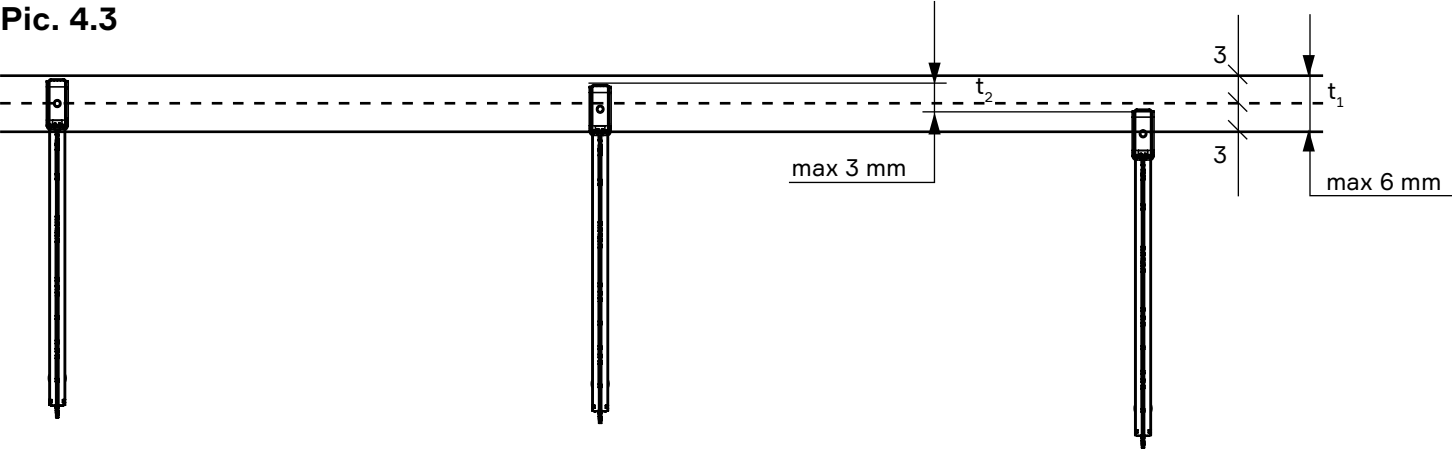
Pic. 4.2



When aligning shelving in row construction, the maximum allowable values of inter-axial deviations are:

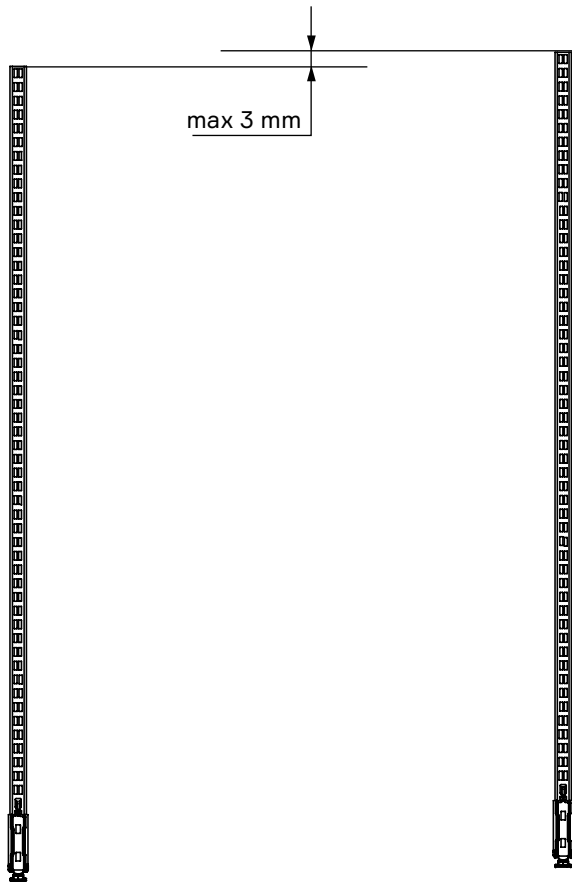
- $t_1 = 6\text{ mm}$ – along the whole construction (from the first upright to the last)
- $t_2 = 3\text{ mm}$ – between two consecutive uprights

Pic. 4.3

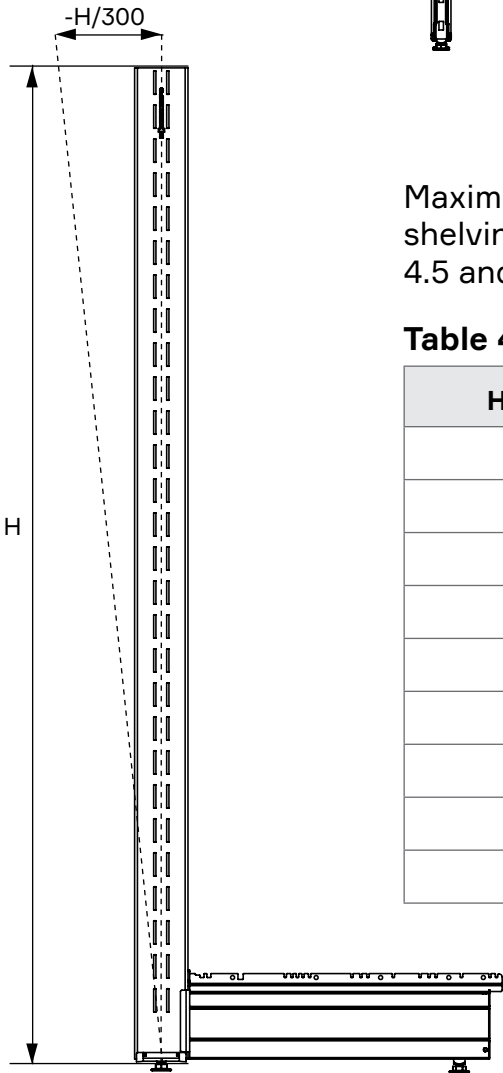


The tolerance for vertical alignment of two consecutive uprights shall not exceed 3 mm (pic. 4.4).

Pic. 4.4



Pic. 4.5

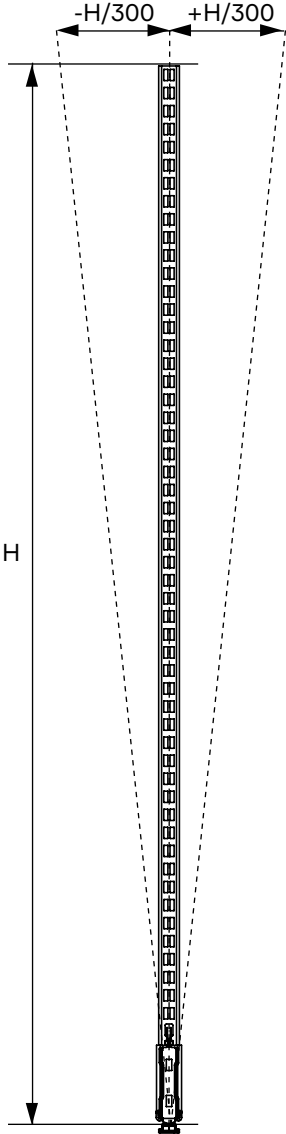


Maximum permissible deviation of the upright of the wall-adjacent shelving from the axis of symmetry without loads is shown in pic. 4.5 and given in Table 4.1.

Table 4.1

Height of an upright, mm	Deviation of an upright $H/300$, mm
1320	4.4
1473	4.9
1625	5.4
1778	5.9
1930	6.4
2082	6.9
2235	7.5
2387	8.0
2540	8.5

Pic. 4.6



Pic. 4.6 shows the longitudinal deviation relative to the axis and given in Table 4.2.

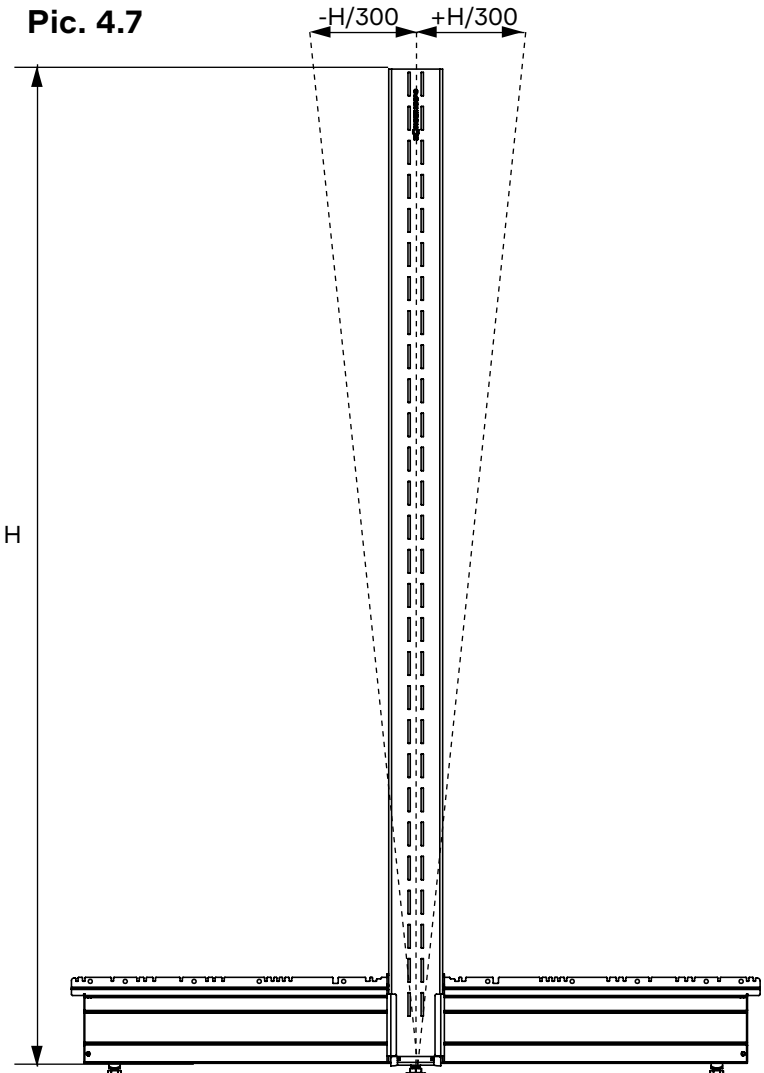
Permissible transverse deviation of the an upright of the wall-adjacent shelving, without load.

Table 4.3 Maximum permissible deviation of the upright of the double-sided shelving from the axis of symmetry without loads is shown in pic. 4.7 and given in Table 4.2.

Table 4.2

Height of an upright, mm	Deviation of an upright $H/300$, mm
1320	4.4
1473	4.9
1625	5.4
1778	5.9
1930	6.4
2082	6.9
2235	7.5
2387	8.0
2540	8.5

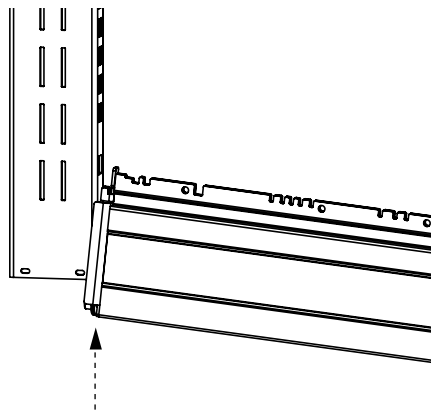
Pic. 4.7



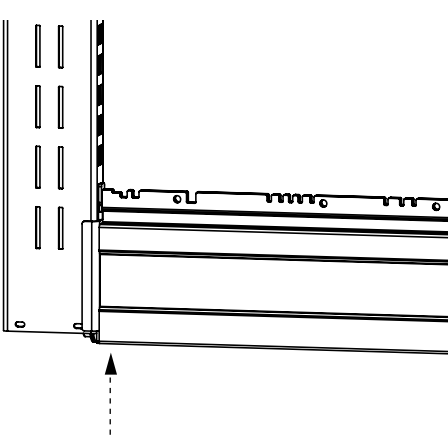
6.1 UPRIGHT INSTALLATION

- 6.1.1 Put the top hitch of the base foot in the perforation opening of the upright, and the lower hitch — in the lower groove (pic. 4.8). Place the base foot into the upright up to the stop (pic. 4.9).
- 6.1.2 Tighten the screw in the base foot until it stops (pic. 4.10 or pic. 4.11).
- 6.1.3 Set up the insert, as shown on the pic. 4.12.

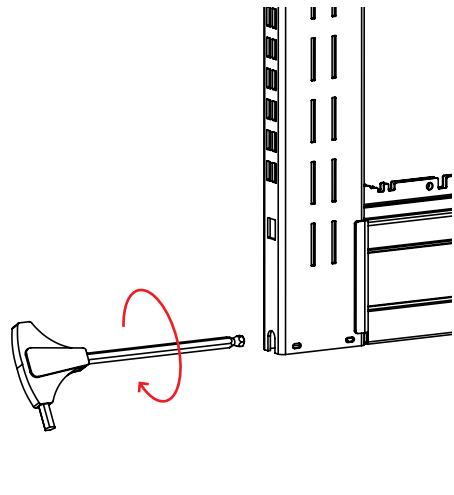
Pic. 4.8



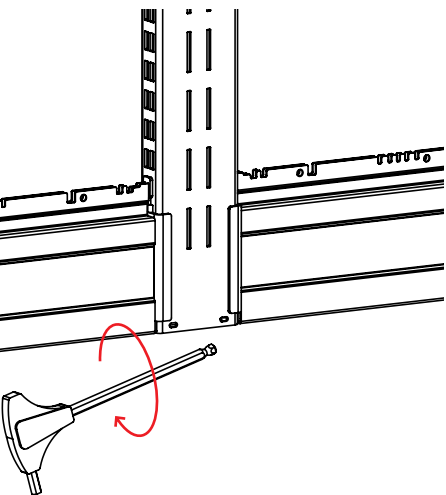
Pic. 4.9



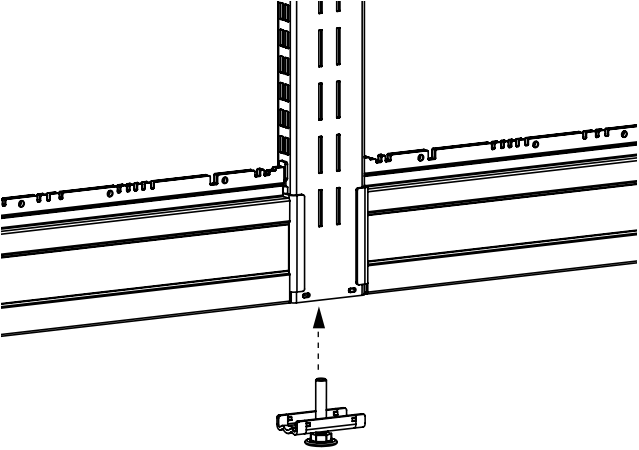
Pic. 4.10



Pic. 4.11



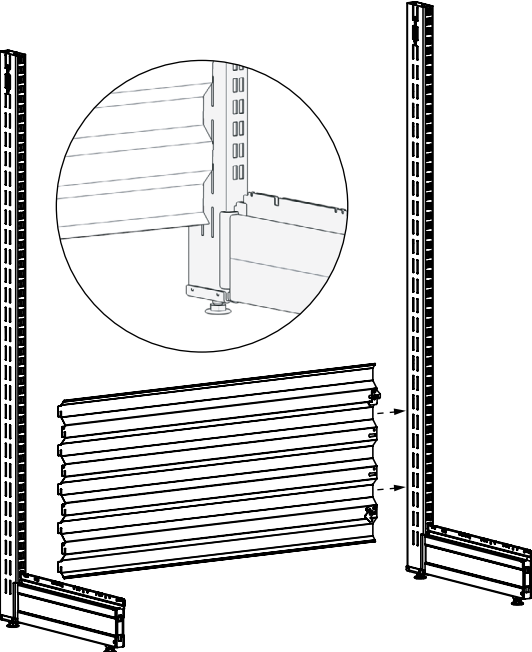
Pic. 4.12



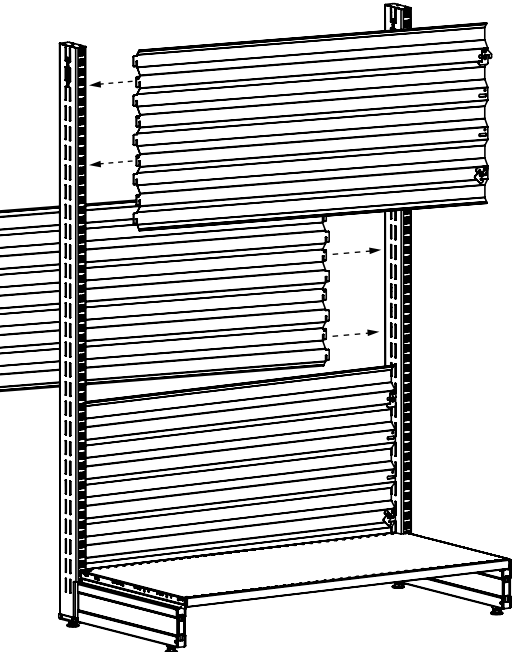
6.2 SHELVING INSTALLATION

- 6.2.1. The middle back panels needed to hang from the bottom (pic. 4.13, pic. 4.14).

Pic. 4.13

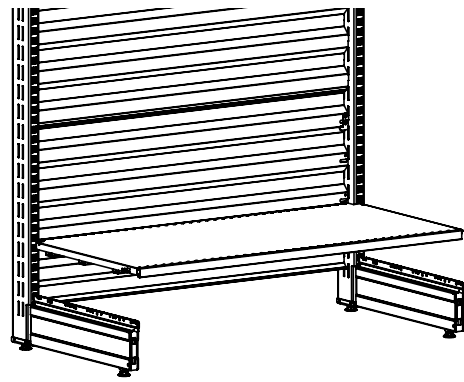
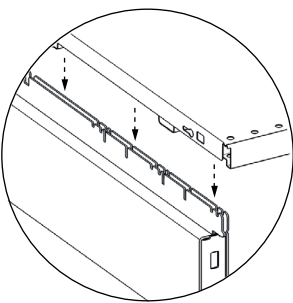


Pic. 4.14



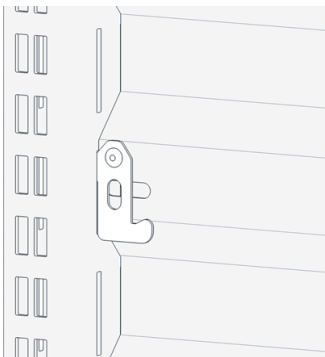
- 4.2.2. Install base shelf between plates of each base foot (pic. 4.15).

Pic. 4.15

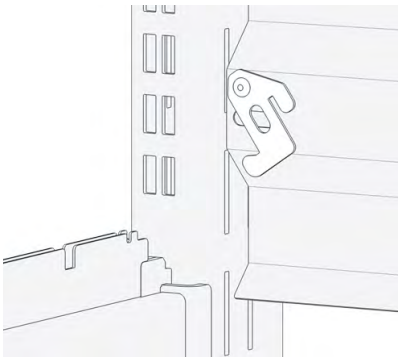


Pay attention that the lowest bottom back panel hook went into the second upright middle perforation (pic. 4.13). Side of the middle panel without fixators are installed in the upright (pic. 4.13). The side with the fixators is installed following sequence: the top fixator is mounted in a upright (pic. 8.14a), and further we fix lower (pic. 8.14b).

Pic. 4.14a



Pic. 4.14b

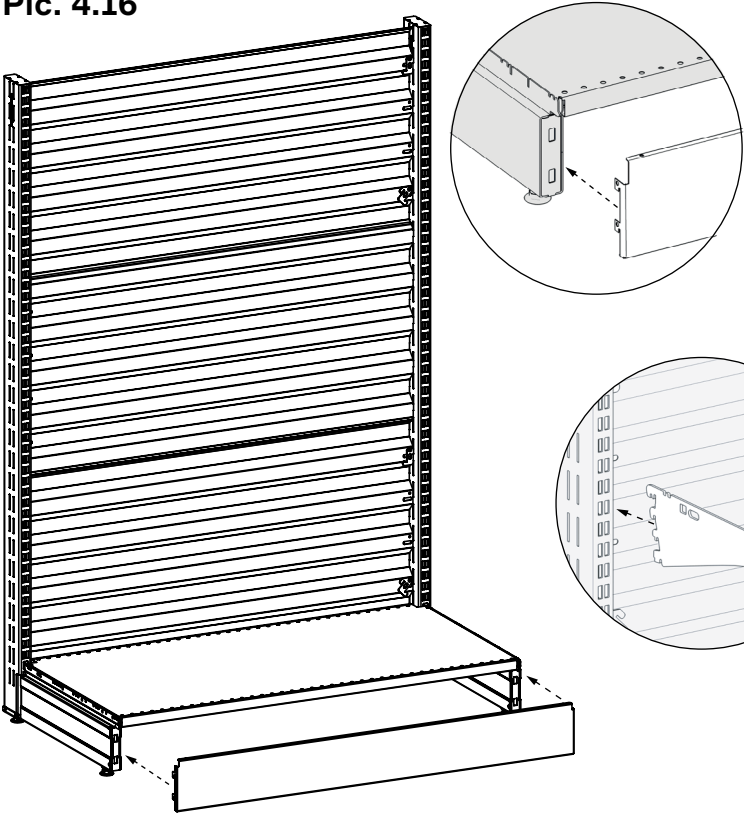


6.2.3. According to (pic. 4.16) set the plinth with hooks into the hole on the ends of the base feet.

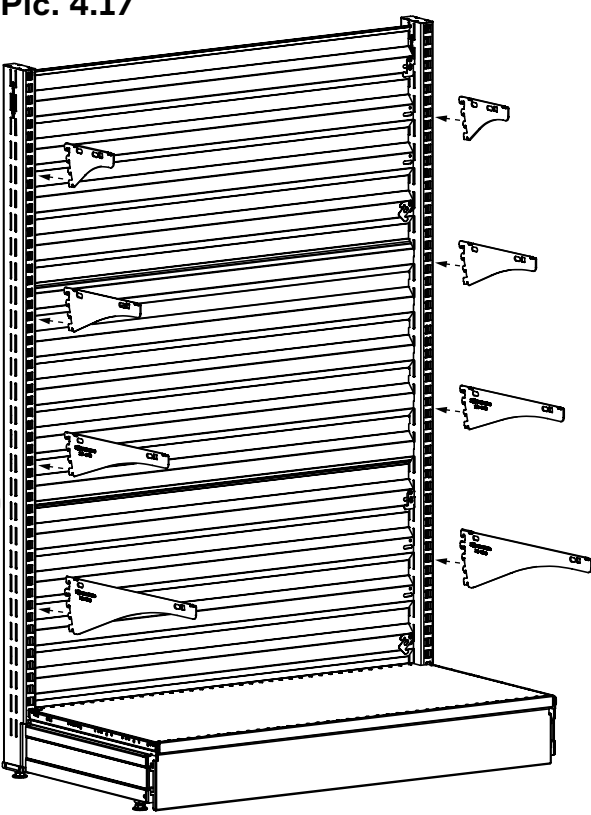
6.2.4. Lock brackets in perforation leg holes at the required height, as shown on the pic. 4.17.

6.2.5. Install shelves on brackets, as shown on pic. 4.18.

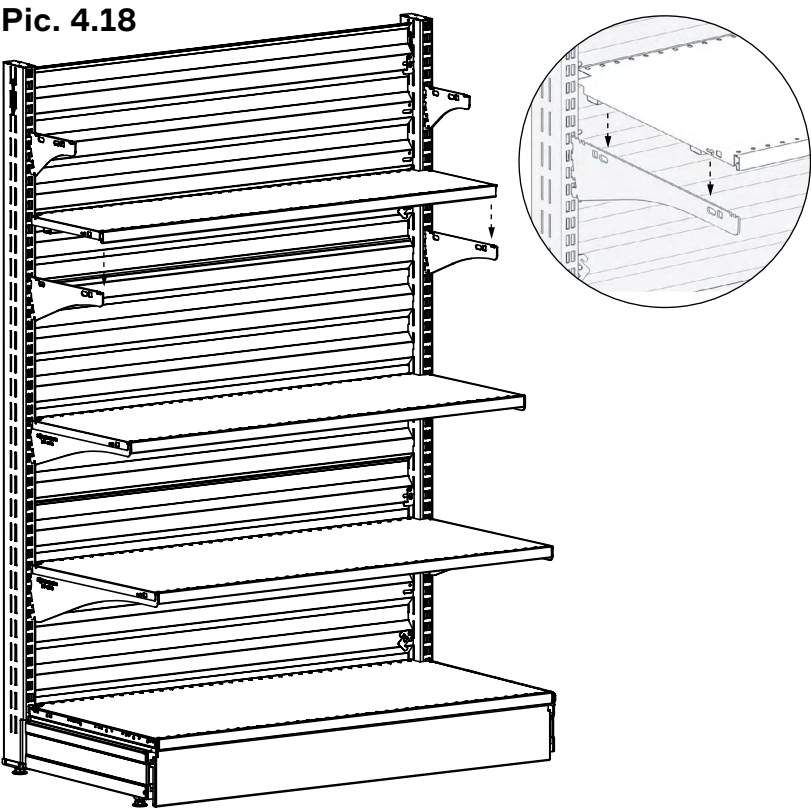
Pic. 4.16



Pic. 4.17



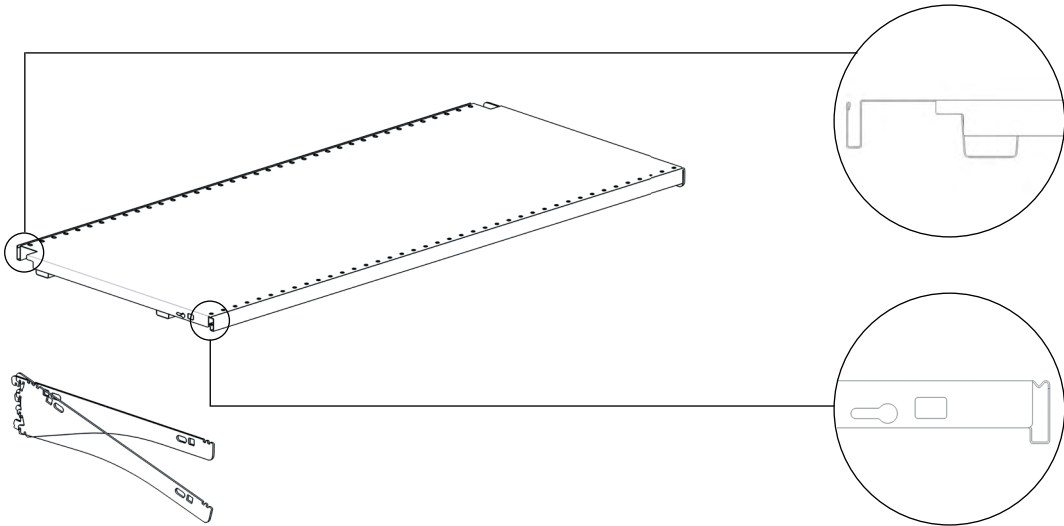
Pic. 4.18



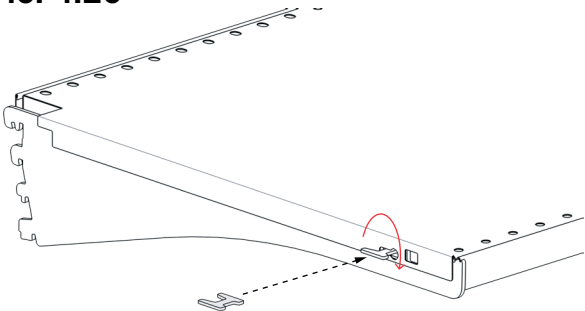
6.2.6. Fasten shelves on brackets with fixators KN FK 001, as shown on pic. 4.20. Moreover two adjacent shelves must be attached by one pair of fixators.

Note. The design of the universal bracket KM KRU XXX provides the ability to install it in two positions, at an angle of 0 and 15 degrees.

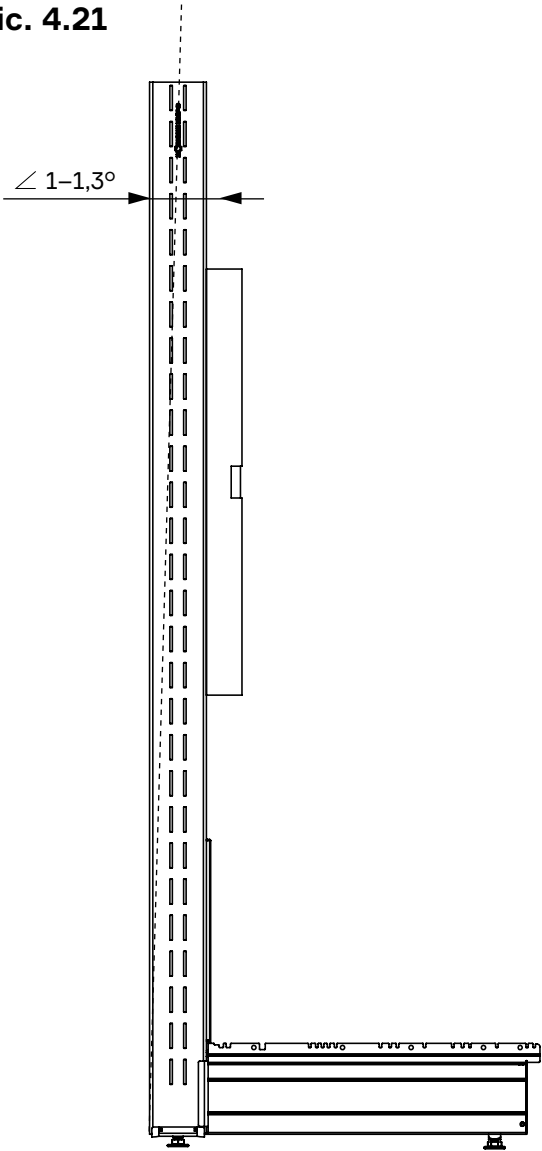
Pic. 4.19



Pic. 4.20



Pic. 4.21



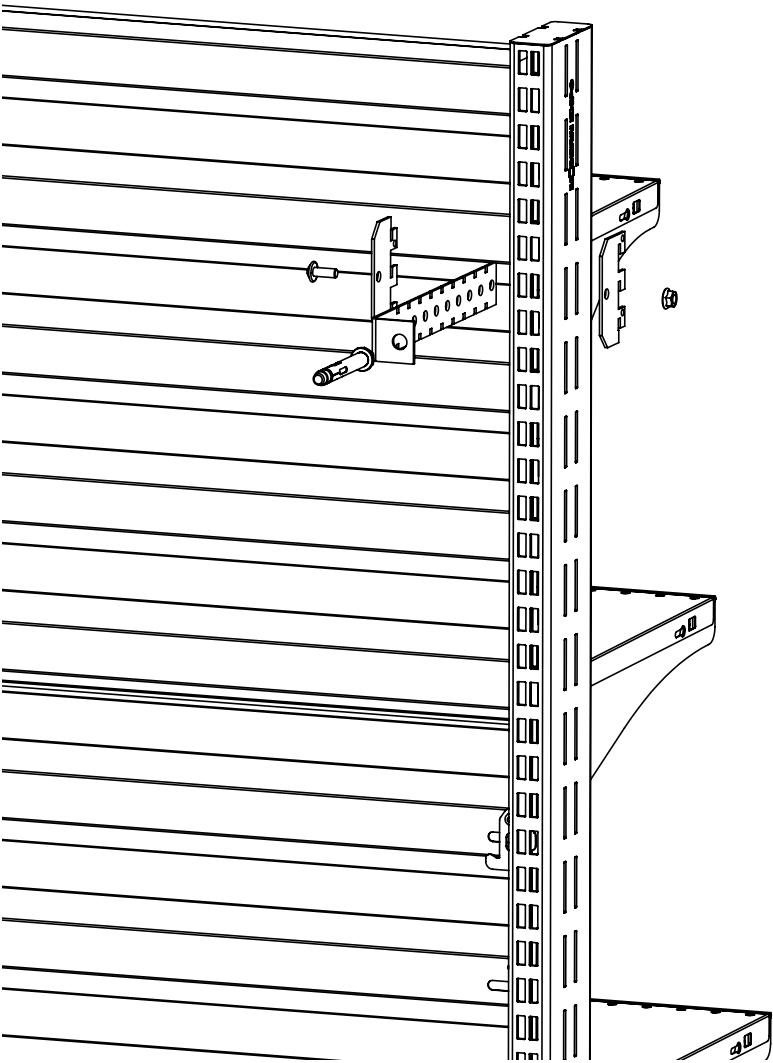
6.2.7. In case if wall unit is not fixed to the wall, it is necessary to set the shelving tilted against the wall at an angle from the vertical 1–1.3 (pic. 4.21). Regulate the base foot adjustment according to it depth, as shown in the table 4.2.1.

Table 4.2.1

Base foot	Number of complete turns*
450	3.5
550	4.5
650	5.5
750	6.0
800	6.5

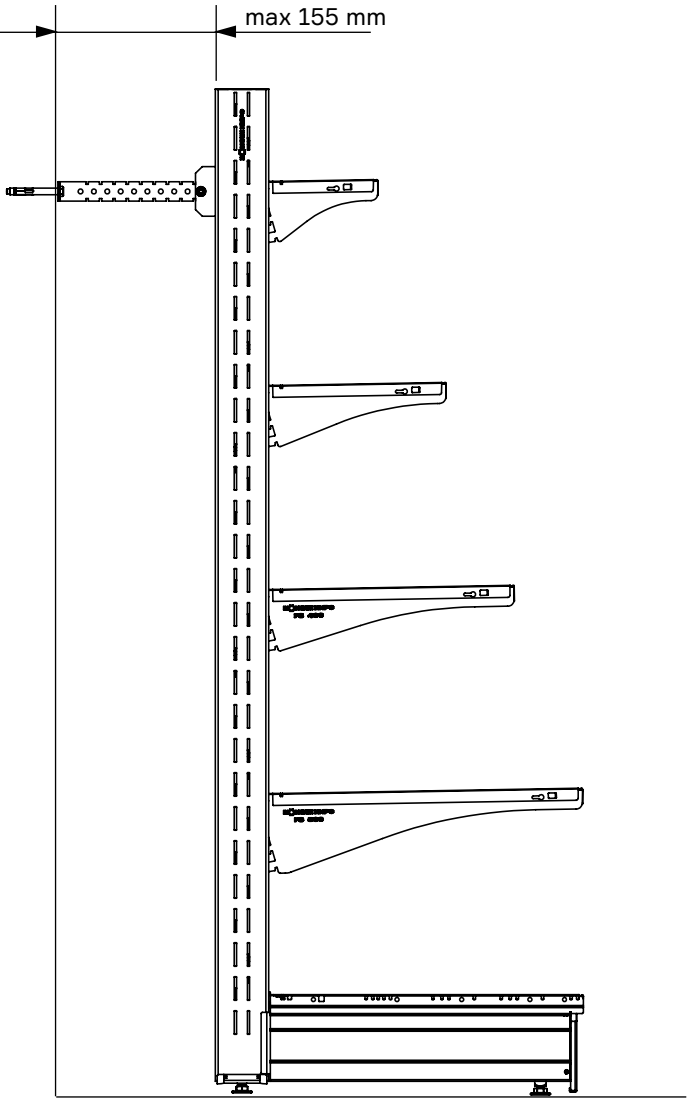
6.2.8. To increase the resistance of the shelving it must be fixed to the wall with the bracket and remote anchor bolt as shown on pic. 4.23.

Pic. 4.23



Note. The universal one-side shelving with distance bracket can be mounted with it's rear part to the wall at a distance of no more than 155 mm (pic. 4.24).

Pic. 4.24

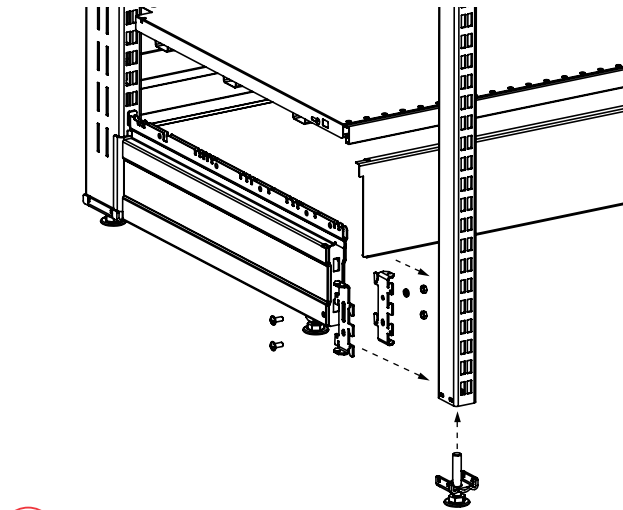


6.3 MOUNTING OF SHELVING WITH A FRONT UPRIGHT

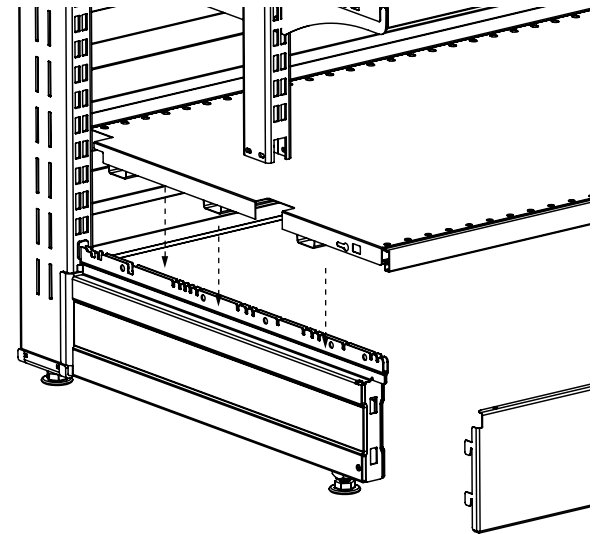
6.3.1. Mounting upright and back panels of shelving with front upright is carried out similarly to the installation of uprights and back panels of universal shelving.

6.3.2. As it shown on the pic. 4.24, fix an insert to the front uprights and fasten it to the shelving using the front upright fixator KM KNP. In the second case (pic. 4.25) mount front uprights on the base foot.

Pic. 4.24



Pic. 4.25



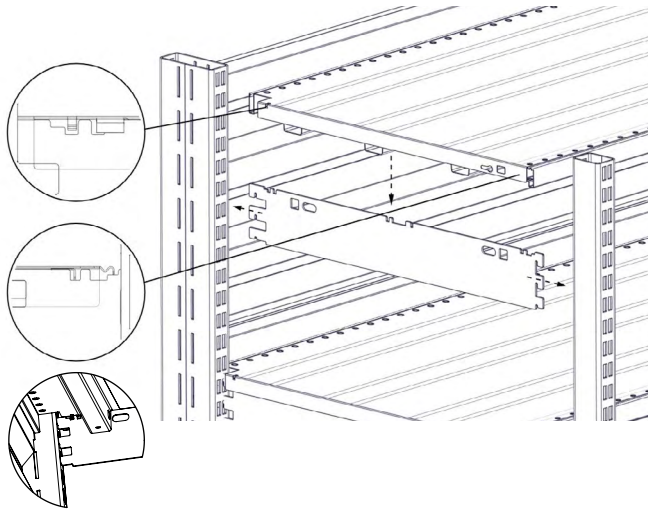
PAY ATTENTION! The kit of the shelving with the front upright (Type №1, without front bracket) includes standard reinforced shelves (mounted on bilateral brackets and on the base), and set the shelving on the front upright (Type №2, with front bracket) includes special shelves for shelving wsth front upright.

6.3.3. Set the upper two-side brackets by longer hooks in the rear upright (pic. 4.26) and, according to (pic. 4.27), the front brackets to the front uprights.

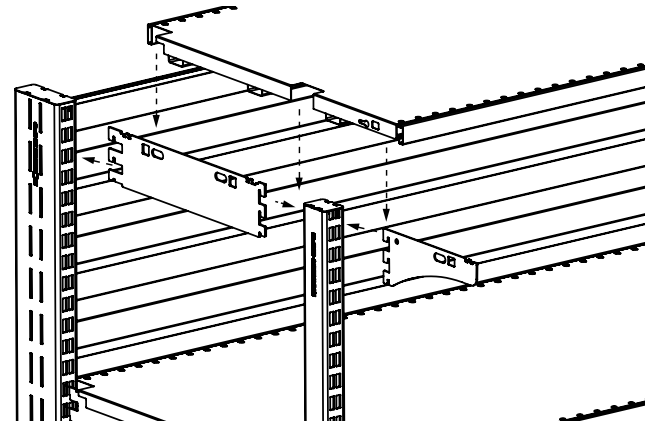
6.3.4. Place the upper shelves on the brackets (pic. 4.26, 4.27), and additionally fix them with fixators KN FK 001.

6.3.5. Place the shelves starting from the bottom.

Pic. 4.26

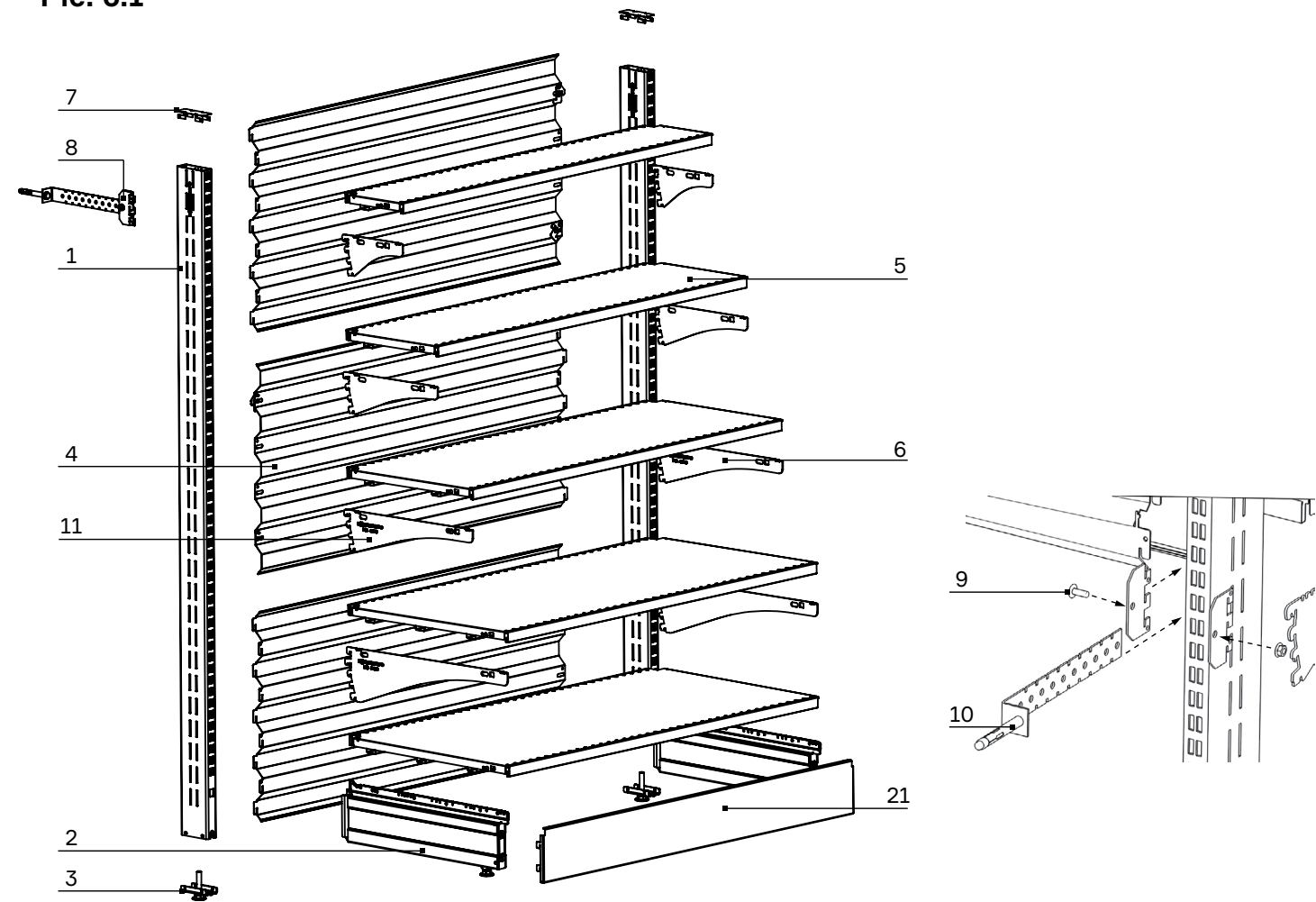


Pic. 4.27



7. SHELVING UNITS CONSTRUCTION

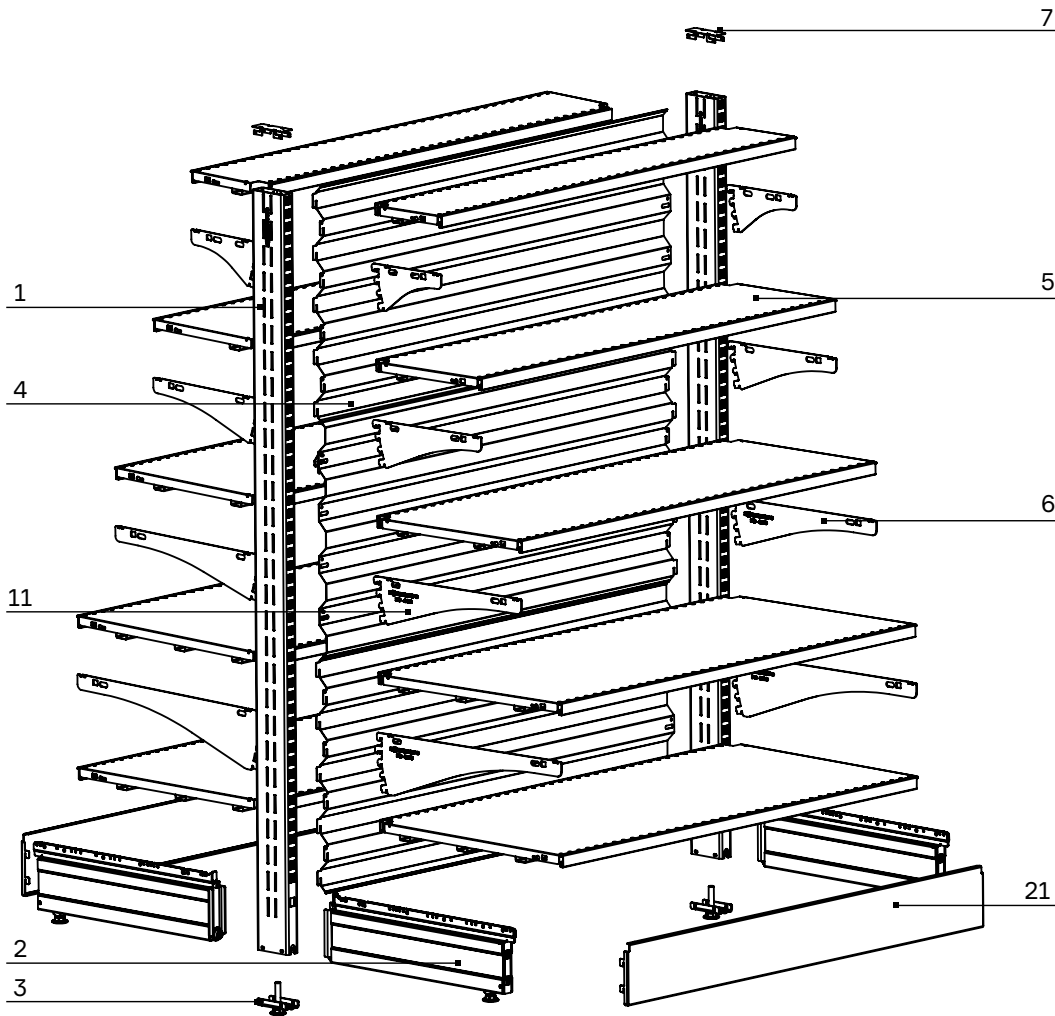
Pic. 6.1



6.1 Wall unit

Nº	Name	Q-ty
1	KM NS – Upright	2
2	FS PN 01 – Base foot	2
3	KM VST – Upright insert	2
4	FS STS – Middle back panel	3
5	FS PS – Shelf for middle back panel	5
6	FS KRU – Bracket	8
7	KM ZGN – Upright top plug	2
8	KM KRST – Wall bracket	2
9	Screw	2
10	Anchor bolt AB 90	2
11	KM FK 001 – Bracket fixator	8
21	KM PD – Plinth	1

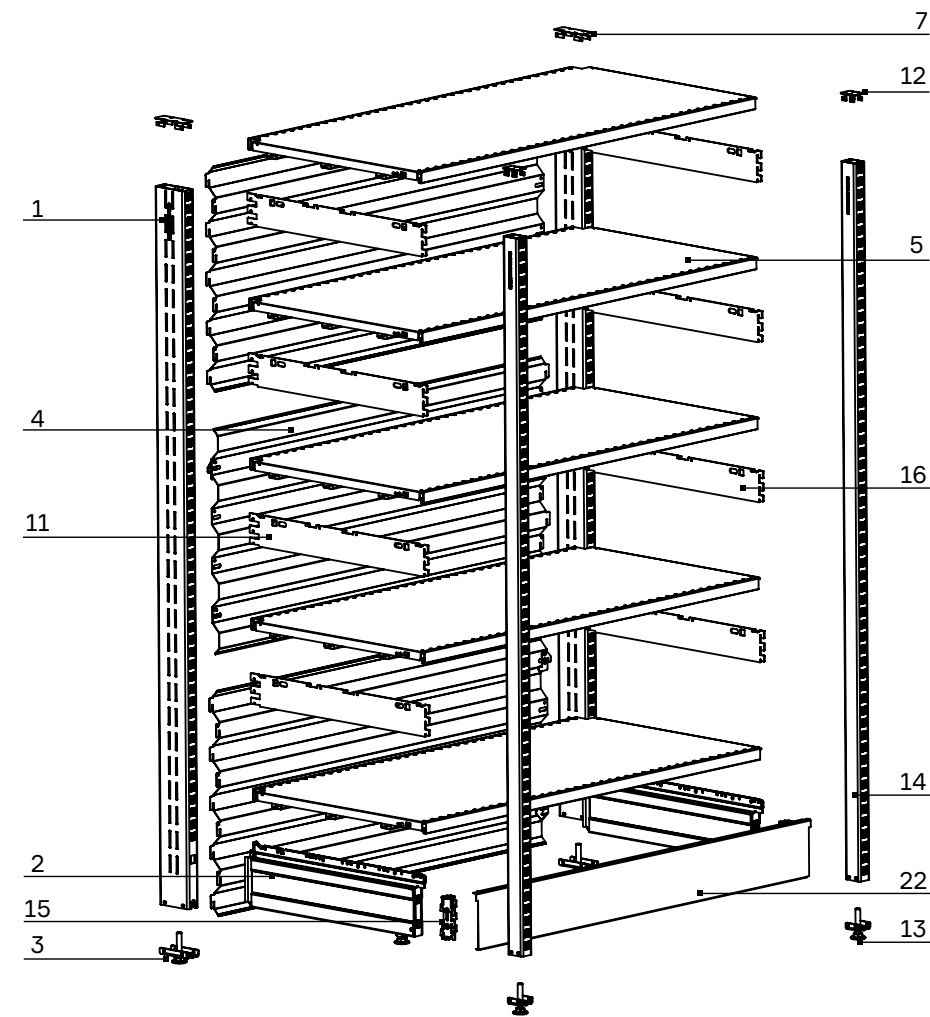
Pic. 6.2



6.2. Gondola unit

Nº	Name	Q-ty
1	KM NS – Upright	2
2	FS PN 01 – Base foot	4
3	KM VST – Upright insert	2
4	FS STS – Middle back panel	3
5	FS PS – Shelf for middle back panel	10
6	FS KRU – Bracket	16
7	KM ZGN – Upright top plug	2
11	KN FK 001 – Bracket fixator	16
21	KM PD – Plinth	1

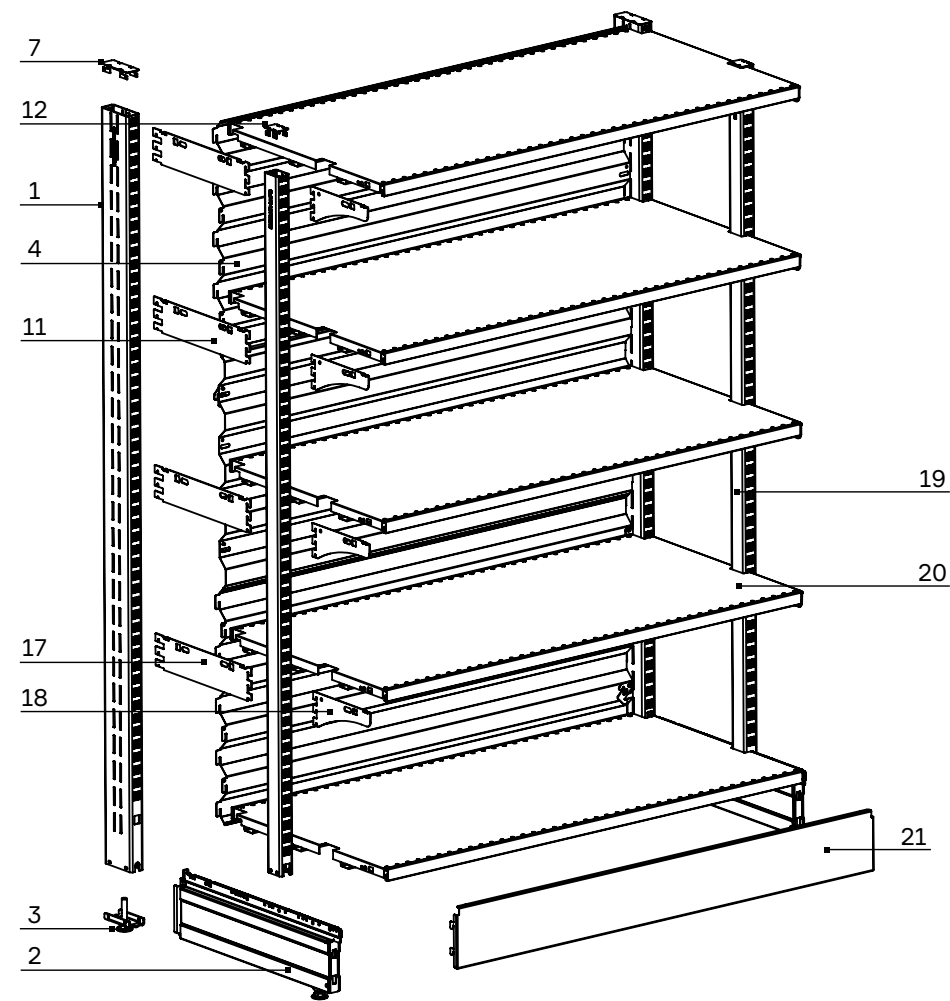
Pic. 6.3



6.3 Shelving with front upright TYPE 1

Nº	Name	Q-ty
1	KM NS – Upright	2
2	FS PN 01 – Base foot	2
3	KM VST – Upright insert	2
4	FS STS – Middle back panel	3
5	FS PS – Shelf for middle back panel	5
7	KM ZGN – Upright top plug	2
11	KN FK 001 – Bracket fixator	8
12	KM ZGN 30 40 – Upright top plug	2
13	KM VST 40 – Upright insert	2
14	KM NP – Front upright	2
15	KM KNP – Front upright fixator	2
16	FS KRD – Two-sided bracket	8
22	KM PD NP – Front upright plinth	1

Pic. 6.4



6.4 Shelving with front upright TYPE 2

Nº	Name	Q-ty
1	KM NS – Upright	2
2	FS PN 01 – Base foot	2
3	KM VST – Upright inser	2
4	FS STS – Middle back panel	3
7	KM ZGN – Upright top plug	2
12	KM ZGN 30 40 – Upright top plug	2
17	FS KRD – Two-sided bracket	8
18	KM KR NP 160 – Front upright bracket	8
19	KM NPV – Internal front upright	2
20	FS PS NP – Shelf for middle back panel and front upright	5
21	KM PD – Plinth	1

8. УПАКОВКА, ЗБЕРІГАННЯ, ТРАНСПОРТУВАННЯ

All shelving elements are supplied to the customer in the package. The type of packaging may change at the discretion of the manufacturer, depending on the type and quantity of products.

The packaging provides protection during transportation, unloading, reliable fixing on the pallet and eliminates friction of products during storage, transportation, loading and unloading operations.

The elements of the shelving structure do not pose a danger to the environment. After the expiration of the shelving service life, the elements are to be disposed in the usual manner.

The packed elements of the shelving structure can be transported by any mode of transport in accordance with the rules of carriage valid for this type of transport.

Shelving transportation shall be carried out in a vehicle protected from the influence of the environment.

Shelving storage shall be carried out in an indoor area protected from direct influence of atmospheric precipitation, on wooden pallets and shelving at a temperature of -10°C to +25°C and relative humidity not more than 70%.

9. УТИЛІЗАЦІЯ

The structural elements of the shelving unit do not pose a threat to the environment. Upon completion of their service life, the shelving units must be dismantled and disposed of in accordance with the established procedure.

Disposal is carried out by disassembling the structure into its component materials, followed by transfer to the appropriate organizations for recycling or neutralization in accordance with the applicable waste management legislation.

10. SAFETY AND PERMISSIBLE LOADING

All of the loads listed below relate to a uniformly distributed static load and are a synthesis of tests performed on individual components of the equipment, which includes at least two consecutive wall sections.

The load tables refer to the configuration with the last load shelf at a maximum height of 1800 mm from the floor.

The values shown in the tables below correspond to the norms for calculation, production and testing of steel structures.

For other types of testing configurations, please, contact the support department of the company Modern Expo.

Maximum load on the wall unit = load on the basic shelf Q_b + total load on shelves on the brackets Q_h:

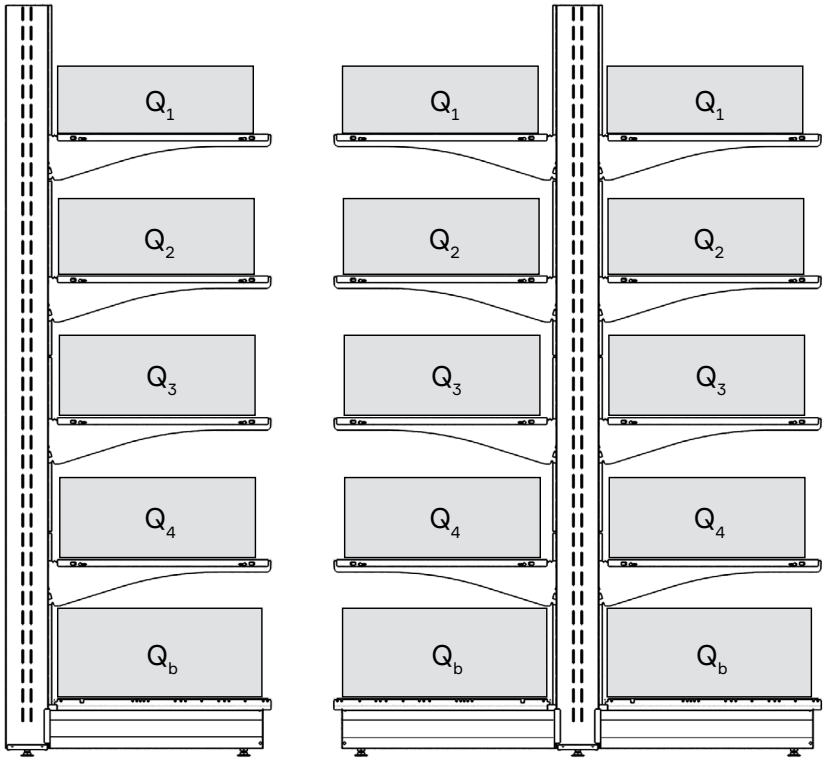
Q_{max} = Q_b + Q_h — wall unit

Q_{max} = 2Q_b + 2Q_h — gondola

Q_h = Q₁ + Q₂ + Q₃ + Q₄

The maximum load on the unit is calculated based on the deflection of the inner uprights of construction.

Permissible loads on shelves and racks should not exceed the maximum permissible values for each type of construction (p. 26-29).



Base shelf loading FS PS, Qb, kg

Table 8.1

W, mm L, mm	250	300	350	400	450	500	550	600	650	700
665	100	100	155	155	250	250	250	250	270	270
1000	100	100	240	240	250	250	250	250	270	270
1250	100	100	220	220	250	250	250	250	300	300
1330	100	100	180	180	250	250	280	280	325	325

Shelf loading FS PS, Qp, kg

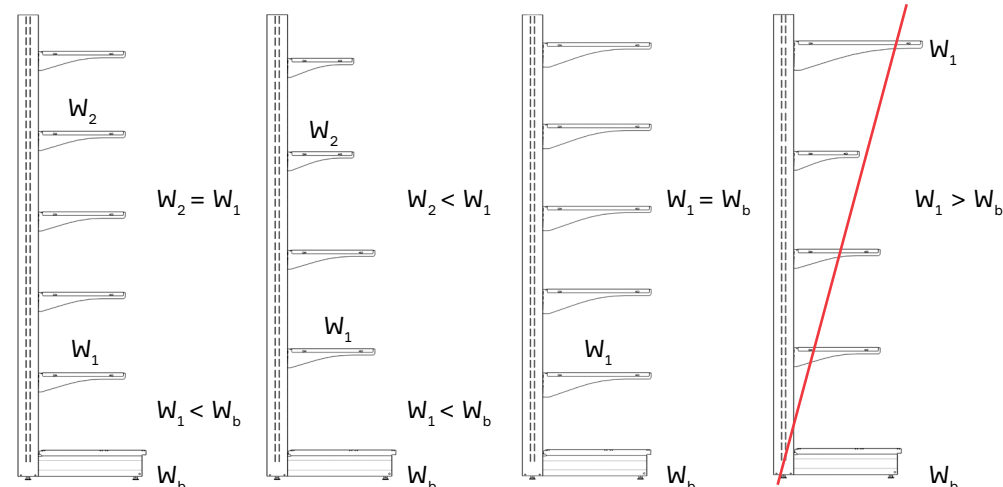
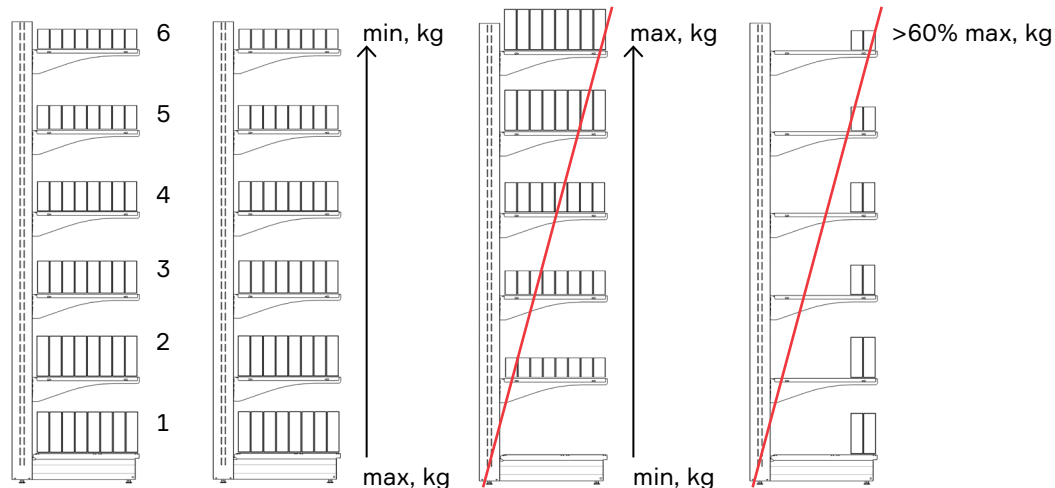
Table 8.2

W, mm L, mm	250	300	350	400	450	500	550	600	650	700
665	100	100	120	130	140	160	150	150	150	150
1000	100	100	120	130	130	180	175	230	195	195
1250	100	100	160	130	130	180	175	230	230	230
1330	100	100	150	140	140	190	175	255	255	255

Wire shelf loading, FS PRW SRS Qp, kg

Table 8.3

W, mm L, mm	200	300	400	500	600
665	50	60	90	110	120
1000	60	80	130	150	160
1250	50	110	125	150	175
1330	50	100	120	140	160



Permissible hanging shelves loading of shelving unit, Qh, kg

Table 8.4[illegible]

Permissible hanging shelves loading of shelving unit, Qh, kg

Table 8.4[illegible]

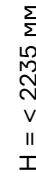


Table 8.6

H, mm	Δ, mm
1200	15
1400	20
1600, 1800	25
2000, 2200	30

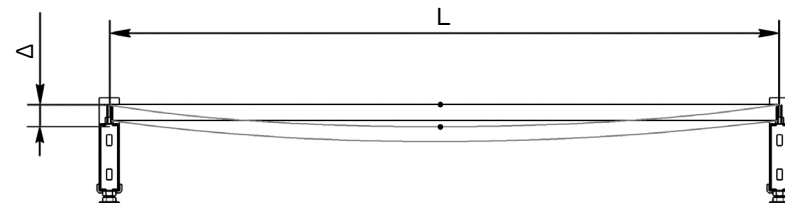
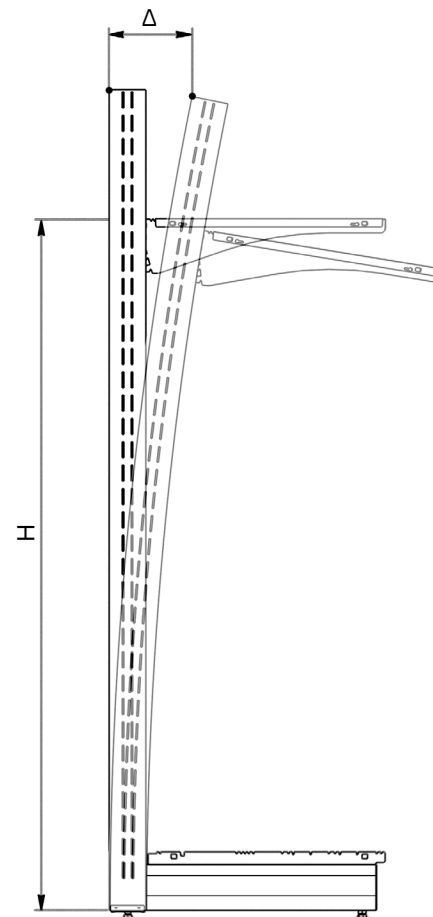


Table 8.7

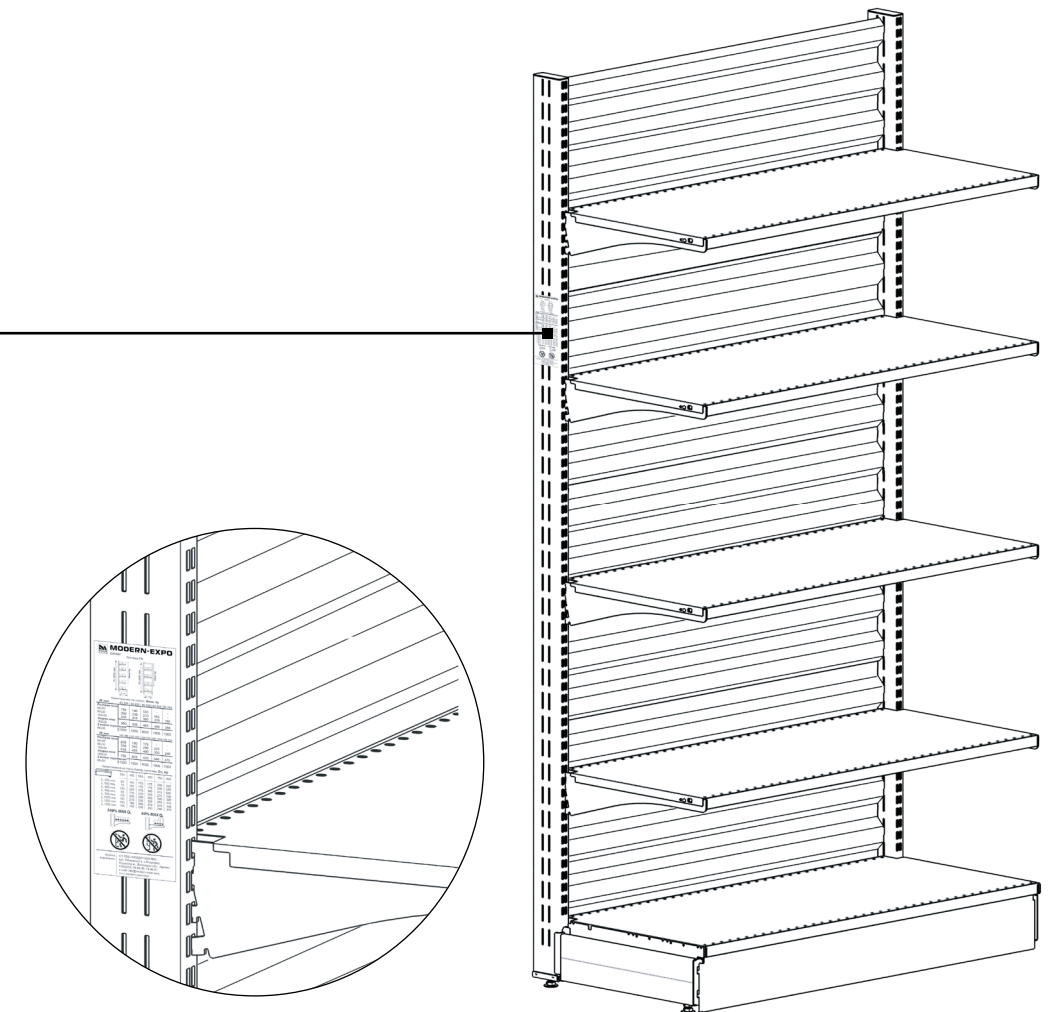
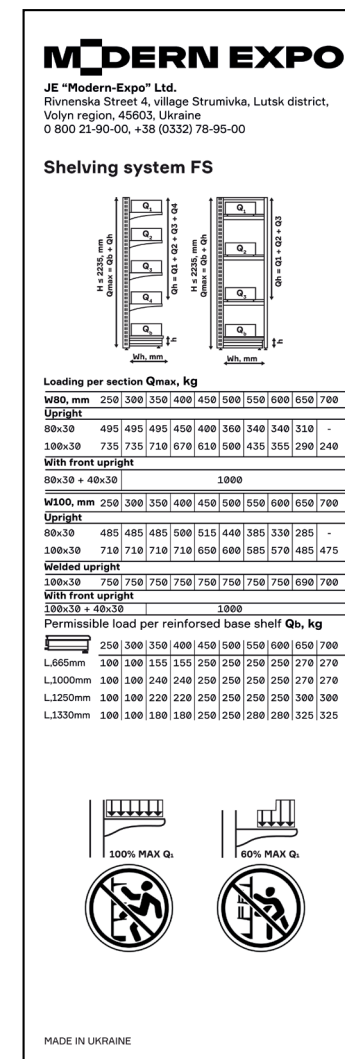
L, mm	Δ , mm
665	4
1000	6
1250	7,5
1330	8



Labels with information about permissible loads must be stuck on the upright of gondola head, approximately at 1750 mm from the floor, if the shelving is lower than 1778 mm, label with information must be stuck 50 mm below the upper point of the upright.



White		Black	
UA	9975-660-04	UA	9975-661-04
EN	9975-666-04	EN	9975-667-04
DE	9975-668-04	DE	9975-669-04
PL	9975-664-04	PL	9975-665-04
FR	9972-263-04	FR	9972-262-04



The label is included in each 6 upright.

12. WARRANTY OBLIGATIONS

JE “Modern-Expo” guarantees the elimination of manufacturing defects in the equipment identified during acceptance, installation, or operation within 12 months from the moment of its transfer to the buyer, provided that the installation was carried out no later than 1 month from the transfer to the buyer, and also if the installation (supervised installation) of the equipment was performed by the supplier’s representatives (authorized subcontractor by the supplier) or by specialists certified by the supplier.

In all other cases, the warranty period for the equipment is 14 calendar days from the date of delivery to the buyer.

The warranty does not apply in the following cases:

- use of the equipment for purposes other than its intended use;
- any mechanical or chemical damage;
- for damage to the paintwork resulting from violation of transportation, storage, installation or operation conditions;
- failure to comply with the storage and operating conditions described in the operating manual;
- damage incurred during transportation, unloading, storage, or incorrect installation by the buyer and/or third parties;
- in case of equipment defects as a result of force majeure;
- missing or altered factory serial number (if available);
- unapproved modifications to the equipment’s design;
- intervention in the equipment by persons not authorized by the manufacturer;
- execution of repair, adjustment, or replacement of components and other works by individuals who are not employees of the supplier or not authorized by the manufacturer;
- natural wear and tear of the structural components (e.g., discoloration, abrasions, scratches resulting from operation, etc.);
- damage resulting from using the equipment in combination with other equipment not provided or approved by the manufacturer;
- use of non-original spare parts, components, or consumables.
- damage caused by improper electrical contact
- The warranty does not cover consumables (fuses, lamps, etc.).

Any repairs or replacement of defective materials or mechanisms during the warranty period do not extend the overall warranty period.

The timeframe for eliminating defects or replacing the equipment is 30 (thirty) days from the date of the official defect report (Act).

CERTIFICATE OF RACKING ACCEPTANCE BY CUSTOMER

This confirms that the customer’s side has no claims to the supplier regarding the quality and safety of the delivered and assembled racking equipment.

Customer Representative, Full Name

Position

Date/Signature

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