Sliding windows and French windows

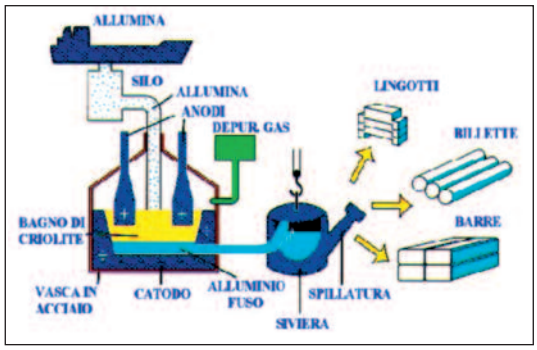
NC-S 120 SD

METRA

Italian Style Emotions

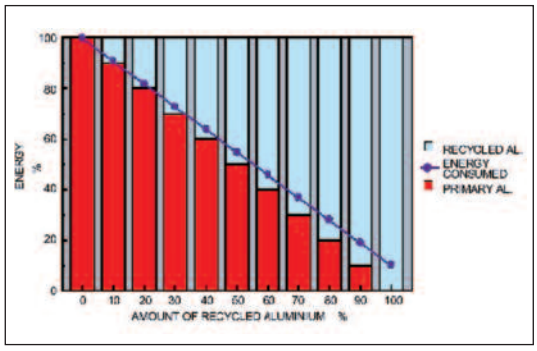
ALUMINIUM AND ECOLOGY

• PRODUCTION OF PRIMARY ALUMINIUM



In nature the aluminium does not lie loose, but as a compound which makes up 8% of Earth crust.
The aluminium is the 3rd most widespread element in the World after oxygen and silicium.
The bauxite is mined from the Earth crust; from the bauxite, by electrolysis, the aluminium oxide (alumina) is obtained: it is the raw material necessary for the production of primary aluminium.
From 4 kg bauxite we obtain 2 kg alumina, from which we obtain 1 kg aluminium.

• ENERGY SAVING IN RECYCLING



The quality of aluminium does not change when recycling.
The production scraps of the primary aluminium are directly recycled and re-utilised.
The re-melting of 1 kg aluminium requires only 5% of the energy employed for the production of the metal from the bauxite.

• ENVIRONMENT

In the aluminium industry, the production of gases contributing to the greenhouse effect is due to the utilisation of fossil fuels and to the electrolysis process.
The emitted quantities of the above gases are very low and their influence on the total gases produced by the man are around 1% only.
However, the ever growing utilisation of aluminium in fields like the sector of transports, enables to reduce the weight of the vehicles, setting a limit to the emission of gases into the atmosphere; the utilisation of thermal break aluminium windows and doors enables a remarkable energy saving.

• RECYCLING

The re-melting of aluminium requires a modest quantity of energy.
In the recycling process it is necessary to employ only 5% of the energy required at the origin to produce the primary metal with material losses lower than 3%.

ALUMINIUM PROPERTIES

• LIGHTNESS

The aluminium is an extremely light metal: its specific weight is 2.7 g/cm^3, that means only one third of the specific weight of the steel.

• RESISTANCE

The resistance of aluminium can be optimised with the addition of low quantities of other metals. Some particular alloys can make the resistance of aluminium similar to the steel.

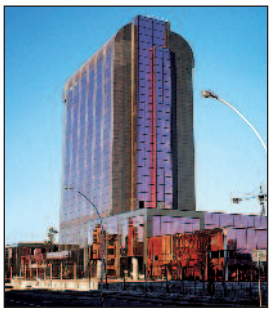
• RESISTANCE TO CORROSION

The spontaneous oxide coating protects the aluminium making it particularly resistant to corrosion. This feature can be improved by means of specific surface treatments.

• MACHINABILITY

The aluminium can be used in the most various applications, thanks to the possibility to employ alloys which raise and complete its mechanical features.

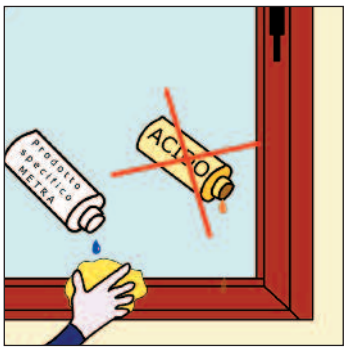
• INFLAMMABILITY AND FIRE RESISTANCE



Thanks to its refractoriness features, the aluminium can be employed in the buildings and in the transport sector as well.

Cleaning and maintenance of aluminium windows

With the respect of cleaning and maintenance rules here given, the aluminium windows will keep their own performances of air-water tightness and beauty of surfaces. In order to keep these qualities, the exposed profiles and surfaces must be subject to regular cleaning and maintenance.
The frequency of intervention depends on the building surrounding and must be higher when located near the coast, in industrial and highly polluted areas. The cleaning of aluminium profiles is very simple: it's enough to pass carefully over them with a soft sponge moistened with the proper detergent. The detergent must not be abrasive, not with a basis of ammonia, not with a basis of chlorine (ex: bleach) or alkaline or acid products.
The maintenance of the profiles for opening frames is often combined with the glass cleaning; we deeply recommend to clean the surfaces when they are not exposed to heat sources nor to the rays of the sun.



IMPORTANT NOTES
The aluminium anodised and painted can not be in contact with damp mortar or chalk. Then, during the masonry work, we always recommend to protect the opening and sash frames in order to avoid any possible damaging.

DO NOT USE
- Aggressive alkaline chemical products (ex. ammonia).
- Strong acids.
- Hypochlorites (ex. bleach).
- Oxiding products.
- Nitro-acetone solvents.

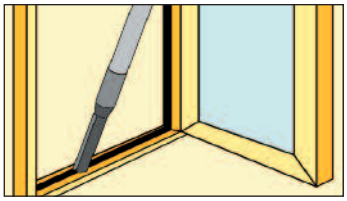
WHAT TO USE
Water at max 30°C temperature and specific detergent for the cleaning of the aluminium parts of doors and windows anodised or painted.

METRA suggested products:

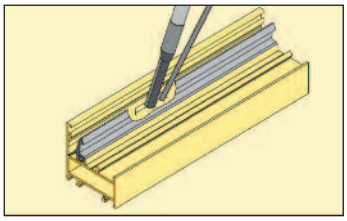
1) Mu 0455 – Kit for cleaning and maintenance of painted frames
including: Product for the regular cleaning of the painted aluminium
Specific product for the EPDM gaskets
Spray product for lubrication of the hardware

2) Mu 0456 – Kit for cleaning and maintenance of anodised frames
including: Product for the regular cleaning of the anodised aluminium
Specific product for the EPDM gaskets
Spray product for lubrication of the hardware

Cleaning of the window



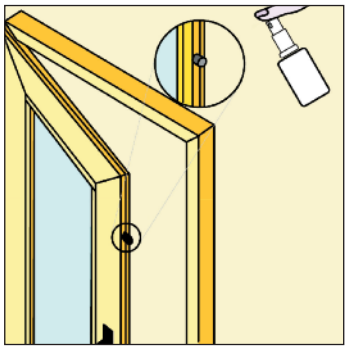
Cleaning inside the window
In order to guarantee a correct working, your window should be inspected at least once a year to check that no residue or extraneous body are in the grooves and in the slides of the frame itself. This operation prevents the eventual obstruction of the drainage holes, enabling the window to keep its performances.



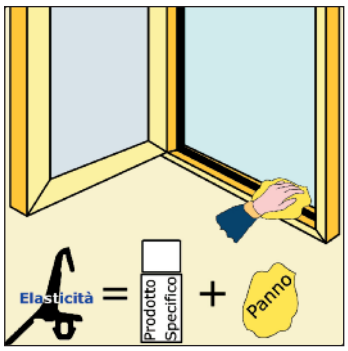
Cleaning of the drainage holes
Clear away the dust and dirt with a vacuum cleaner and, should the drainage holes be obstructed, remove the occlusion with the help of a tool similar to a rod.

Maintenance of the accessories

Apart from cleaning the profiles, it is necessary to provide for the maintenance of the weather gaskets and of the accessories and repair, if necessary, the damaged parts. All opening frames and relevant lock points must be subject to maintenance, using a silicone or teflon spray, and any wearing level must be checked.



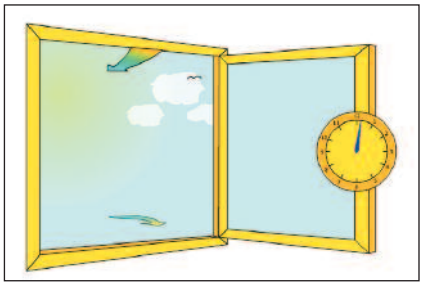
1) Spray for hardware
The opening parts and all lock points must be lubricated with oil or anti-acid grease.
The spray leaves a protective film over the treated parts, improving the movement and attenuating any possible troublesome noise.
2) Product for gaskets
Cleaning the gaskets by a cloth damped with the indicated product at least twice a year, will enable the gaskets to keep their correct elasticity.



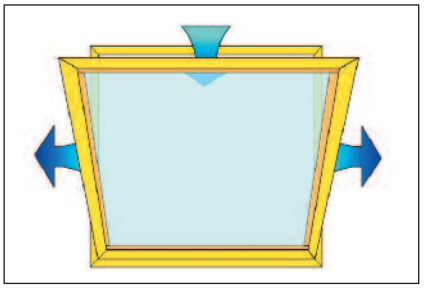
In case of damages due to negligence or insufficient maintenance, any possibility to appeal to the guarantee is excluded.
The utilisation of a non recommended product releases METRA from the responsibility of any damage caused to the frames.

Ventilation of the rooms

Your new windows Metra guarantee high performances of air and water tightness required by the specific Standards for the **energy saving.**
The lack of air exchange between indoor and outdoor can cause the increase of the relative humidity ratio of which, vice-versa, in order to limit the condensation, must be kept at a normal level, operating as per figures **A** and **B**.
Other possible sources of humidity in the houses could be:
Water boiling, food cooking, washing, shower, indoor plants, number of persons in the rooms, etc.



A) Heating on
Ventilate the rooms as per the figure many times a day for about 5 minutes.

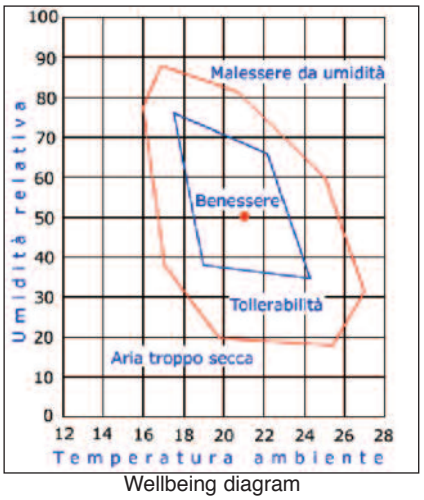


B) Heating off
Ventilate the rooms as per the figure for long time depending on the utilisation.

The humid air deposits itself on the windows and non-porous materials (ex. glass) in form of condensation and on the walls in form of eventual moulds and stagnation stains.
The condensation starts to form when the temperature of the walls in the room is lower than the temperature called “temperature of dew”.

The temperature of dew is determined by the two following factors:
-Relative humidity ratio inside the rooms
-Temperature inside the rooms

The ventilation of the rooms brings the air humidity to regular values.
By a short and repeated aeration, there is a low waste of energy and an efficient exchange of air is guaranteed.
The inhabiting wellbeing, as shown in the figure, is reached in function of the room temperature and of the relative humidity.
Example: by a room temperature of 21°C and relative humidity of 50% we reach a condition of WELLBEING.



Wellbeing diagram

GENERAL NOTES

Weight of aluminium profiles. The given weight is the nominal one, it can change according to thickness and dimensional tolerances of the profiles (EN 12020-2).

Dimensions of aluminium profiles. The given dimensions are the nominal ones, they can change according to extrusion dimensional tolerances (EN 12020-2).
This variability affects all Aluminium profiles, it can influence, event though minimally, the cutting dimensions and therefore the final dimensions of the frame.
The painting increases the thickness and concurs in varying the aluminium profiles dimensions and particularly, it reduces the space in the insertion seats of gaskets and accessories.

Cutting dimensions. The nominal cutting dimensions given in this catalogue are the exact ones. In certain circumstances, during the fabrication, they will have to be rounded off, according to precision and type of programming of the measures on the machines used in one's works.

Fabrication of the frames. We suggest, in the first production or before starting any major works, to produce a dimensional sample in order to check the assembly and the mechanical and weatherproof features of the accessories.

Length of the bars. The commercial length of the bars of this series is 6500 mm.
The ordinary glazing beads have 6000 mm length, the rounded ones have 6500 mm length.

Installation tolerances. Between the internal side of the counterframe and the external side of the sash frame we allow an installation tolerance of 6 mm. This value can be modified, in case of particular requirements, provided that all application features are considered: a double overlapping and an efficient water permeability and air tightness must be always guaranteed.

Reference of dimensions. The reference of the dimensions L and H shown in the catalogue corresponds to the one set out in the software program for the automatic elaboration of estimations and cutting lists.

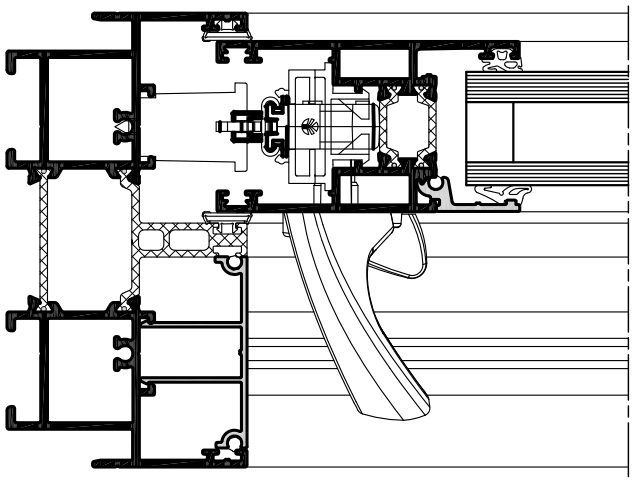
Wall installation. The description of some wall installation schemes for the frames does not have a restrictive value, it is only a suggestion, also for designers, how to solve in a simple and practical way this particular and important problem of the frames.

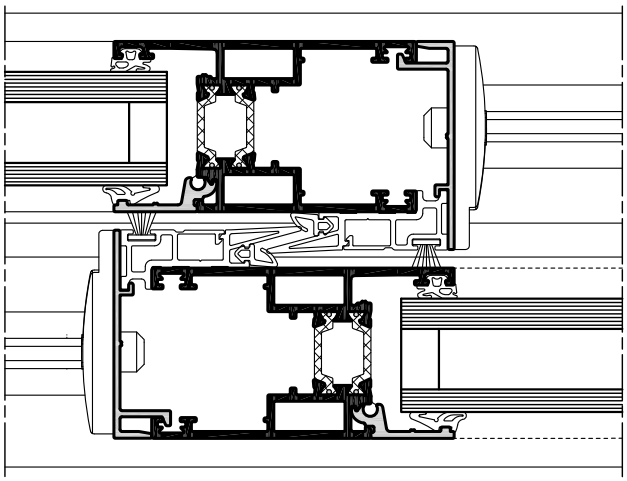
Quantity of accessories. The quantities of accessories referred in the frames fabrication tables are those prescribed and tested in order to obtain the best functionality and resistance to any stress, to which a frame is usually subjected.

Utilisation. Metra is not responsible for a utilisation of the system different from the prescription in the present catalogue.

Finishing. In order to limit the process of threadlike corrosion one must follow some important rules, such as:
- Utilisation of extruded corner cleats and staples alloy EN AW-6060
- Utilisation of stainless steel screws
- Sealing of the cut sides
- Avoiding condensation stagnation inside the frame
- Taking care during the installation

The thermal break profiles of the present building system, when painted, must go through a thermic treatment at 180°C temperature (-0°C +20°C) for 20-22 minutes.
During the whole painting process, the aluminium profiles must be duly supported in order to maintain the initial straightness and not to be subject to deformations.





Technical description of the system:

- Thermally insulated extruded profiles, alloy AW 6063 T5
- Frame 120 mm thickness
- Sash 80 mm width
- Sash load: 200 kg
- Center node 90 mm
- Multi-point locks with or without cylinder

- Typologies:
  - Fixed side sash built in the frame + one or two sliding sashes
  - Two sliding sashes
  - Four sliding sashes on two tracks
  - Fised side sashes, upper and lower, with independent frames
  - Combination with sashes from NC 65 STH series

- Machinings:
  - Frame cut:
    - 45° and junction by corner keys
    - 90° and assembly by screws
  - Sash cut at 45°, junction by corner keys and internal glass stop

- Glazing:
  - Insutating glazing 20 to 32 mm thickness

TECHNICAL SPCIFICATIONS

The windows will be manufactured with profiles extruded from aluminum alloy EN AW 6060 (EN 573-3 and EN 755-2) with temper designation EN 515.
The frame must have a total depth of 120 mm, the assembly must be done with cut at 45° and fixing of the corner ensured by aluminum corner keys plugged and/or crimped, or with cut at 90° and fixing of the corner with stainless steel screws.
The sash must have a total depth of 45 mm, the assembly must be done with cut at 45° and fixing of the corner ensured by aluminum corner keys plugged and/or crimped.
The thermal break must be obtained by the insertion of bars made of polyamide reinforced with fibreglass (Pa 6.6 GF 25) with total depth 22 mm or 38 mm (frame) and 22 mm (sash).
The mechanical blocking must be done with external stitching, with previous knurling of the aluminum seats in order to prevent from any scliding of the profile itself, in conformity with the technical guide (UEQTC) for metallic profiles windows with improved thermal performances.
Water drainage slots must be done in the lower side of the frame; this one must provide a track made of polyamide reinforced with fibreglass or made of stainless steel, for the sliding of the carriage; both of them must be replaceable.
The cut of corners of frame and sash must be sealed with material suitable to ensure the tightness.

Ventilation slots must be done in the sash.

The tightness must be ensured by specific EPDM gaskets or brush gaskets, placed along the whole perimeter of the sash and the frame.
The sliding of the sashes is done thanks to slide-only or lift-and-slide hardware.
The accessories and gaskets must be the original ones designed and produced for the system.

The windows must have air permeability, water tightness and wind load resistance performances in conformity with standards EN 12207 - 12208 - 12210 and EN 1026 - 1027 - 12211

- Air permeability: class _____
- Water tightness: class _____
- Wind load resistance: class _____

SURFACE FINISHING

The protection and finishing of the profiles surfaces must be carried out by anodising or painting.

Anodising
The anodising must be carried out in conformity with the standards ISO 7599 (Anodising of the aluminium and its alloys – General specifications for the oxide coating) on the profiles which must be submitted to a surface pre-treatment by mechanical brushing or chemical glazing, with the choice of the following available finishing:

- A1S Silver Brushed
- A1C Silver Chemical
- B7S Bronze Brushed
- B7C Bronze Chemical
- E6S Electrocolour 6 Brushed
- E6C Electrocolour 6 Chemical
- E7S Electrocolour 7 Brushed
- E7C Electrocolour 7 Chemical
- E8S Electrocolour 8 Brushed
- E8C Electrocolour 8 Chemical
- As per customer's sample

The oxide thickness must be checked in conformity with the standards ISO 2360 (Non-conductor coating on basic non-magnetic metals – Measure of the thickness of the coating and method of the induced currents).
The quality of the fixing of the oxide coating must be checked in conformity with the standards ISO 3210 (Anodising of the aluminium and its alloys – Quality valuation of the fixing of the oxide coating by the measurement of the loss of weight after immersion into phosphochromic solution).
The treatments must be guaranteed with quality label QUALANOD and carried out by a company certified ISO 9001:2000.
The type of colour and thickness of oxide will be chosen by the Board of Directors of Works.
Oxide thickness: class 10, 15, 20 microns following to the customer's requirements.
The anodising can be carried out by cold fixing or by hot fixing method.

Painting
The painting must be carried out in conformity with the quality label QUALICOAT and must be of the powder type, in the colour chosen by the Board of Directors of Works on the catalogue ALCOLORS.
Before the painting, the surface of the profiles must be treated with the following operations:

- acid degreasing at 50° C
- double washing with demineralised water
- alkaline pickling at 50° C
- double washing with demineralised water
- acid deoxidation
- double washing with demineralised water
- chromate treatment at about 30° C
- washing with demineralised water
- specific washing with demineralised water
- drying
- painting by polyester powders with electrostatic application
- polymerisation in oven at 180° C – 200°C.

In order to guarantee the duration and weatherproof of the paint coating, some check will have to be carried out during the painting cycle; the most important are:

1. Test of the temperature of polymerisation
2. Adhesion test in conformity with EN ISO 2409 (“grill cut” test)
3. Test of resistance to bending in conformity with EN ISO 1519 (bending with cylindrical spindle)
4. Test of resistance to dishing in conformity with EN ISO 1520
5. Shock resistance test in conformity with ASTM D 2794
6. Brightness test in conformity with ISO 2813 (measurement of brightness ratio of the non-metallic paints at 20°, 60°, 85° inclination)
7. Hardness test in conformity with EN ISO 2815 (hardness Buchholz)
8. Valuation of the adhesion in humid conditions with Machu Test, in conformity with UNI 9983

The painting must be carried out applying totally the prescriptions of the “Directives of the quality trademark QUALICOAT of the painted aluminium (with liquid or powder products) applied in the architecture”.
The colour will be chosen by the customer upon sample supplied by the fabricator.
The surface treatment must be carried out by plants certified by the quality trademarks QUALANOD for the anodising and QUALICOAT for the painting, by a Company certified ISO 9001:2000.
The powders employed must be type-tested QUALICOAT and be produced by Companies certified ISO 9001:2000.
The finishing can be checked in conformity with the prescriptions of the Directives of the quality trademarks QUALANOD and QUALICOAT.

UTILISATION LIMITS

When the designer or the fabricator calculate the maximum dimensions of the curtain wall and frames, they must consider and evaluate not only the dimensions and inertia of profiles, but also the application and meteorological factors such as the height above the ground, the exposure to rain and wind speed in the area.

CERTIFICATIONS

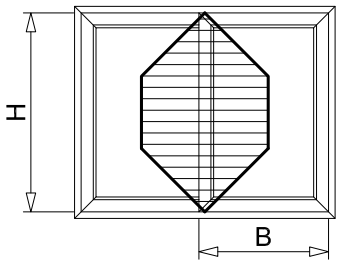
CERTIFICATIONS

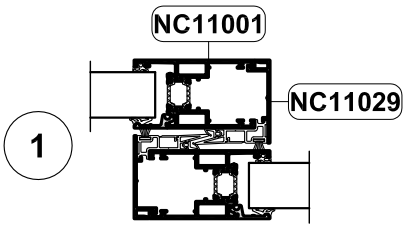
STATIC LIMITS
PRESSURE 400 Pa

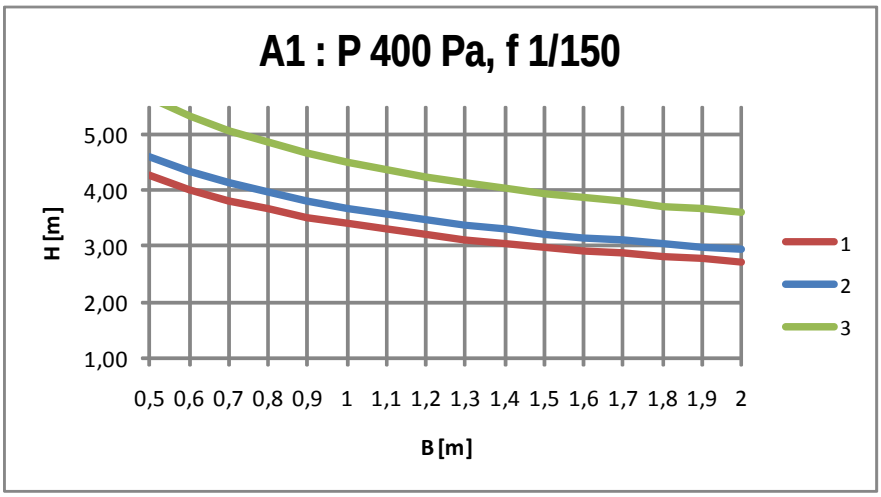
P = PRESSURE

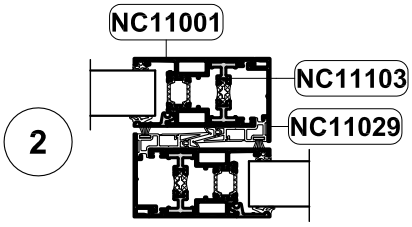
f = DEFLECTION

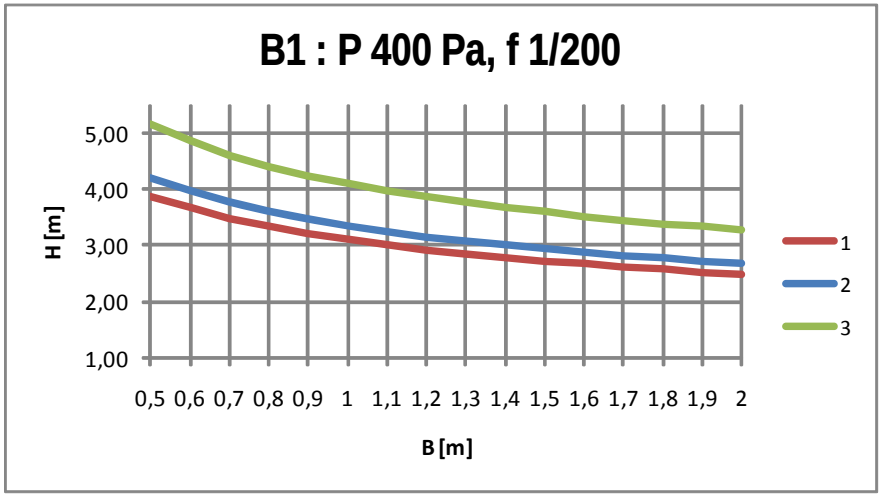
MAX LOAD 200 kg
PER SASH

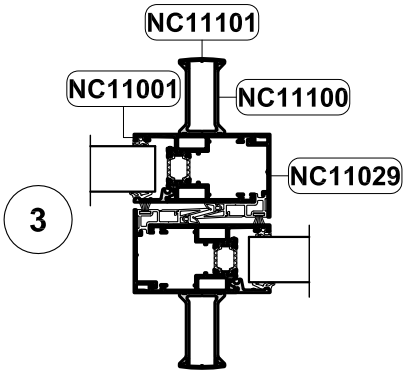


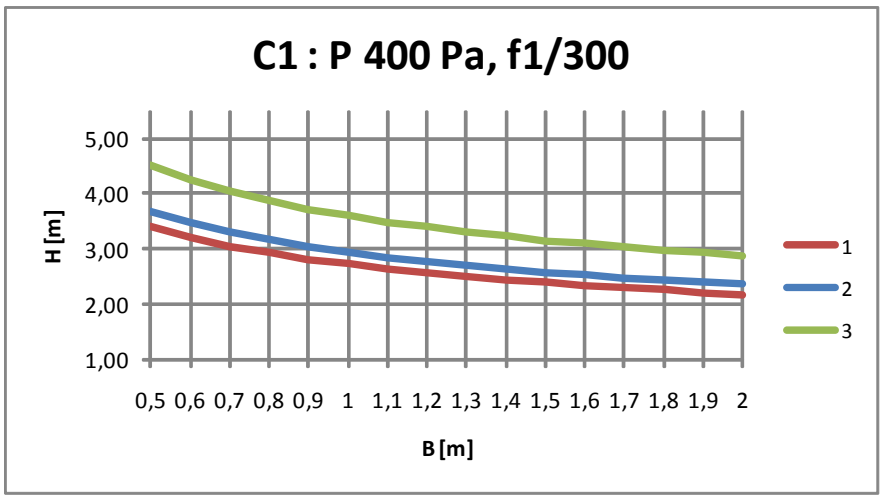










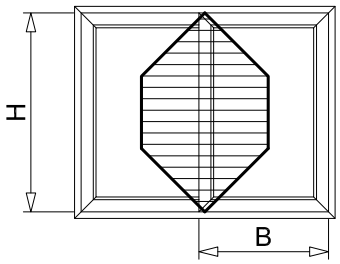


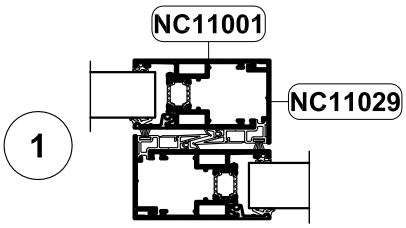
STATIC LIMITS
PRESSURE 800 Pa

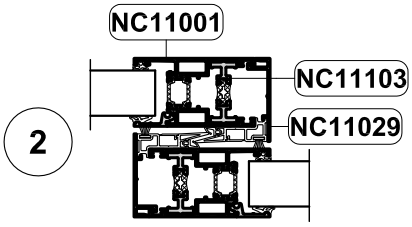
P = PRESSURE

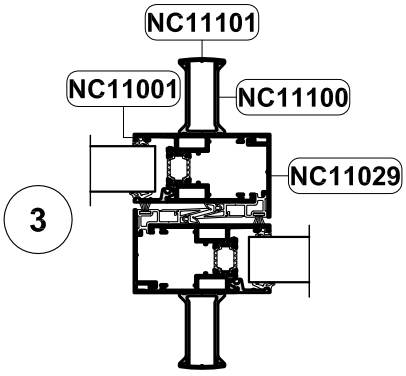
f = DEFLECTION

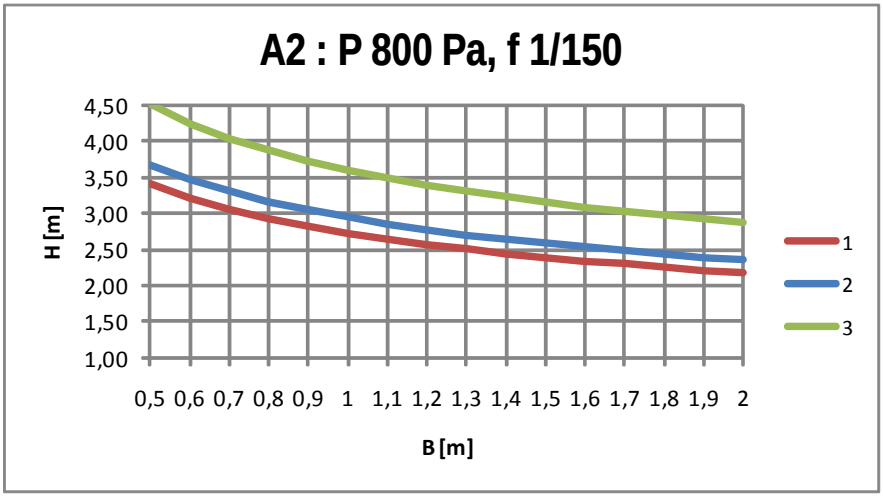
MAX LOAD 200 kg
PER SASH

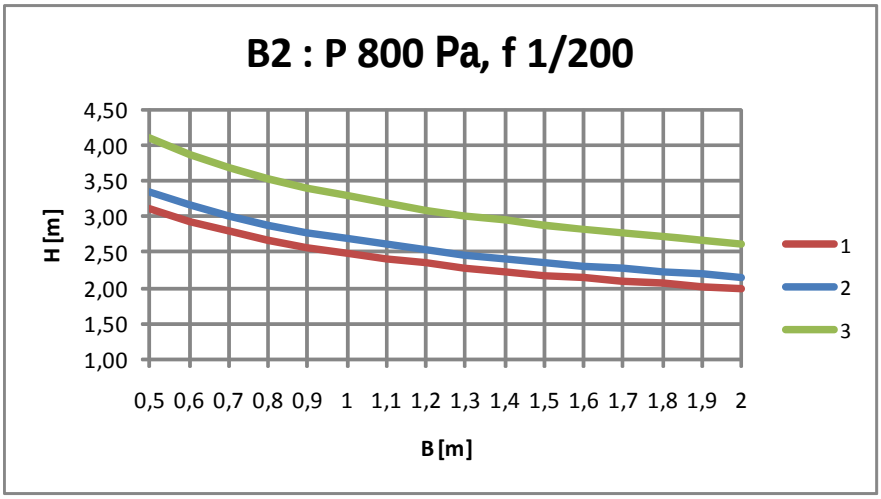


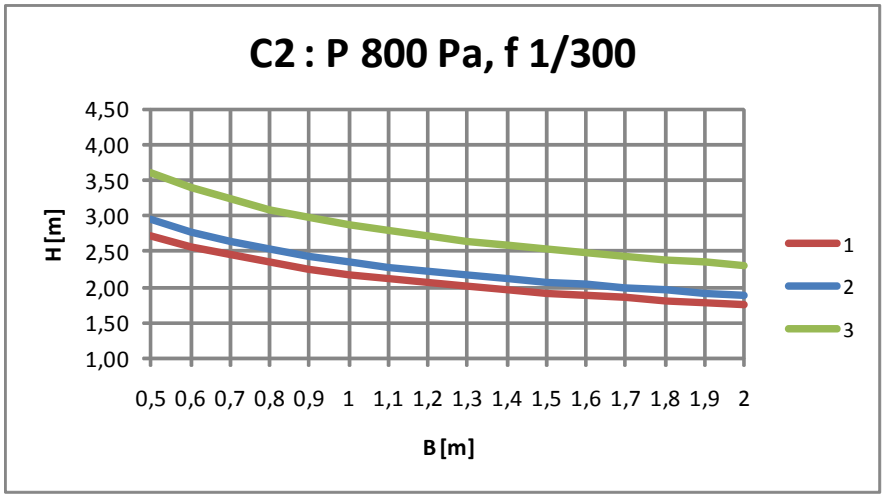










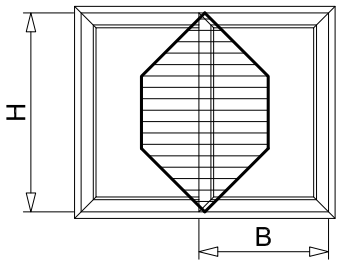


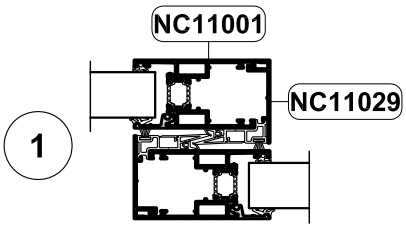
STATIC LIMITS
PRESSURE 1200 Pa

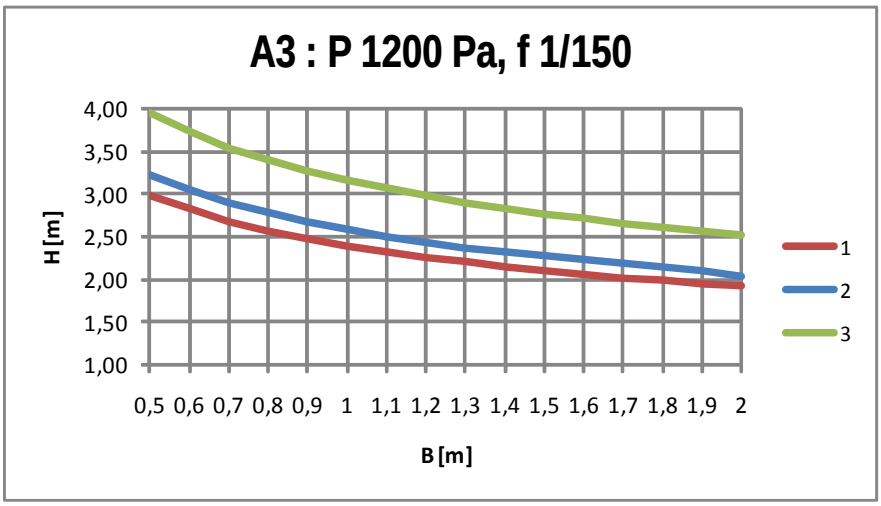
P = PRESSURE

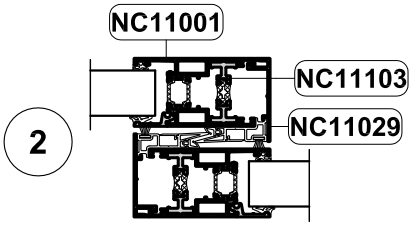
f = DEFLECTION

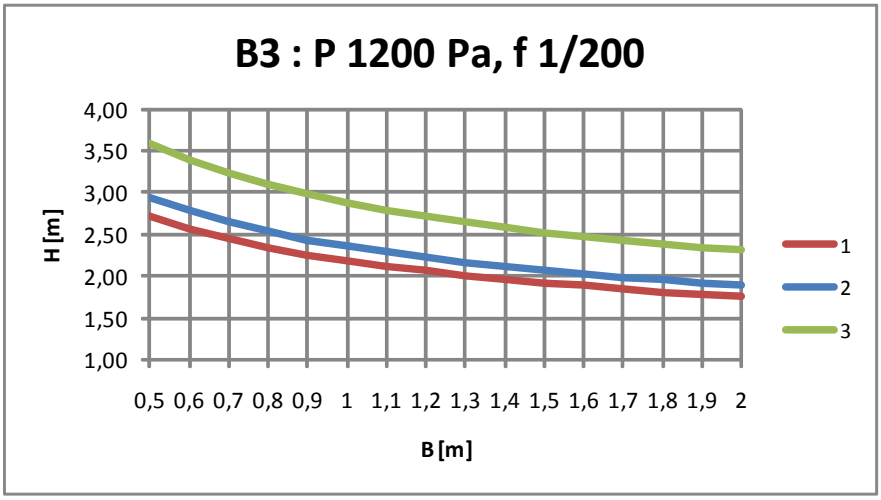
MAX LOAD 200 kg
PER SASH

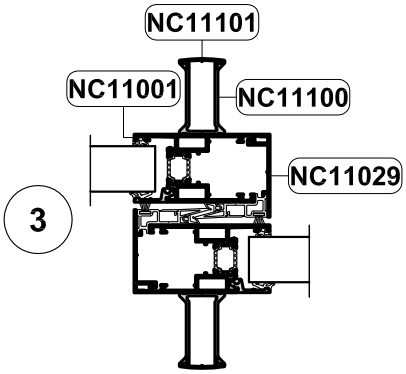


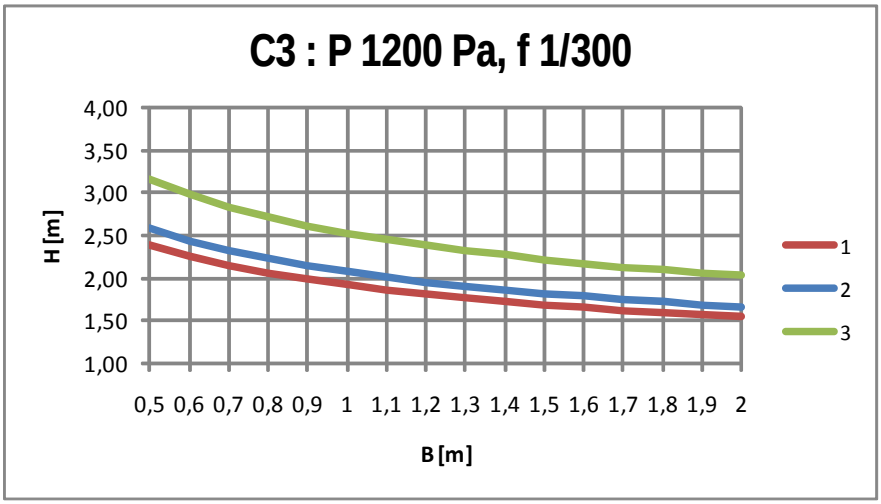








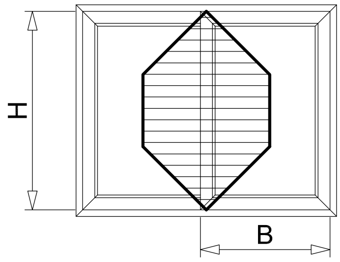




STATIC LIMITS
PRESSURE 1600 Pa

P = PRESSURE
f = DEFLECTION

MAX LOAD 200 kg
PER SASH



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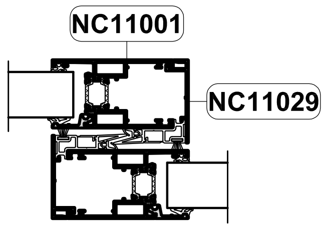
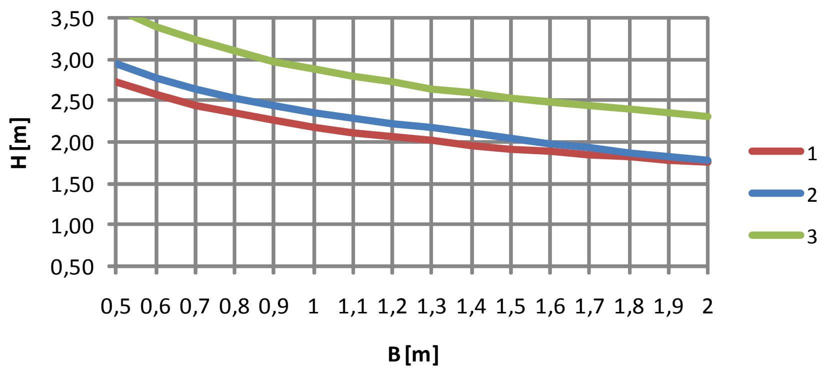


A4 : P 1600 Pa, f 1/150



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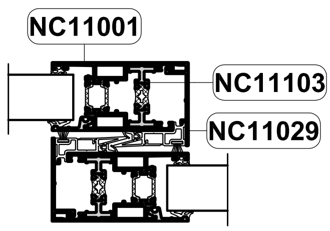
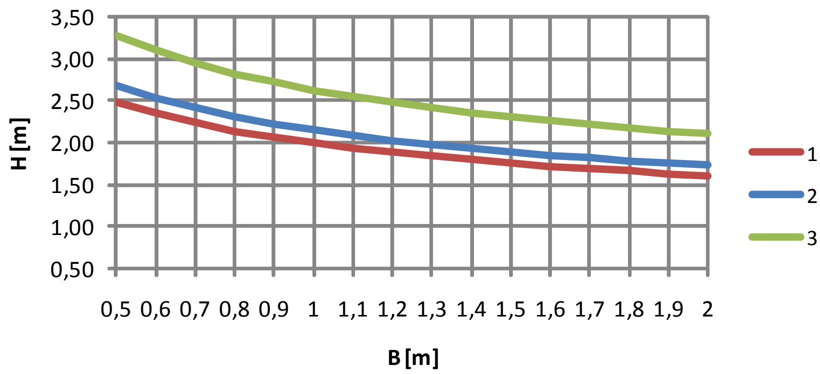


B4 : P 1600 Pa, f1/200



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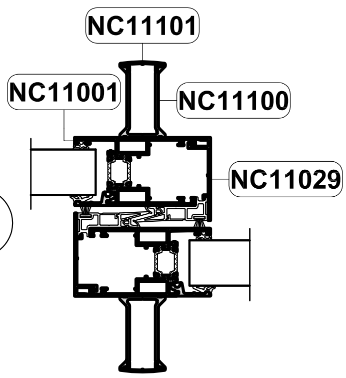
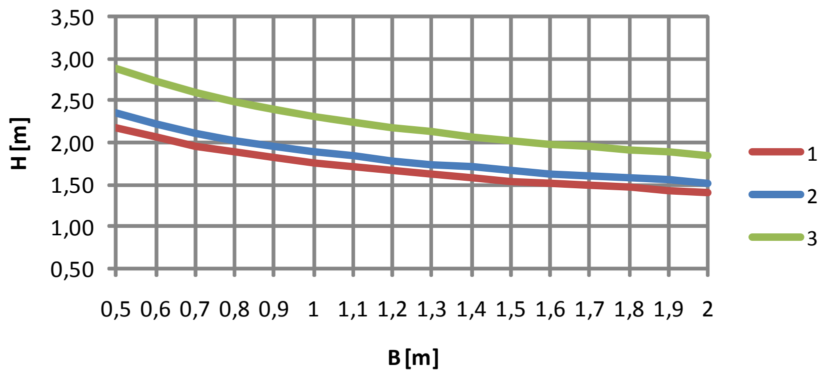


C4 : P 1600 Pa, f 1/300

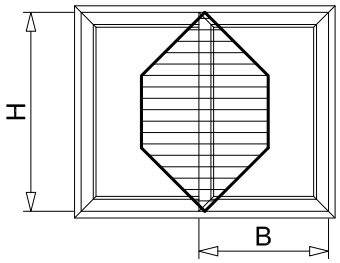


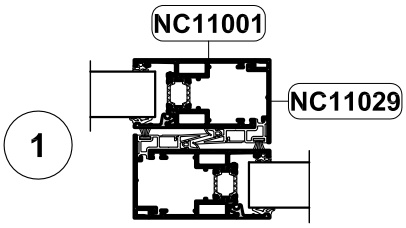
STATIC LIMITS
PRESSURE 2000 Pa

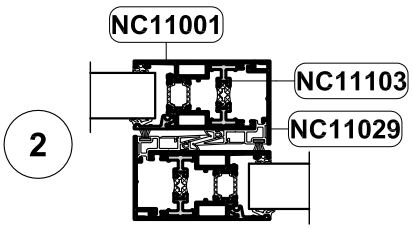
P = PRESSURE

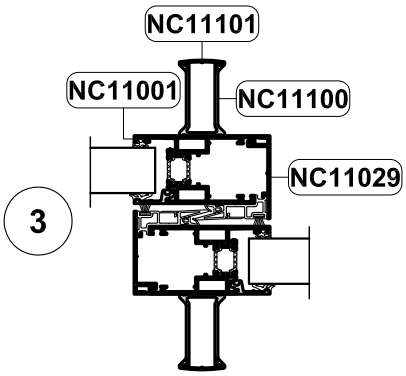
f = DEFLECTION

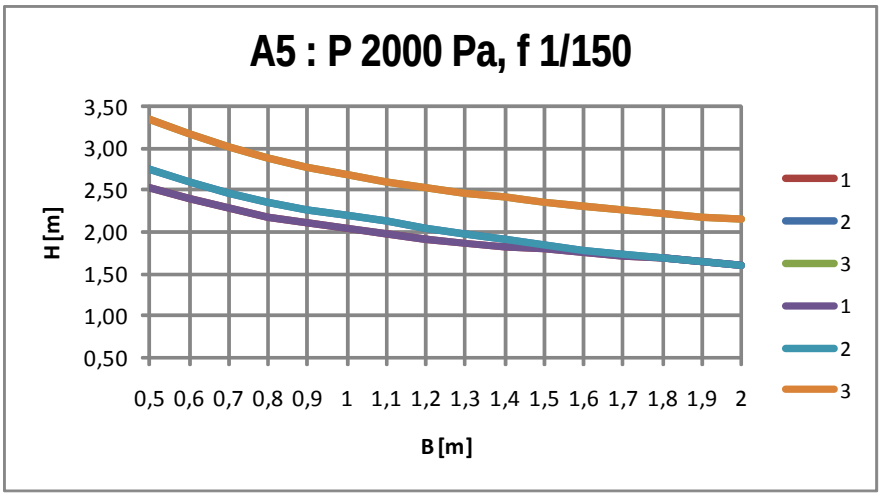
MAX LOAD 200 kg
PER SASH

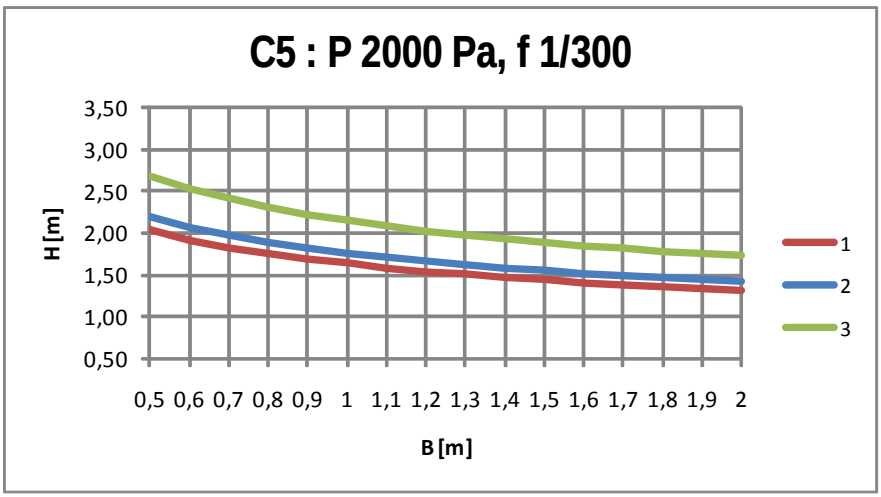


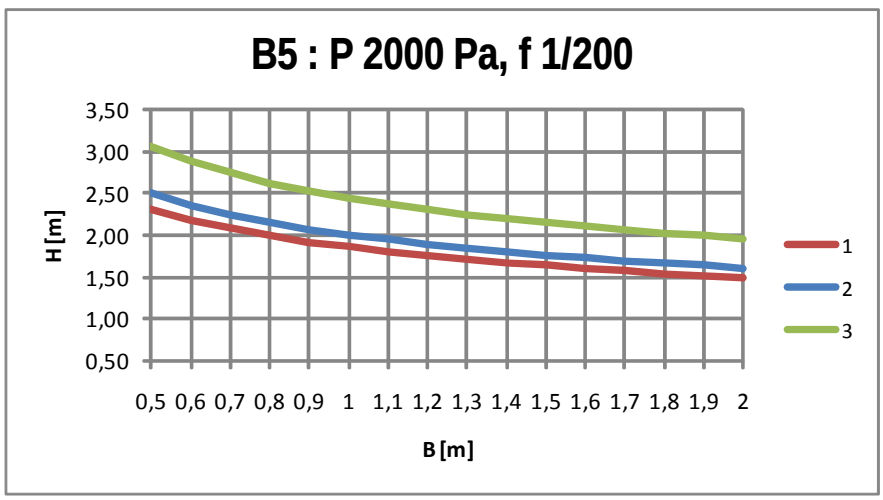


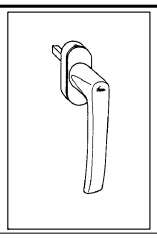
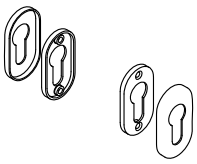
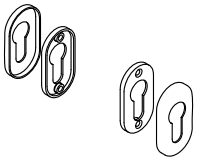
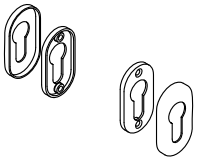
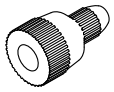
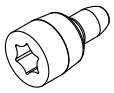
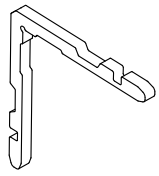


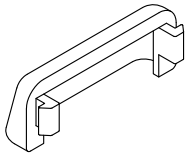
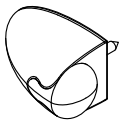
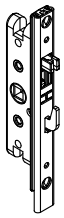


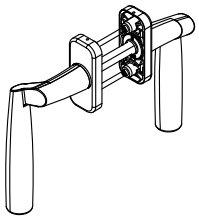


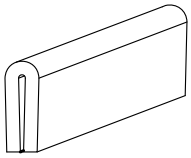
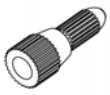
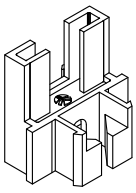


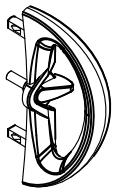


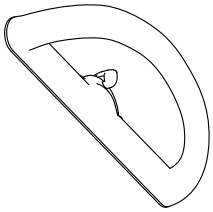
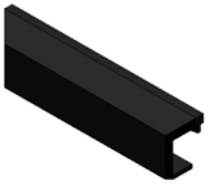
CODE	DRAWING	UTILIZATION
Ma 0827		Long handle Material: Aluminium
Ma 0962		Cylinder cover Material: Zinc alloy
Ma 0963		Cylinder cover Material: Zinc alloy
Ma 0964		Cylinder cover Material: Zinc alloy
Ma 2482		Pin 8x11mm Material: Zinc alloy
Ma 2410		Pin for corner key Material: Zinc alloy
Ma 2411		Screw for corner key Material: Zinc alloy
Ma 2492		Crimping corner key Material: Aluminium

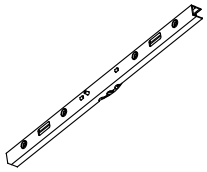
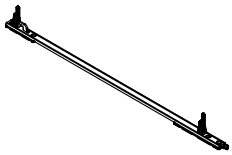
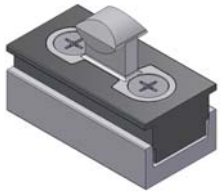
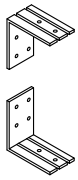
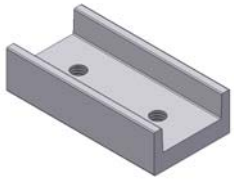
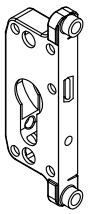
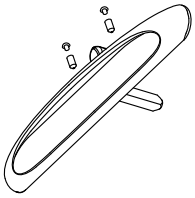
CODE	DRAWING	UTILIZATION
Ma 4409		Water drainage Material: Nylon
Ma 5521		Water drainage bush with membrane Materiale: Nylon
Ma 6340		Vent stop plug Materiale: Nylon/Rubber
Ma 6346		Hardware 1 closing point Material: Stainless steel
Ma 6347		Hardware 2 closing points Material: Stainless steel
Ma 6348		Hardware 3 closing points Material: Stainless steel
Ma 6349		Hardware 3 closing points pre-set for cylinder Material: Stainless steel

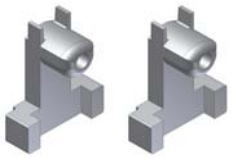
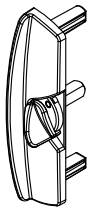
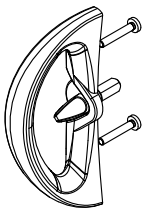
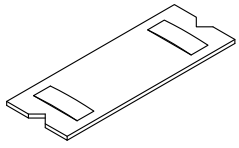
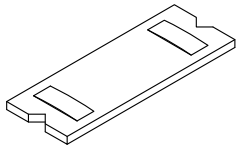
CODE	DRAWING	UTILIZATION
Ma 6351 D/S		Handle mod. Estivale Material: Alluminium
Ma 6353		Handle mod. Estivale Material: aluminium
Ma 6359		Wall adjustment Materiale: Nylon
Ma 6361		Hardware 1 closing point pre-set for cylinder Material: Various
Ma 6371		Handle mod. Hera Material: Zinc alloy
Ma 6500		Corner key Material: Zinc alloy
Ma 6501		Alignment corner key Material: Nylon
Ma 6502		Corner key Material: Nylon

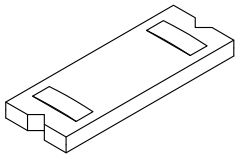
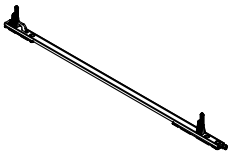
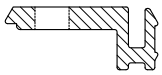
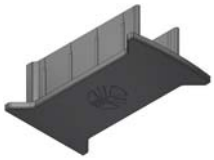
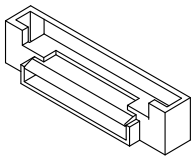
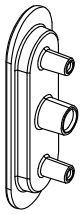
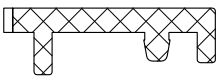
CODE	DRAWING	UTILIZATION
Ma 6503		Alignment corner key Material: Nylon
Ma 6504		Alignment corner key Material: Nylon
Ma 6506		Track (3,2 m bar) Material: Various
Ma 6507		Shim for lock Material: Zinc alloy
Ma 6508		Lock catch Material: Zinc alloy
Ma 6509		Screw 4x14mm Material: Zinc alloy
Ma 6510		Shaped plug Material: Zinc alloy
Ma 6511		Shim for lock Material: Nylon

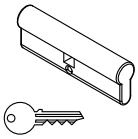
CODE	DRAWING	UTILIZATION
Ma 6512		Kit lower caps Material: Nylon
Ma 6513		Kit caps for sash Material: Nylon
Ma 6516		Wrong movement stop Material: Nylon
Ma 6517		Anti-lifting cap Material: Nylon
Ma 6518		Lock catch Materiale: Ixef
Ma 6519		Lock catch small Materiale: Ixef
Ma 6520		Kit caps for sash junction Material: Aluminium
Ma 6521		Window handle Cassiopée Material: Various

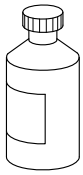
CODE	DRAWING	UTILIZATION
Ma 6522		Window handle Marina combined with internal concave handle Material: EPDM
Ma 6523		Pull handle EOS MP Material: Various
Ma 6524		Cap for Ma6517 Material: Various
Ma 6525		Carriage (100 kg) Material: Nylon
Ma 6527		Caps for Mg150p Material: Nylon
Ma 6528		Water drainage cap Material: Nylon
Ma 6529		Lock 2 or 4 closing points Material: Various

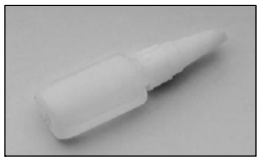
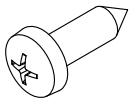
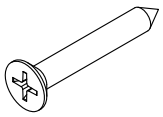
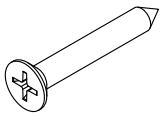
CODE	DRAWING	UTILIZATION
Ma 6530		Lock 2 closing points Materiale: Various
Ma 6531		Lock extension Material: Stainless steel
Ma 6532		Lock catch kit Material: Various
Ma 6533		U-bolt kit for fixed frame Material: Aluminium
Ma 6534		Lock catch fixing plate Material: Various
Ma 6535		Cylinder holder for Ma6529 Material: Various
Ma 6536		Glass shimming base Material: Nylon
Ma 6541		Pull handle EOS mini Material: Various

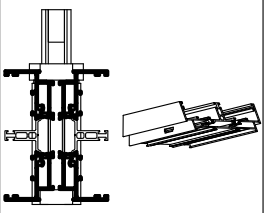
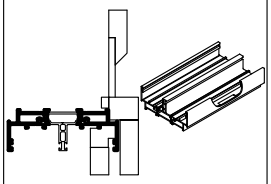
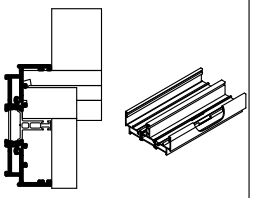
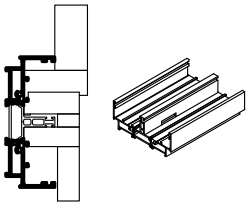
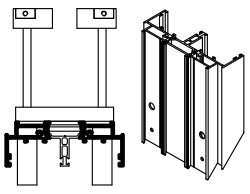
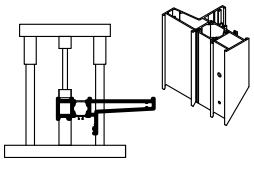
CODE	DRAWING	UTILIZATION
Ma 6542		Window handle Marina special fixing Material: Nylon
Ma 6544		Window handle Marina fixing kit Material: Vari
Ma 6547		Window handle Marina single fixing Materiale: Various
Ma 6549		Window handle Athena Material: Various
Ma 6550		External window handle Cassiopée Material: Various
Ma 6551		External window handle Athena Material: Nylon
Ma 6553		Glass shim 100x32x1 mm Material: Nylon
Ma 6554		Glass shim 100x32x2 mm Material: Nylon

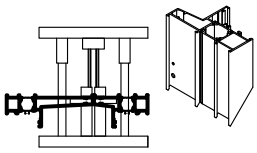
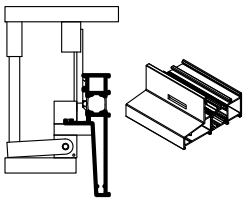
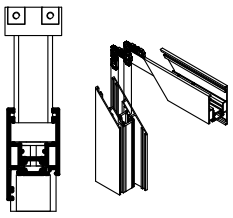
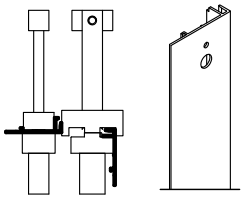
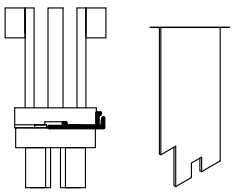
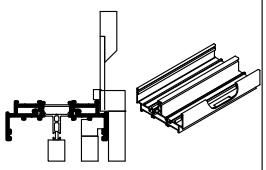
CODE	DRAWING	UTILIZATION
Ma 6555		Glass shim 100x32x4 mm Material: Nylon
Ma 6556		Lower extension for lock Material: Nylon
Ma 6557		Connection piece for upper fixed frame Material: Nylon
Ma 6579		Cap for NC11100 Material: Nylon
Ma 6580		Water drainage valve Material: Abs
Ma 6581		Concave handle Material: Nylon
Ma 7630		Glass shimming base Material: Nylon
Ma 7634		Water drainage cap with membrane Material: Nylon

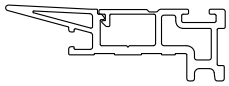
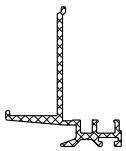
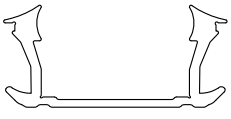
CODE	DRAWING	UTILIZATION
Ma 9142		Upper track tightness kit Material: Vari
Ms 3003		Cylinder 70.8 mm Material: Vari

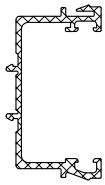
CODE	DRAWING	UTILIZATION
Mu 0196		Milling group for frame NC70201 Material:
Mu 0440		Bi-component sealant Material:
Mu 0441		Manual gun for bi-component Mu 0440 Material:
Mu 0442		Pneumatic gun for bi-component Mu 0440 Material:
Mu 0443		Mixer for Mu 0440 Material:
Mu 0467		Primer Material:
Mu 0471		Trasparent silicone Material:
Mu 0481		Low modulus neutral silicone Material:

CODE	DRAWING	UTILIZATION
Mu 0500		Glue for gaskets Material:
Mu 0501		Sealant for Mu 3200 Material:
Mu 0706		Screw 4,8 x 16 Material: Stainless steel
Mu 0740		Screw 4 x 40 Material: Stainless steel
Mu 0741		Screw 4.8 x 45 Material: Stainless steel
Mu 2102		Plugging crimping machine with automatic loader Material: Various
Mu 2103		Pneumatic hammer Material: Various

CODE	DRAWING	UTILIZATION
Mu 4000		Punching machine power unit 4 punch Material: Various
Mu 4001		Punching machine power unit 2 punch Material: Various
Mu 4100		Punch unit Frame drainage Materiale: Various
Mu 4101		Punch unit Frame drainage Materiale: Various
Mu 4102		Punch unit Frame drainage Materiale: Various
Mu 4103		Punch unit Frame drainage Materiale: Various
Mu 4104		Punch unit Holes for corner key Materiale: Various
Mu 4107		Punch unit Holes for corner key Materiale: Various

CODE	DRAWING	UTILIZATION
Mu 4108		Punch unit Holes for corner key Materiale: Various
Mu 4109		Punch unit Frame drainage Materiale: Various
Mu 4110		Punch unit Holes for corner key Materiale: Various
Mu 4117		Punch unit Additional profile machining Material: Various
Mu 4118		Punch unit Additional profile machining Material: Various
Mu 4134		Punch unit Frame drainage Materiale: Various

CODE	SECTION	UTILIZATION
Mg 150p		Spacer for central junction Materiale: PVC
Mg 151d		Gasket for Mg 150p Materiale: EPDM
Mg 152tp		Frame gasket for sliding Material: Elaprene
Mg 153d		Gasket for glass stop Materiale: EPDM
Mg 157p		Spacer for small central junction Materiale: PVC
Mg 158d		Gasket for glass 31-32 mm Material: EPDM
Mg 159d		Gasket for glass 29-30 mm Material: EPDM
Mg 160d		Gasket for glass 27-28 mm Material: EPDM

CODE	SECTION	UTILIZATION
Mg 161d		Gasket for glass 25-26 mm Material: EPDM
Mg 162d		Gasket for glass 23-24 mm Material: EPDM
Mg 165p		Shim for fixed sash Materiale: Pvc
Mg 166s		Frame brush "trifin" Material: Polypropilene
Mg 204s		Brush 7x7 mm Material: Polypropilene
Mg 386d		External gasket for glass Material: EPDM
Mg 612d		Internal gasket for glass Material: EPDM
Mg 613d		Internal gasket for glass Material: EPDM

CODE	SECTION	UTILIZATION
Mg 614d		Internal gasket for glass Materiale: EPDM
Mg 661s		Brush for Mg 150p Materiale: Polypropilene
Mg 761d		External gasket for glass Materiale: EPDM

CODE	SECTION	UTILIZATION

PROFILE CLASS

What is the Profile Class?

Is the fastest way to know
if a shape is available for production

How many classes do we have?

Y

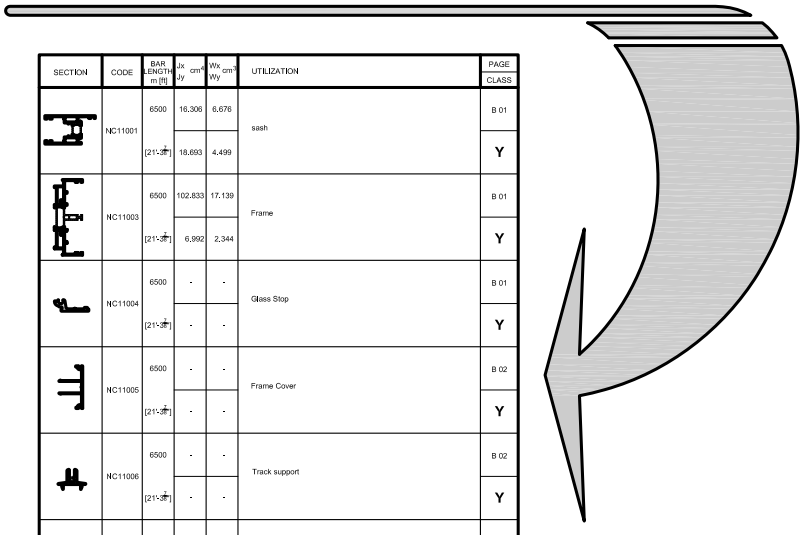
1. Class Y: Extrusion die available at Metra Systems.
   Profiles available on short term
   Minimum quantities requiered
   Please verify term and conditions with
   Metra Systems sales department

N

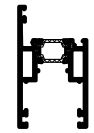
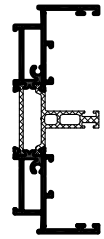
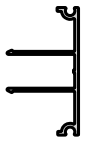
2. Class N: Extrusion die is not available at Metra Systems.
   Please verify term and conditions with
   Metra Systems sales department

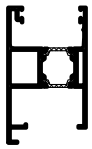
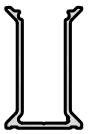
Where do I see the Profile Class?

At the Profile Chart - Group A (next page)



SECTION	CODE	BAR LENGTH m [ft]	Jx cm⁴ / Jy	Wx cm³ / Wy	UTILIZATION	PAGE / CLASS
	NC11001	6500 [21-3/8']	16.306 / 18.693	6.676 / 4.499	sash	B 01 / Y
	NC11003	6500 [21-3/8']	102.833 / 6.992	17.139 / 2.344	Frame	B 01 / Y
	NC11004	6500 [21-3/8']	- / -	- / -	Glass Stop	B 01 / Y
	NC11005	6500 [21-3/8']	- / -	- / -	Frame Cover	B 02 / Y
	NC11006	6500 [21-3/8']	- / -	- / -	Track support	B 02 / Y
	NC11029	6500 [21-3/8']	- / -	- / -	Sash Interlock	B 03 / Y

SECTION	CODE	BAR LENGTH m [ft]	Ix cm^4 / Iy $[in^4]$	Sx cm^3 / Sy $[in^3]$	UTILIZATION	PAGE / CLASS
	NC11001	6500	18.693 [0.449]	4.499 [0.275]	sash	B 01
		[21'-3 7/8"]	16.306 [0.392]	6.676 [0.407]		Y
	NC11003	6500	104.449 [2.508]	17.408 [1.062]	Frame	B 01
		[21'-3 7/8"]	7.282 [0.175]	2.421 [0.148]		Y
	NC11004	6.096	-	-	Glass Stop	B 02
		[20]	-	-		Y
	NC11005	6500	-	-	Frame Cover	B 02
		[21'-3 7/8"]	-	-		Y
	NC11006	6500	-	-	Track support	B 02
		[21'-3 7/8"]	-	-		Y
	NC11007	6.096	-	-	Glass Stop	B 03
		[20]	-	-		Y
	NC11029	6500	-	-	Sash Interlock	B 03
		[21'-3 7/8"]	-	-		Y

SECTION	CODE	BAR LENGTH m [ft]	Ix cm^4 Iy $[in^4]$	Sx cm^3 Sy $[in^3]$	UTILIZATION	PAGE / CLASS
	NC11052	6500	31.716 [0.762]	6.506 [0.397]	Mullion	B 04
		[21'-3 7/8"]	26.67 [0.641]	9.738 [0.594]		Y
	NC11070	6500	53.396 [1.283]	10.146 [0.619]	Frame	B 04
		[21'-3 7/8"]	10.644 [0.256]	2.656 [0.162]		Y
	NC11100	6.096	6.751 [0.162]	2.373 [0.145]	Reinforcement	B 05
		[20]	2.562 [0.062]	1.706 [0.104]		Y
	NC11101	6500	-	-	Frame Cover	B 05
		[21'-3 7/8"]	-	-		Y
	NC11107	6500	-	-	Complementary profile	B 05
		[21'-3 7/8"]	-	-		Y
	NC70195	6500	5.351 [0.129]	2.609 [0.159]	Reinforcement	B 06
		[21'-3 7/8"]	0.382 [0.01]	0.444 [0.027]		Y
	NC70201	6500	137.783 [xxxx]	22.964 [xxxx]	Frame	B 06
		[21'-3 7/8"]	19.501 [xxxx]	5.228 [xxxx]		Y

	PERIMETER		I_{X} cm^4 / I_{Y} [in^4]	S_{X} cm^3 / S_{Y} [in^3]	USE
	436 [17.16] mm [in]		18.693 [0.449]	4.499 [0.275]	
	EXP. SURFACE				
NC11001	152 [5.98] mm [in]		16.306 [0.392]	6.676 [0.407]	SASH

CORNER KEYS

Crimped version

A	B	C	D
Ma 6503	Ma 6502	Ma 6504	

Hammered Pin version

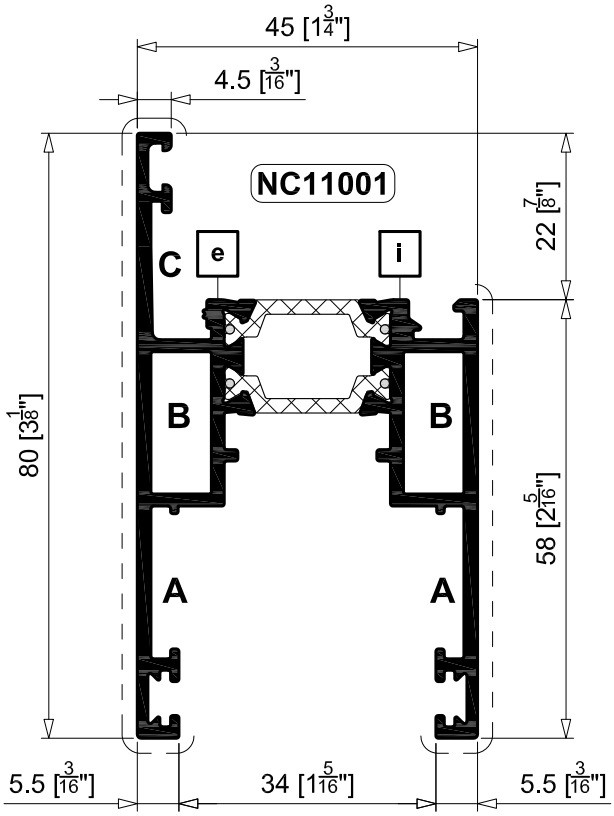
A	B	C	D
Ma 6503	Ma 6502	Ma 6504	
	Pin Ma 6510		

Screwed Pin version

A	B	C	D
Ma 6503	Ma 6502	Ma 6504	
	Pin Ma 6509		

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC11000	207 [8.15]	63 [2.48]
e	NC11012	266 [10.47]	89 [3.50]
	966605		



	PERIMETER		I_{X} cm^4 / I_{Y} [in^4]	S_{X} cm^3 / S_{Y} [in^3]	USE
	591 [23.27] mm [in]		104.449 [2.508]	17.408 [1.062]	
	EXP. SURFACE				
NC11003	104 [4.09] mm [in]		7.282 [0.175]	2.421 [0.148]	FRAME

CORNER KEYS

Crimped version

A	B	C	D
Ma 6500	Ma 6501		

Hammered Pin version

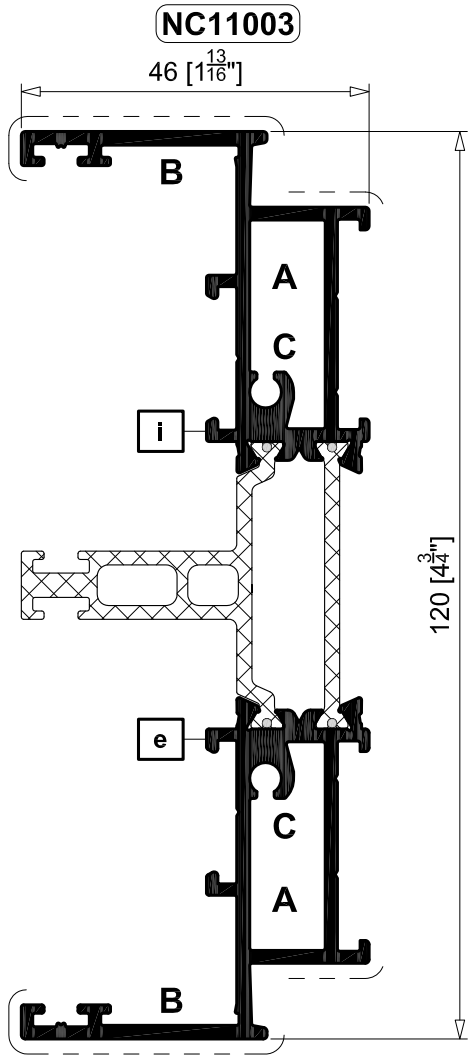
A	B	C	D
Ma 6500	Ma 6501		
Pin Ma 2482			

90° assembly version

A	B	C	D
		Mu 0541	

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC11002	258 [10.16]	52 [2.05]
e	NC11002	258 [10.16]	52 [2.05]
	343800		
	327800		

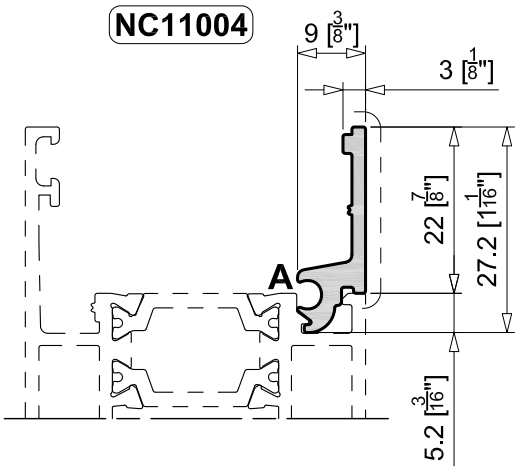


mm [inches]

SCALE 1:1

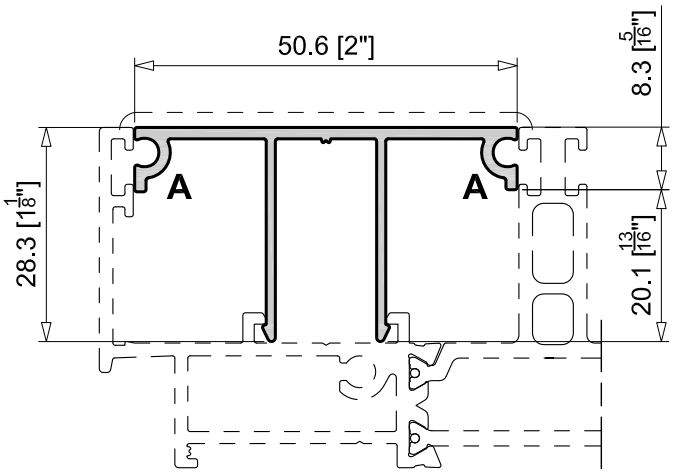
NC11004

	PERIMETER		I_X cm^4 I_Y [in^4]	S_X cm^3 S_Y [in^3]	USE
NC11004	78 [3.07]	mm [in]	- -	- -	GLASS STOP
	EXP. SURFACE 23 [0.91]	mm [in]			
GASKET					
Mg 153d	A	B	C	D	



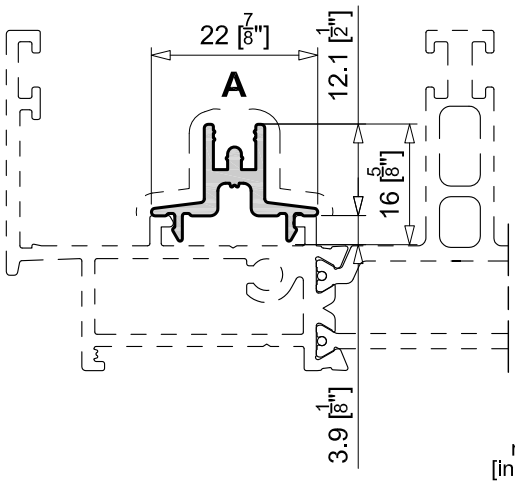
NC11005

	PERIMETER		I_X cm^4 I_Y [in^4]	S_X cm^3 S_Y [in^3]	USE
NC11005	243 [9.57]	mm [in]	- -	- -	FRAME COVER
	EXP. SURFACE 51 [2.01]	mm [in]			
GASKET					
Mg 153d	A	B	C	D	



NC11006

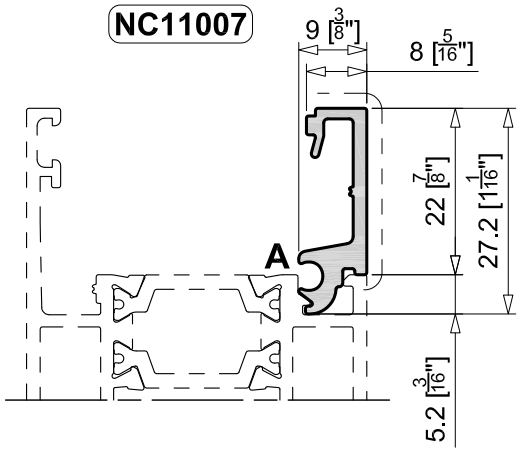
	PERIMETER		I_X cm^4 I_Y [in^4]	S_X cm^3 S_Y [in^3]	USE
NC11004	106 [4.17]	mm [in]	- -	- -	TRACK
	EXP. SURFACE 38 [1.50]	mm [in]			
TRACK					
Mg 153d	A	B	C	D	



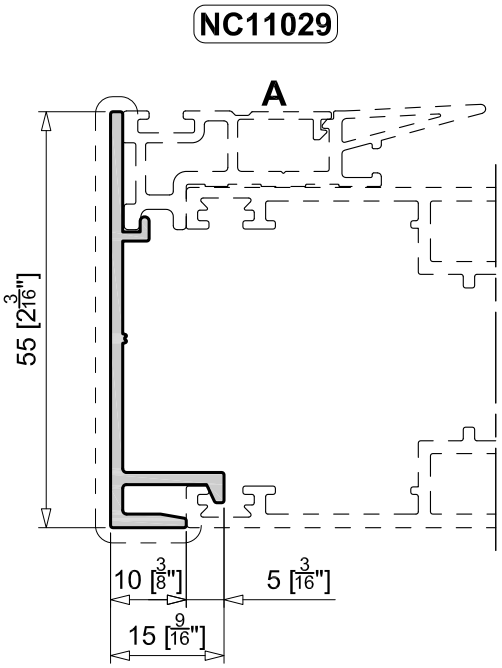
mm [inches]

SCALE 1:1

	PERIMETER			I_{X} cm^4 I_{Y} [in^4]	S_{X} cm^3 S_{Y} [in^3]	USE
NC11007	98 [3.86]	mm [in]		- -	- -	GLASS STOP
	EXP. SURFACE					
	29 [1.14]	mm [in]				
GASKET						
Mg 153d	A		B	C		D

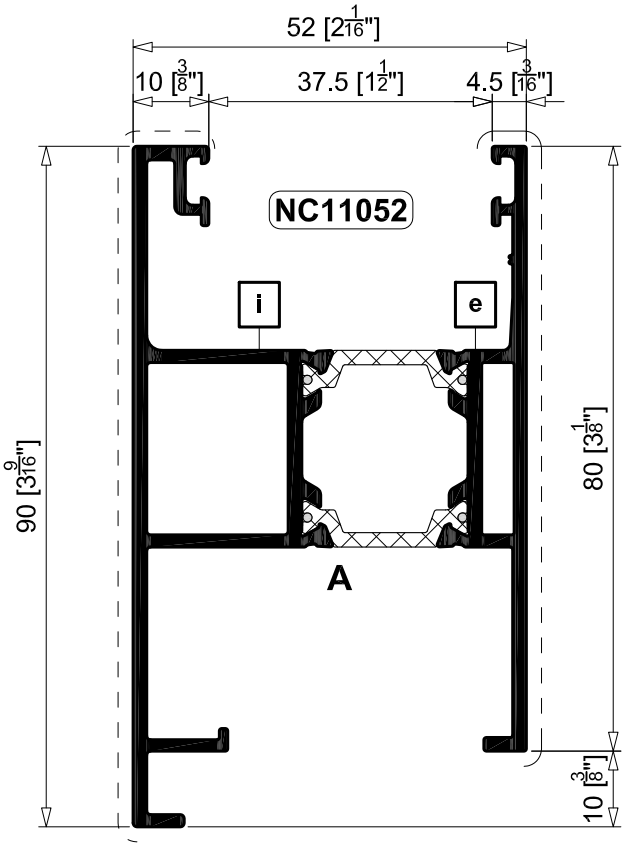


	PERIMETER			I_{X} cm^4 I_{Y} [in^4]	S_{X} cm^3 S_{Y} [in^3]	USE
NC11029	170 [6.69]	mm [in]		- -	- -	COMPLEMENTARY PROFILE
	EXP. SURFACE					
	65 [2.56]	mm [in]				
SPACER FOR CENTRAL JUNCTION						
Mg 150P	A		B	C		D



mm
[inches]

SCALE 1:1



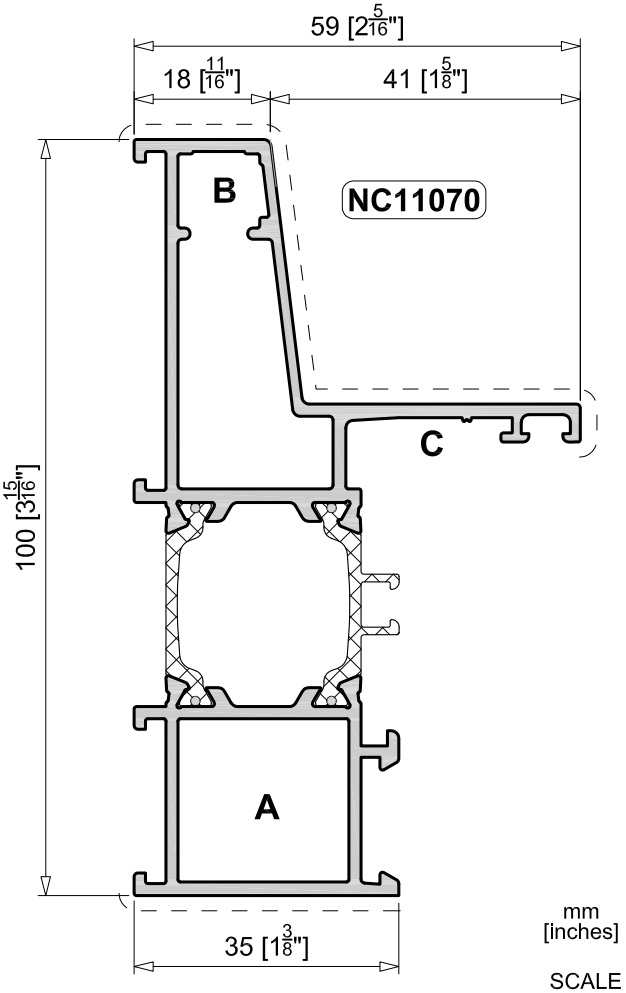
	PERIMETER		I_X cm^4 / I_Y [in^4]	S_X cm^3 / S_Y [in^3]	USE
NC11052	489 [19.25]	mm [in]	31.716 [0.762]	6.508 [0.397]	MULLION
	EXP. SURFACE 197 [7.76]	mm [in]	26.67 [0.641]	9.738 [0.594]	

CLIP ANGLE

A	B	C	D
Ma 6533			

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC11051	325 [12.80]	107 [4.21]
e	NC11050	227 [8.94]	90 [3.54]
	966605		



	PERIMETER		I_X cm^4 / I_Y [in^4]	S_X cm^3 / S_Y [in^3]	USE
NC11070	421 [16.58]	mm [in]	53.396 [1.283]	10.146 [0.619]	FRAME
	EXP. SURFACE 129 [5.08]	mm [in]	10.644 [0.256]	2.656 [0.162]	

CORNER KEYS

Crimped version

A	B	C	D
Ma 7751	Ma 7756	Ma 7571	

Hammered Pin version

A	B	C	D
Ma 7751	Ma 7756	Ma 7571	
Pin Ma 2410	Pin Ma 8250		

Screwed Pin version

A	B	C	D
Ma 7751	Ma 7756	Ma 7571	
Pin Ma 2411	Pin Ma 8250		

COMPONENTS

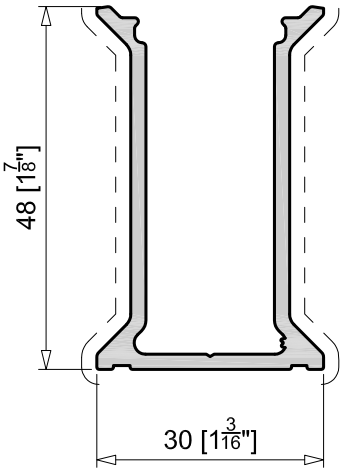
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC11069	179 [7.05]	35 [1.38]
e	NC11068	273 [10.75]	94 [3.70]
	346600		
	346700		

mm [inches]

SCALE 1:1

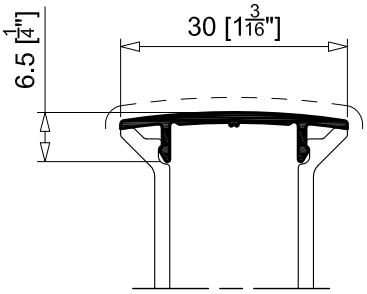
NC11100

	PERIMETER			I_{X} cm^4 I_{Y} [in^4]	S_{X} cm^3 S_{Y} [in^3]	USE
NC11100	257 [10.12]	mm [in]		6.751 [0.162]	2.373 [0.145]	COMPLEMENTARY PROFILE
	EXP. SURFACE					
	103 [4.06]	mm [in]		2.562 [0.062]	1.706 [0.104]	



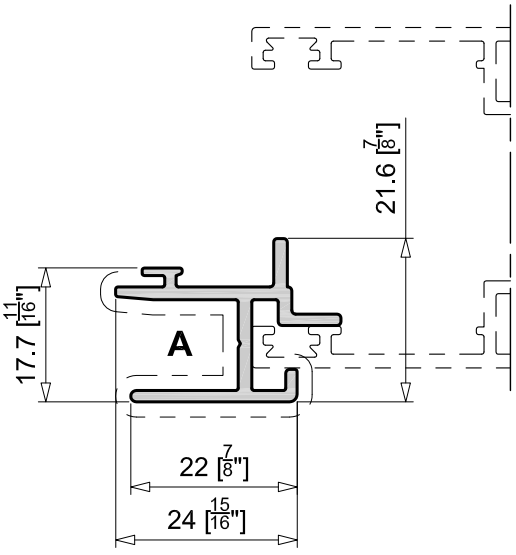
NC11101

	PERIMETER			I_{X} cm^4 I_{Y} [in^4]	S_{X} cm^3 S_{Y} [in^3]	USE
NC11101	82 [3.23]	mm [in]		- -	- -	COMPLEMENTARY PROFILE
	EXP. SURFACE					
	32 [1.26]	mm [in]				



NC11107

	PERIMETER			I_{X} cm^4 I_{Y} [in^4]	S_{X} cm^3 S_{Y} [in^3]	USE
NC11107	163 [6.42]	mm [in]		- -	- -	COMPLEMENTARY PROFILE
	EXP. SURFACE					
	70 [2.76]	mm [in]				
CAPS						
Ma 6520	A		B	C		D

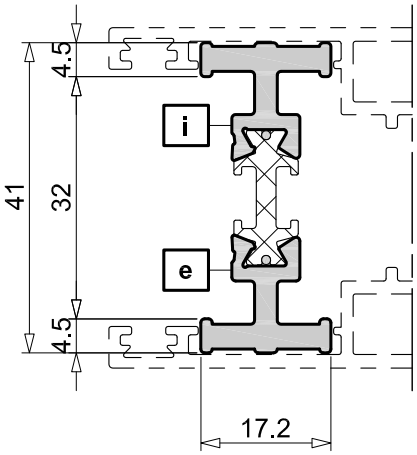


NC70195

	PERIMETER		I_{X} cm^4 / I_{Y} [in^4]	S_{X} cm^3 / S_{Y} [in^3]	USE
NC70195	161 [6.34] mm [in]		5.351 [0.129]	2.609 [0.159]	SASH REINFOR-CEMENT
	EXP. SURFACE 0 [0] mm [in]		0.382 [0.01]	0.444 [0.027]	

COMPONENTS

SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC11102	89 [3.50]	0 [0]
e	NC11102	89 [3.50]	0 [0]
	207700		



NC70201

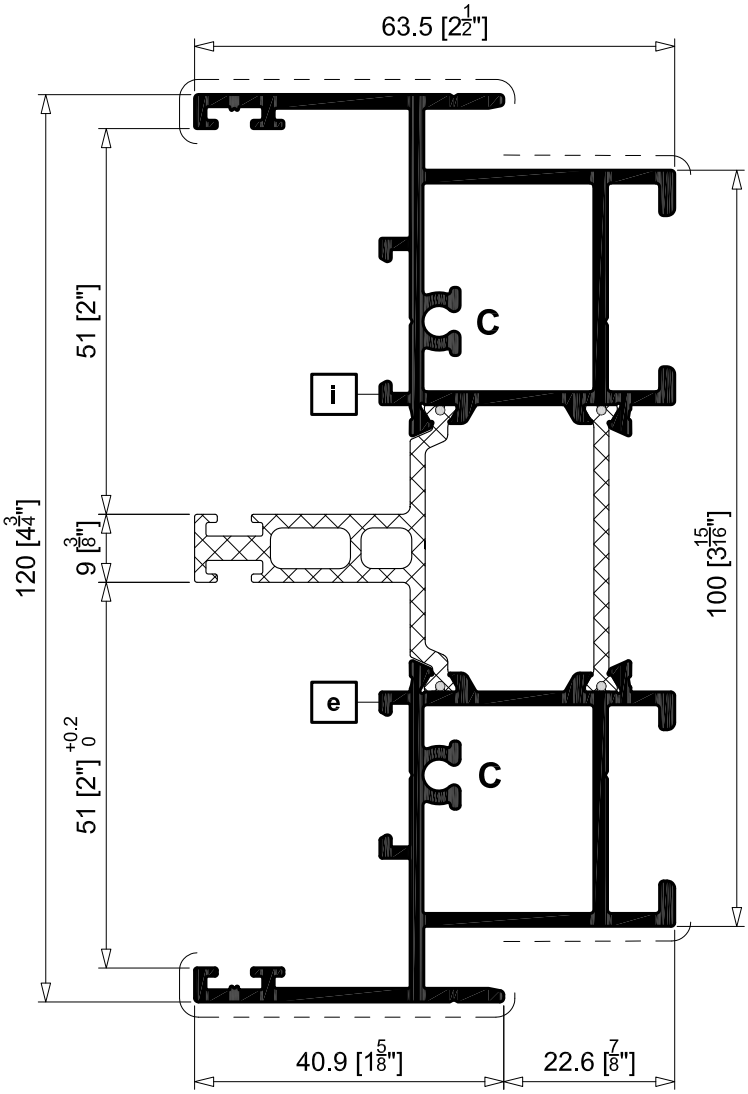
	PERIMETER		I_{X} cm^4 / I_{Y} [in^4]	S_{X} cm^3 / S_{Y} [in^3]	USE
NC70201	705 [27.76] mm [in]		137.783 [3.310]	22.964 [1.401]	FRAME
	EXP. SURFACE 138 [5.43] mm [in]		19.501 [0.469]	5.228 [0.319]	

90° assembly version

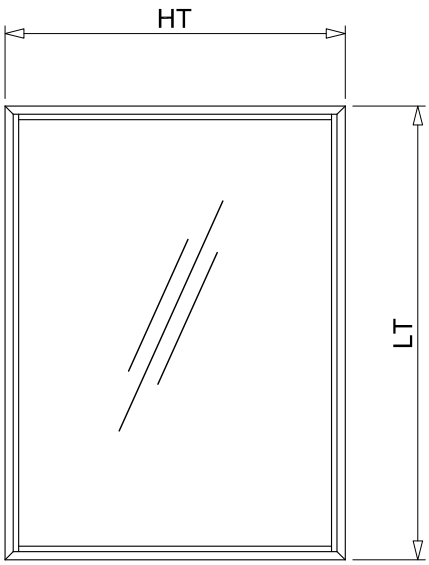
A	B	C	D
		Mu 0541	

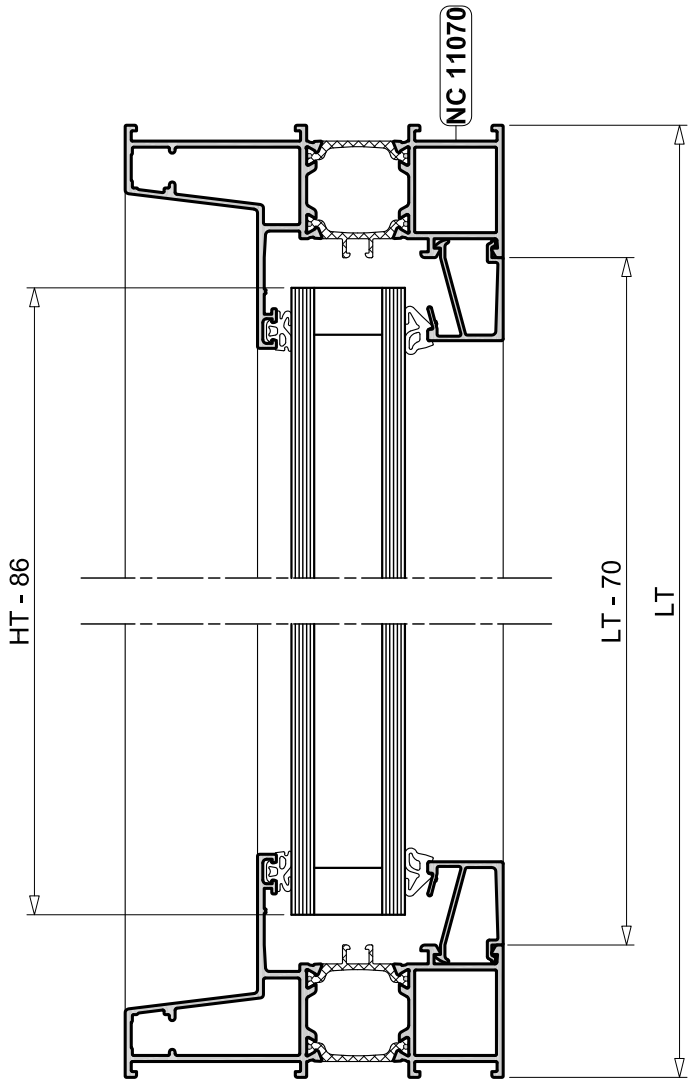
COMPONENTS

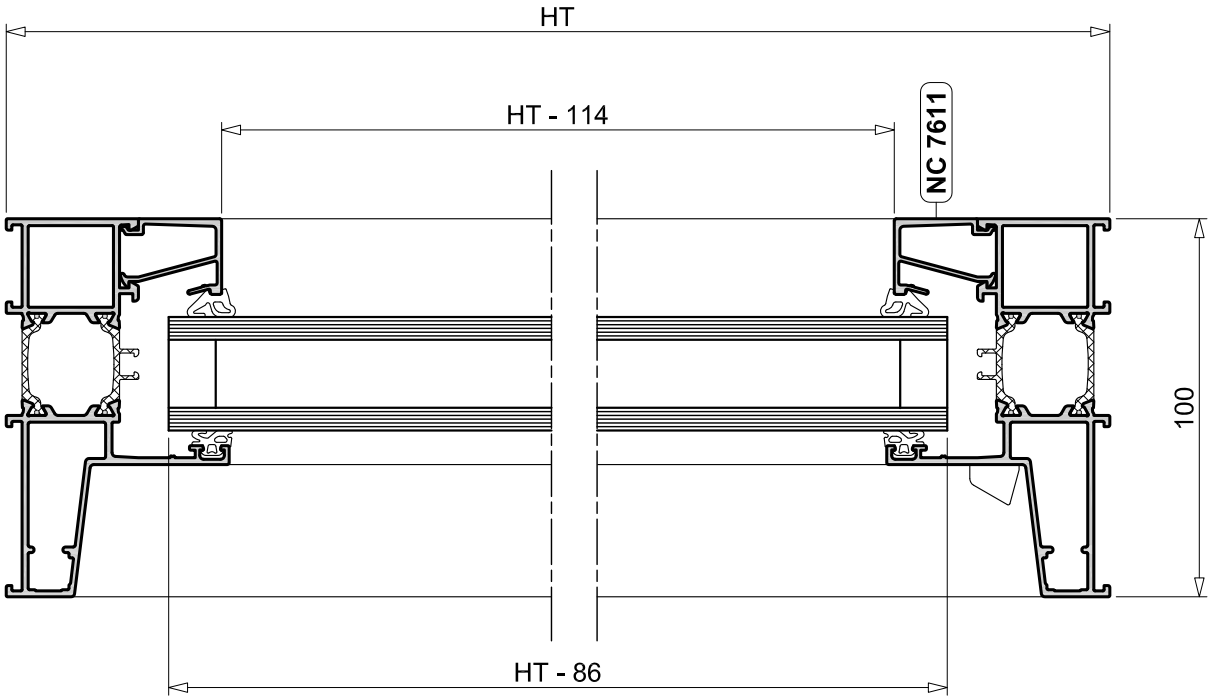
SHAPE	CODE	OUT. PERIMETER	EXPOSED SURFACE
i	NC70200	328 [12.91]	69 [2.72]
e	NC70200	328 [12.91]	69 [2.72]
	343800		
	327800		

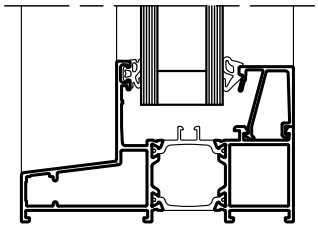


CUTTING SCHEME
SOLUTION 1 FIXED WINDOW



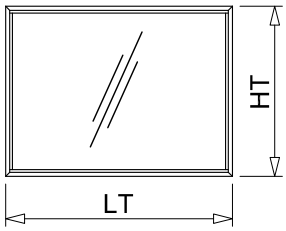






FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11070	VERTICAL FRAME	2	HT
NC11070	HORIZONTAL FRAME	2	LT
NC7611	VERTICAL GLASS STOP	2	HT - 114
NC7611	HORIZONTAL GLASS STOP	2	LT - 70

CODE	PROFILES	QTY	CUT
Mg 613d	GLASS VERTICAL INTERNAL GASKET	2	HT - 116
Mg 613d	GLASS HORIZONTAL INTERNAL GASKET	2	LT - 72
Mg 386d	GLASS VERTICAL EXTERNAL GASKET	2	HT - 116
Mg 386d	GLASS HORIZONTAL EXTERNAL GASKET	2	LT - 72

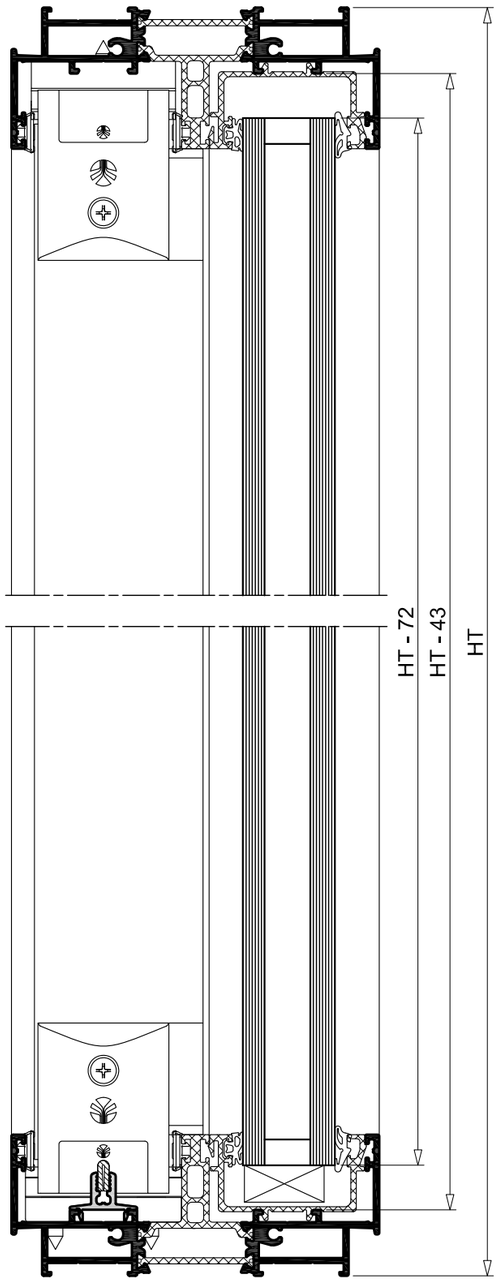
CODE	ACCESSORIES	QUANTITY FOR WINDOW
Ma 2410	PLUG FOR MA7751	8
Ma 7571	EXTERNAL ALIGNMENT CORNER KEY	4
Ma 7630	WATER DRAINAGE CAP	2
Ma 7634	GLASS SHIM	2
Ma 7751	INTERNAL CORNER KEY	4
Ma 7756	EXTERNAL CORNER KEY	4

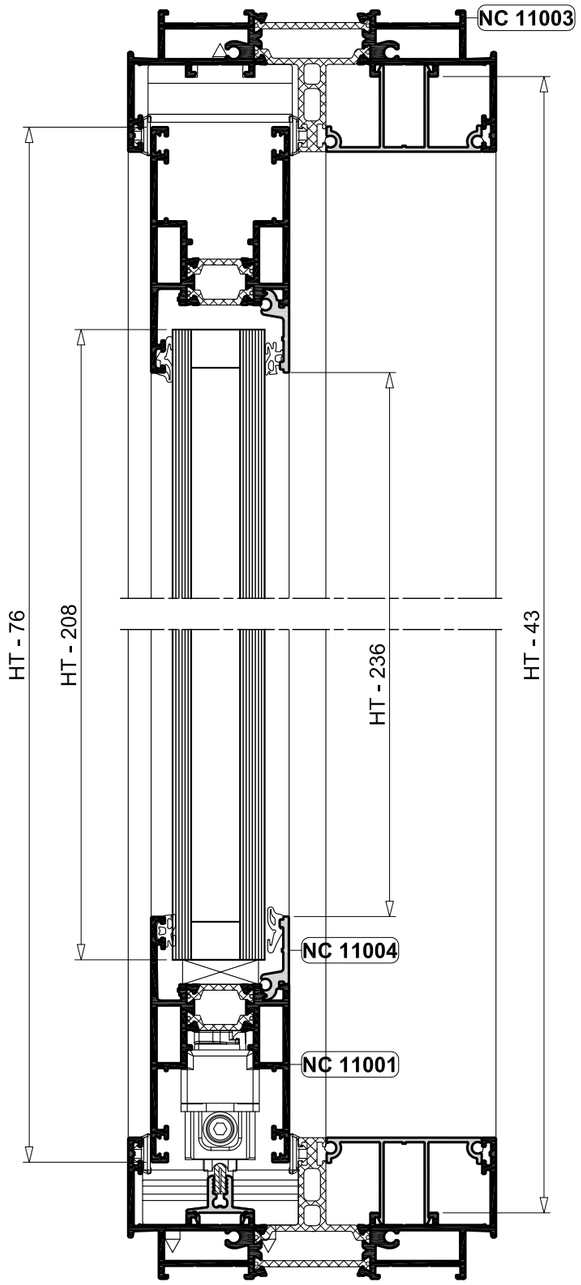
GLAZING	FIXED	2 SHEETS	HT - 86	LT - 86

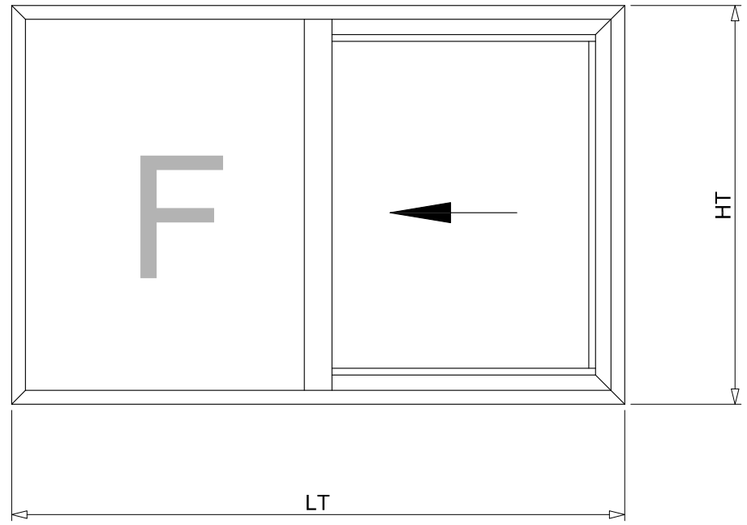
METRA

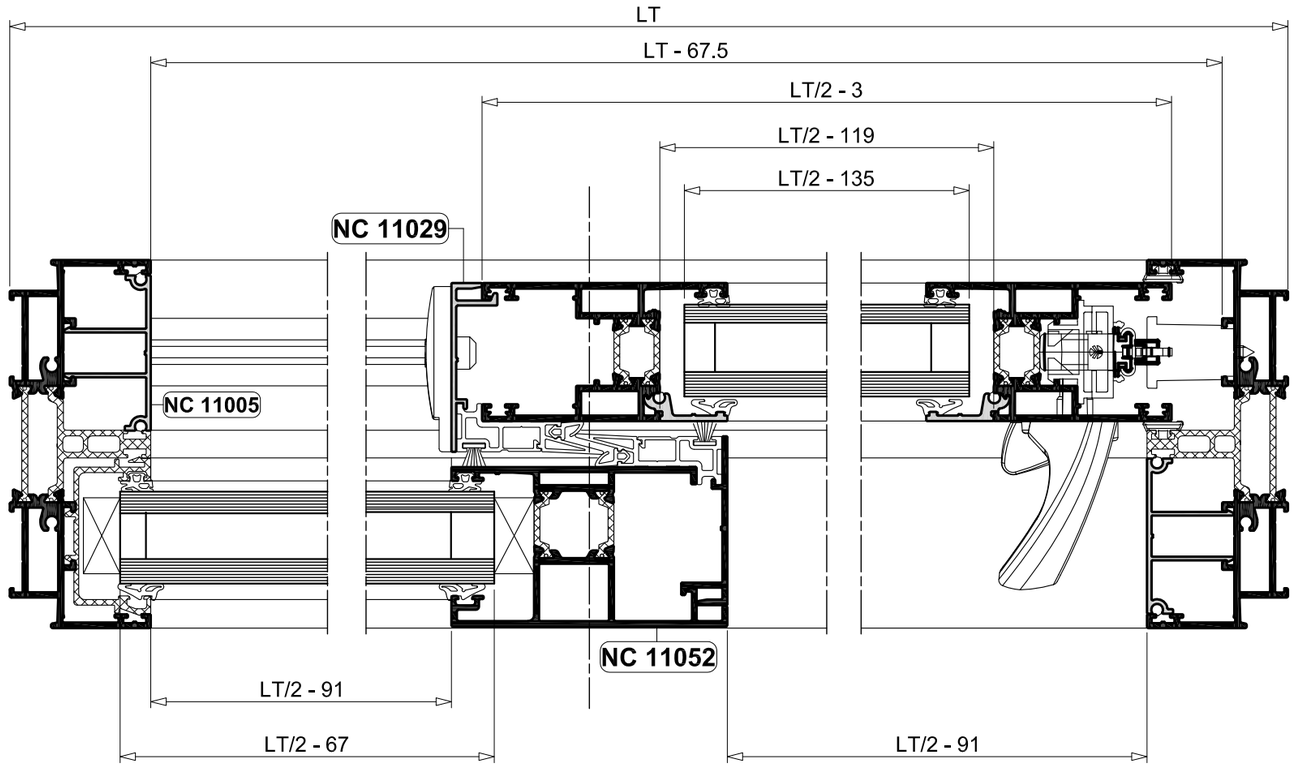
73c	C	02
SYSTEM	GROUP	TABLE

CUTTING SCHEME
SOLUTION 1 SASH + 1 FIXED

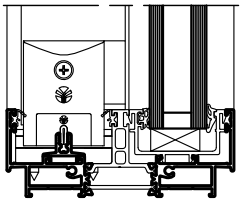






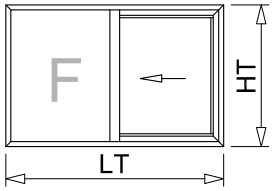


NC-S 120 SD	Cutting schemes	replaces table of	DATE 01/07/2010



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11001	VERTICAL SASH	2	HT - 76
NC11001	HORIZONTAL SASH	2	LT/2 - 3
NC11003	VERTICAL FRAME	2	HT
NC11003	HORIZONTAL FRAME	2	LT
NC11004	VERTICAL GLASS STOP	2	HT - 236
NC11004	HORIZONTAL GLASS STOP	2	LT/2 - 119
NC11005	VERTICAL FRAME COVER	2	HT - 43
NC11005	HORIZONTAL FRAME COVER	2	LT/2 - 91
NC11006	SUPPORT FOR GUIDE	1	LT - 67.5
NC11029	SASH INTERLOCK	1	HT - 45
NC11029	SASH INTERLOCK	1	HT - 76
NC11052	MULLION	1	HT - 43

CODE	GASKETS	QTY	CUT
Mg 150p	SPACER FOR CENTRAL JUNCTION	2	HT - 134
Mg 151d	GASKET FOR CENTRAL JUNCTION	2	HT - 134
Mg 152tp	SLIDING GASKET FOR HORIZONTAL FRAME	4	LT - 67,5
Mg 152tp	SLIDING GASKET FOR VERTICAL FRAME	2	HT - 90
Mg 153d	GASKET FOR VERTICAL GLASS STOP	2	HT - 236
Mg 153d	GASKET FOR HORIZONTAL GLASS STOP	2	LT/2 - 119
Mg 165p	SHIM FOR FIXED SASH	1	HT - 43
Mg 165p	SHIM FOR FIXED SASH	2	LT/2 - 91
Mg 386d	EXTERNAL GASKET FOR GLASS ON VERTICAL FRAME	2	HT - 92
Mg 386d	EXTERNAL GASKET FOR GLASS ON HORIZONTAL FRAME	2	LT/2 - 70
Mg 386d	EXTERNAL GASKET FOR GLASS ON VERTICAL SASH	2	HT - 236
Mg 386d	EXTERNAL GASKET FOR GLASS ON HORIZONTAL SASH	2	LT/2 - 119
Mg 612d	INTERNAL GASKET FOR GLASS ON VERTICAL FRAME	2	HT - 92
Mg 612d	INTERNAL GASKET FOR GLASS ON HORIZONTAL FRAME	2	LT/2 - 70
Mg 612d	INTERNAL GASKET FOR GLASS ON VERTICAL SASH	2	HT - 236
Mg 612d	INTERNAL GASKET FOR GLASS ON HORIZONTAL SASH	2	LT/2 - 119
Mg 661s	BRUSH GASKET FOR INTERLOCK	2	HT - 134
	* refer to table E1 12 for Mg153D on NC11005		

CODE	ACCESSORIES		QUANTITY PER WINDOW
Ma 2482	PIN FOR CORNER KEYS		16
Ma 5521	WATER DRAINAGE BUSH		4
Ma 6340	VENT-STOP		1
Ma 6359	WALL ADJUSTMENT + Mu 0699		quantity: refer to table F - 01
Ma 6500	CORNER KEY FOR FRAME		8
Ma 6501	ALIGNMENT CORNER KEY FOR FRAME		8
Ma 6502	CORNER KEY FOR SASH		8
Ma 6503	ALIGNMENT CORNER KEY FOR SASH		8
Ma 6504	ALIGNMENT CORNER KEY FOR SASH		4
Ma 6506	SLIDING ACCESSORY		1 (L=3.20m)
Ma 6510	PIN FOR CORNER KEY MA6502		16
Ma 6512	WEATHER SEAL FOR BOTTOM TRACKS		½ KIT (1 kit = 4 pcs)
Ma 6513	CAP SET		½ KIT (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING ACCESSORY		3
Ma 6524	CAP FOR MA6517		8
Ma 6525	KIT CARRIAGES		½ KIT (1 kit = 4 pcs)
Ma 6527	FINISHING PLATE FOR MG151P		½ KIT (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 6533	ACCESSORY FOR FIXED FRAME		1
Ma 9142	KIT SEAL CAPS FOR UPPER FRAME		½ KIT (1 kit = 2 pcs)

GLAZING				
	FRAME	1 SHEET	HT - 72	LT - 67
	SASHES	1 SHEET	HT - 208	LT/2 - 135

HARDWARE MHA

CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	1
MA 6507	FIXING SHIM	8
MA 6508	KEEPER FOR MHA	2 o 4
MA 6516	WRONG MOVEMENT STOP	1
MA 6535	CYLINDER HOLDER	1 (or no one)
MA 0962	CYLINDER COVER	1
MS 3003	CYLINDER	1 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	1
MA 6507	FIXING SHIM	4
MA 6508	KEEPER FOR MHA	2
MA 6516	WRONG MOVEMENT STOP	1
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	1
MA6523	PULL HANDLE "EOS MP"	1
MA6541	PULL HANDLE "EOS MINI"	1
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	1
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	1

HARDWARE MBZ

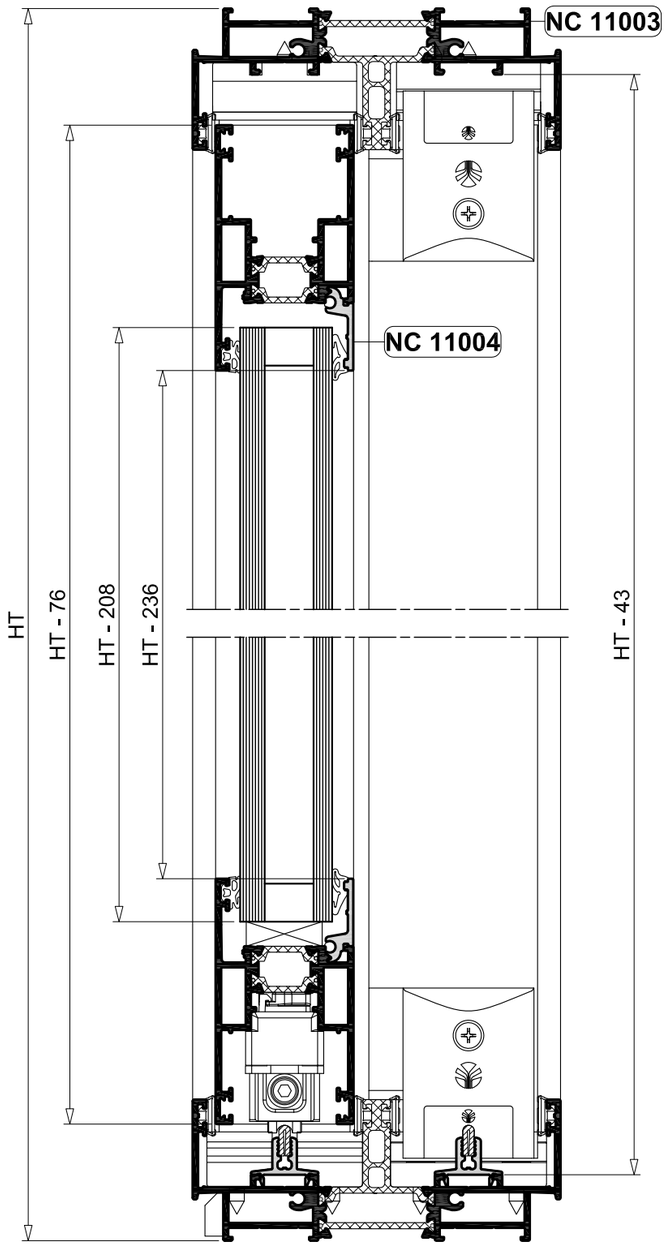
CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	1
MA 6511	SHIM FOR LOCK	2
MA 6518	LOCK CATCH	1
MU 0740	SCREW 4X40	2
MA6347	***LOCK H=610 2 CLOSING POINTS***	1
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	2
MU 0740	SCREW 4X40	4
MA6348	***LOCK H=1080 3 CLOSING POINTS***	1
MA 6511	SHIM FOR LOCK	6 (or 8 with extension Ma6531)
MA 6518	LOCK CATCH	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	1 (or no one)
MU 0740	SCREW 4X40	6 (or 8 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	1
MA 6511	SHIM FOR LOCK	8 (or 10 with extension Ma6531)
MA 6518	LOCK CATCH	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	1 (or no one)
MA 0962	CYLINDER COVER	1 (or no one
MS 3003	CYLINDER	1
MU 0740	SCREW 4X40	8 (or 10 with extension Ma6531)
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	1
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	1
MA 0962	CYLINDER COVER	1 (or no one)
MS 3003	CYLINDER	1
MU 0740	SCREW 4X40	4

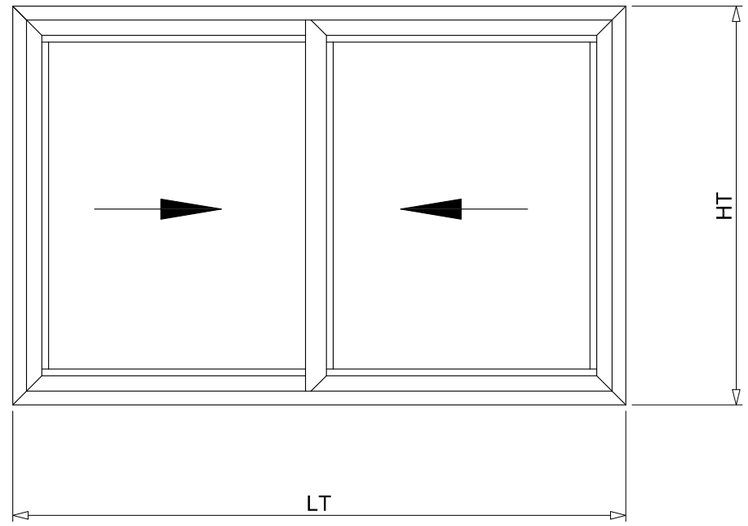
CODE	HANDLES	QUANTITY PER WINDOW
MA6351	HANDLE "ESTIVALE"	1
MA6353	HANDLE "ESTIVALE" INTERNAL + EXTERNAL	1
MA6371	HANDLE "HERA"	1
MA6521	HANDLE "CASSIOPEE"	1
MA6521 + MA6550	HANDLE "CASSIOPEE" INTERNAL + EXTERNAL	1
MA6523	PULL HANDLE "EOS"	1
MA6541	PULL HANDLE "EOS" MINI	1
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	1
MA6549	WINDOW HANDLE "ATHENA"	1
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	1
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	1

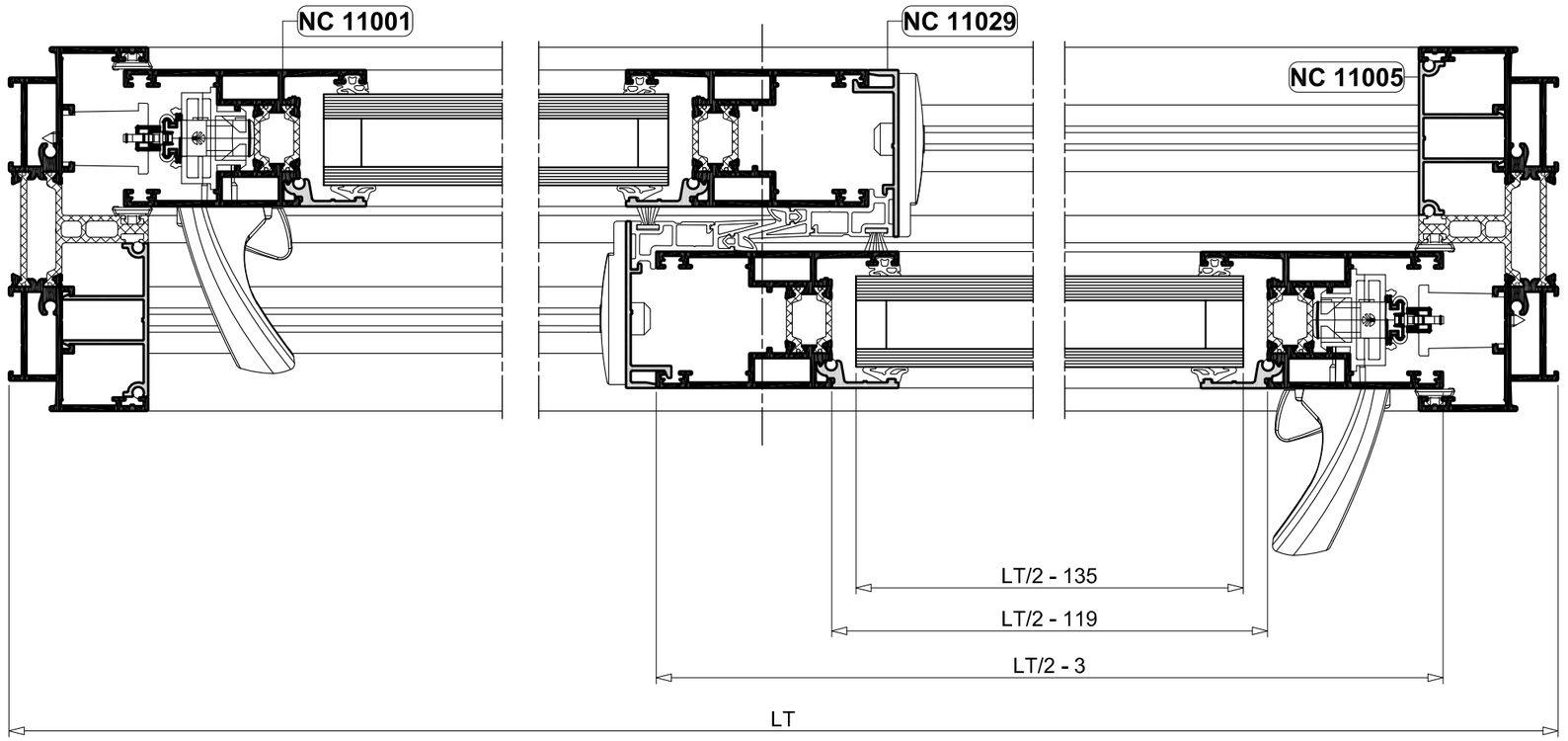
METRA

73c SYSTEM	C GROUP	03 TABLE

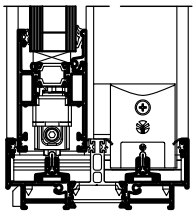
CUTTING SCHEME
SOLUTION 2 SLIDING SASHES





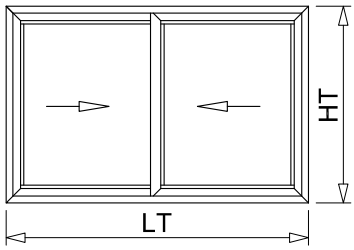


NC-S 120 SD	Cutting schemes	replaces table of	DATE 01/07/2010



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11001	VERTICAL SASH	4	HT - 76
NC11001	HORIZONTAL SASH	4	LT/2 - 3
NC11003	VERTICAL FRAME	2	HT
NC11003	HORIZONTAL FRAME	2	LT
NC11004	VERTICAL GLASS STOP	4	HT - 236
NC11004	HORIZONTAL GLASS STOP	4	LT/2 - 119
NC11005	FRAME COVER	2	HT - 43
NC11006	TRACK SUPPORT	2	LT - 67.5
NC11029	SASH INTERLOCK	2	HT - 76
CODE	**GASKETS**	**QTY**	**CUT**
Mg 150p	SPACER FOR CENTRAL JUNCTION	2	HT - 134
Mg 151d	GASKET FOR Mg150p	2	HT - 134
Mg 152tp	FRAME GASKET FOR SLIDING	8	LT - 90
Mg 152tp	FRAME GASKET FOR SLIDING	4	HT - 90
Mg 153d	GASKET FOR GLASS STOP	4	HT - 236
Mg 153d	GASKET FOR GLASS STOP	4	LT/2 - 119
Mg 386d	EXTERNAL GASKET FOR GLASS	4	HT - 236
Mg 386d	EXTERNAL GASKET FOR GLASS	4	LT/2 - 119
Mg 612d	INTERNAL GASKET FOR GLASS	4	HT - 236
Mg 612d	INTERNAL GASKET FOR GLASS	4	LT/2 - 119
Mg 661s	BRUSH FOR Mg150p	2	HT - 134
	* refer to table E1 12 for Mg153D on NC11005		
CODE	**ACCESSORIES**		**QUANTITY FOR WINDOW**
Ma 2482	PIN 8X11 MM		16
Ma 5521	WATER DRAINAGE BUSH		4
Ma 6340	VENT TOP PLUG		1
Ma 6359	WALL ADJUSTMENT + Mu0699		quantity: refer to table F 01
Ma 6500	CORNER KEY		8
Ma 6501	ALIGNMENT CORNER KEY		8
Ma 6502	CORNER KEY		16
Ma 6503	ALIGNMENT CORNER KEY		16
Ma 6504	ALIGNMENT CORNER KEY		8
Ma 6506	TRACK		2 (L=3.20m)
Ma 6510	SHAPED PLUG		32
Ma 6512	KIT LOWER CAPS		1 KIT (1 kit = 4 pcs)
Ma 6513	KIT CAPS FOR SASH		1 KIT (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING CAP		6
Ma 6524	CAP FOR Ma6517		16
Ma 6525	KIT CARRIAGES		1 KIT (1 kit = 4 pcs)
Ma 6527	CAPS FOR MG151P		1 KIT (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 9142	KIT UPPER TRACK TIGHTNESS		1 KIT (1 kit = 2 pcs)

GLAZING	SASHES	1 SHEET	HT - 208	LT/2 - 135

HARDWARE MHA

CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	2
MA 6507	FIXING SHIM	16
MA 6508	KEEPER FOR MHA	4 o 8
MA 6516	WRONG MOVEMENT STOP	2
MA 6535	CYLINDER HOLDER	2 (or no one)
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	2 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	2
MA 6507	FIXING SHIM	8
MA 6508	KEEPER FOR MHA	4
MA 6516	WRONG MOVEMENT STOP	2
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	2
MA6523	PULL HANDLE "EOS MP"	2
MA6541	PULL HANDLE "EOS MINI"	2
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	2
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	2

HARDWARE MBZ

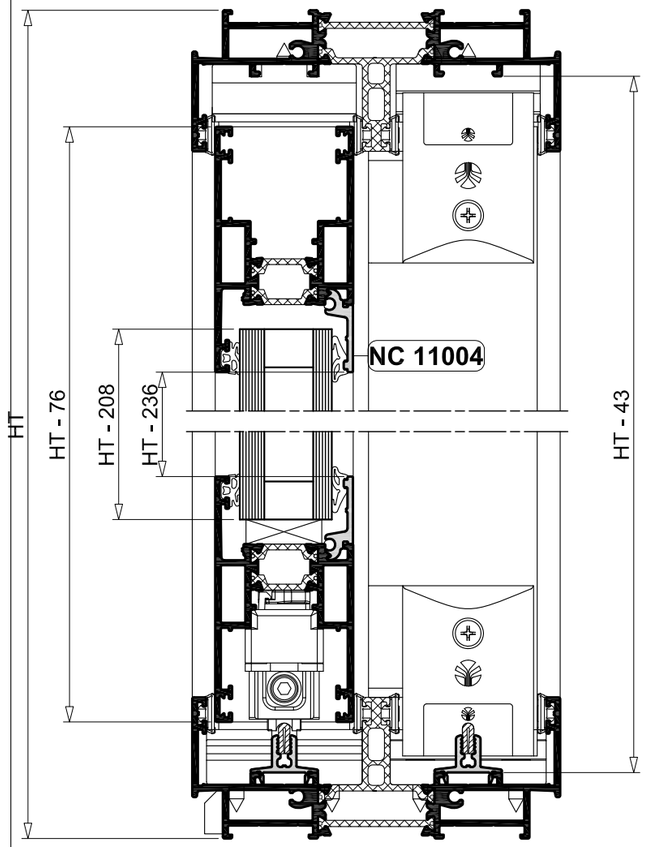
CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	2
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	2
MU 0740	SCREW 4X40	4
MA6347	***LOCK H=610 2 CLOSING POINTS***	2
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	4
MU 0740	SCREW 4X40	8
MA6348	***LOCK H=1080 3 CLOSING POINTS***	2
MA 6511	SHIM FOR LOCK	12 (or 16 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	2 (or no one)
MU 0740	SCREW 4X40	12 (or 16 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	2
MA 6511	SHIM FOR LOCK	16 (or 20 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	2 (or no one)
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	2
MU 0740	SCREW 4X40	16 (or 20 with extension Ma6531)
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	2
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	2
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	2
MU 0740	SCREW 4X40	8

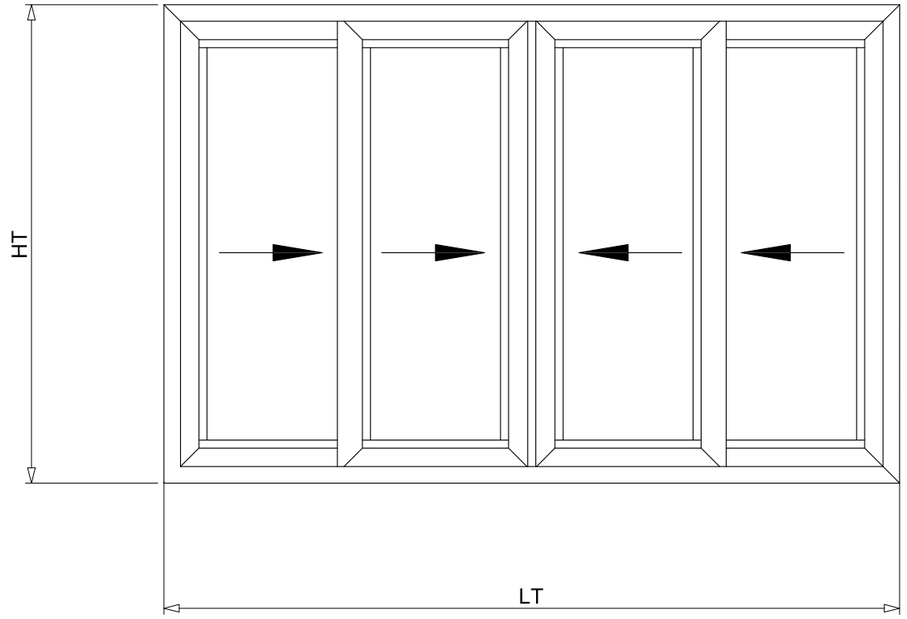
CODE	HANDLES	QUANTITY PER WINDOW
MA6351	HANDLE "ESTIVALE"	2
MA6353	HANDLE "ESTIVALE" INTERNAL + EXTERNAL	2
MA6371	HANDLE "HERA"	2
MA6521	HANDLE "CASSIOPEE"	2
MA6521 + MA6550	HANDLE "CASSIOPEE" INTERNAL + EXTERNAL	2
MA6523	PULL HANDLE "EOS"	2
MA6541	PULL HANDLE "EOS" MINI	2
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	2
MA6549	WINDOW HANDLE "ATHENA"	2
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	2
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	2

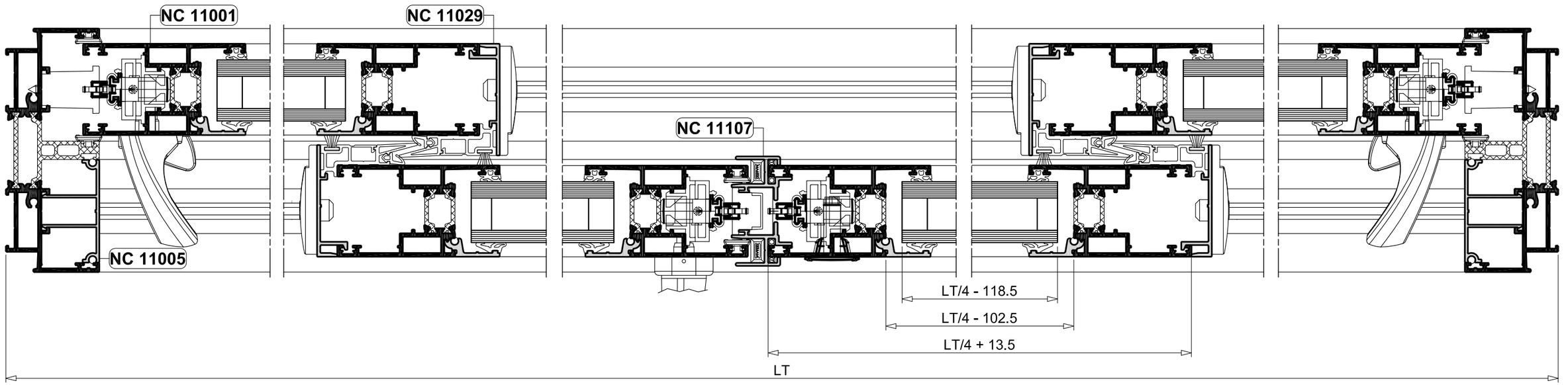
METRA

73c SYSTEM	C GROUP	04 TABLE

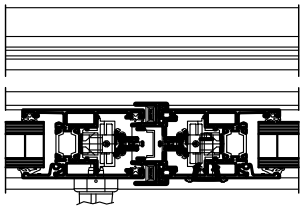
CUTTING SCHEME
SOLUTION 4 SASHES





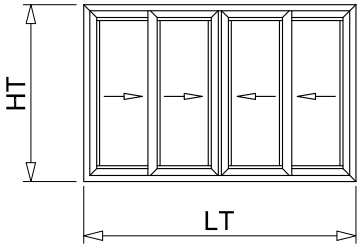


NC-S 120 SD	Cutting schemes	replaces table of	DATE 01/07/2010



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11001	VERTICAL SASH	8	HT - 76
NC11001	HORIZONTAL SASH	8	LT/4 + 13.5
NC11003	VERTICAL FRAME	2	HT
NC11003	HORIZONTAL FRAME	2	LT
NC11004	VERTICAL GLASS STOP	8	HT - 236
NC11004	HORIZONTAL GLASS STOP	8	LT/4 - 102.5
NC11005	FRAME COVER	2	HT - 43
NC11006	TRACK SUPPORT	1	LT - 92
NC11006	TRACK SUPPORT	1	LT - 43
NC11029	SASH INTERLOCK	4	HT - 76
NC11107	CENTRAL COVER	2	HT - 126

CODE	GASKETS	QTY	CUT
Mg 150p	SPACER FOR CENTRAL JUNCTION	4	HT - 134
Mg 151d	GASKET FOR Mg150p	4	HT - 134
Mg 152tp	FRAME GASKET FOR SLIDING	8	LT - 90
Mg 152tp	FRAME GASKET FOR SLIDING	4	HT - 90
Mg 153d	GASKET FOR GLASS STOP	8	HT - 236
Mg 153d	GASKET FOR GLASS STOP	8	LT/4 - 102.5
Mg 386d	EXTERNAL GASKET FOR GLASS	8	HT - 236
Mg 386d	EXTERNAL GASKET FOR GLASS	8	LT/2 - 119
Mg 612d	INTERNAL GASKET FOR GLASS	8	HT - 236
Mg 612d	INTERNAL GASKET FOR GLASS	8	LT/2 - 119
Mg 661s	BRUSH FOR Mg150p	4	HT - 134
	* refer to table E1 12 for Mg153D on NC11005		

CODE	ACCESSORIES		QUANTITY PER WINDOW
Ma 2482	PIN 8X11 MM		16
Ma 5521	WATER DRAINAGE BUSH		8
Ma 6340	VENT TOP PLUG		2
Ma 6359	WALL ADJUSTMENT		quantity: refer to table F 01
Ma 6500	CORNER KEY		8
Ma 6501	ALIGNMENT CORNER KEY		8
Ma 6502	CORNER KEY		32
Ma 6503	ALIGNMENT CORNER KEY		32
Ma 6504	ALIGNMENT CORNER KEY		16
Ma 6506	TRACK		2 (L=3.20m)
Ma 6510	SHAPED PLUG		64
Ma 6512	KIT LOWER CAPS		2 KITS (1 kit = 4 pcs)
Ma 6513	KIT CAPS FOR SASH		2 KITS (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING CAP		8
Ma 6520	KIT CAPS FOR SASH JUNCTION		1 KIT (1 kit = 4 pcs)
Ma 6524	CAP FOR Ma6517		16
Ma 6525	KIT CARRIAGES		2 KITS (1 kit = 4 pcs)
Ma 6527	CAPS FOR MG151P		2 KITS (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 9142	KIT UPPER TRACK TIGHTNESS		2 KITS (1 kit = 2 pcs)

GLAZING	SASHES	4 SHEETS	HT - 208	LT/4 - 118.5

HARDWARE MHA

CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	4
MA 6507	FIXING SHIM	32
MA 6508	KEEPER FOR MHA	4 o 8
MA 6516	WRONG MOVEMENT STOP	2
MA 6532	LOCK CATCH KIT	2 o 4
MA 6535	CYLINDER HOLDER	2 (or no one)
MA 0962	CYLINDER COVER	2 (or no one)
MS 3003	CYLINDER	2 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	4
MA 6507	FIXING SHIM	16
MA 6508	KEEPER FOR MHA	4
MA 6516	WRONG MOVEMENT STOP	2
MA 6532	LOCK CATCH KIT	2
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	4
MA6523	PULL HANDLE "EOS MP"	4
MA6541	PULL HANDLE "EOS MINI"	4
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	4
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	4

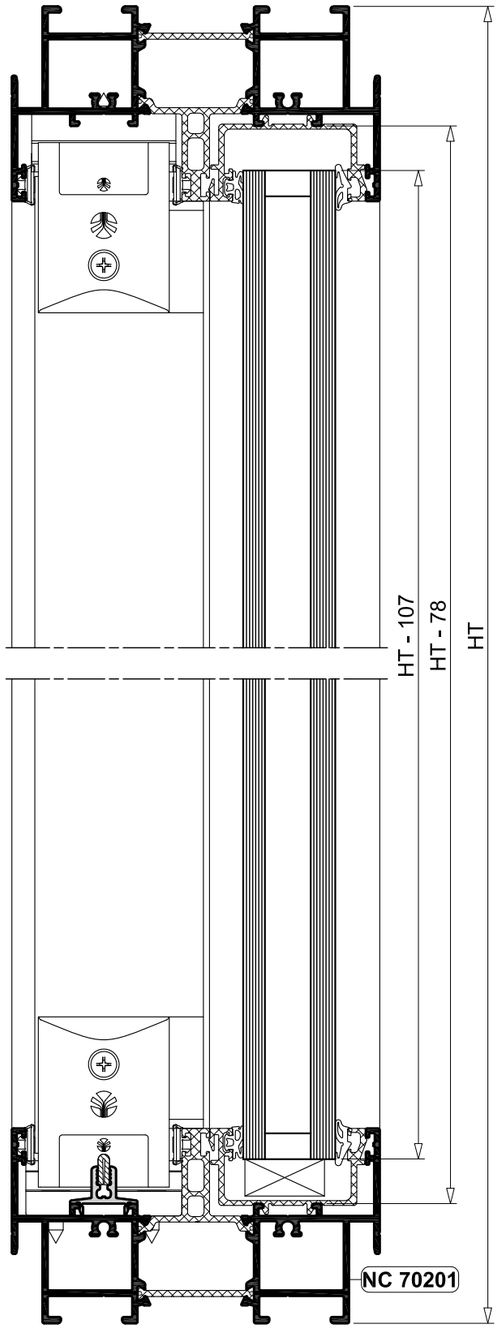
HARDWARE MBZ

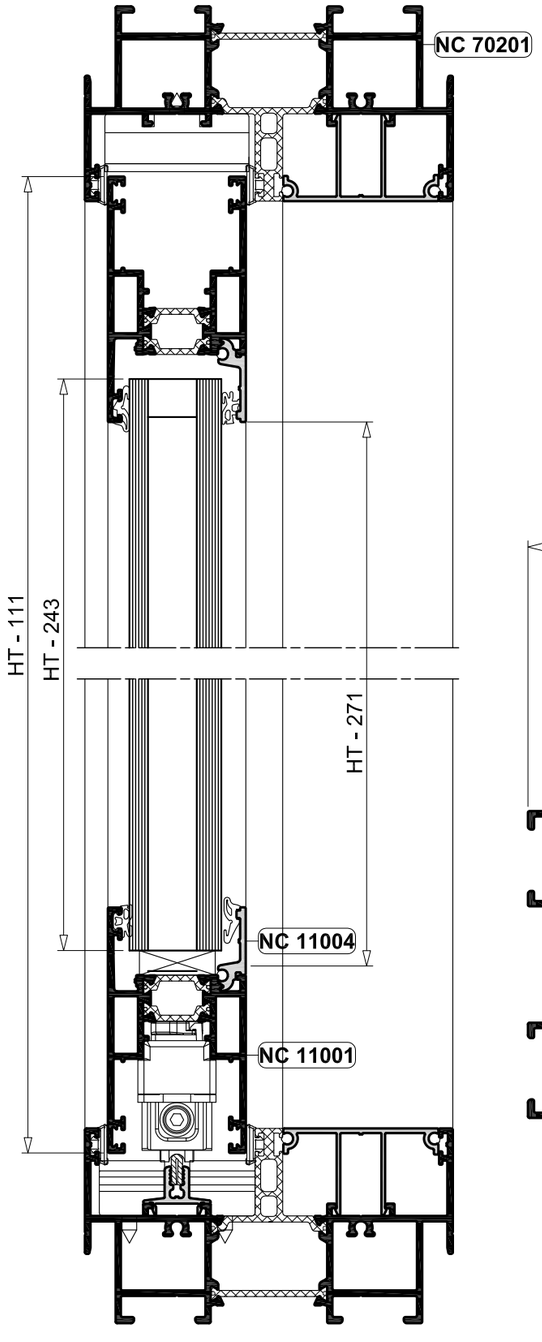
CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	4
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	4
MA 6519	LOCK CATCH SMALL	1
MA 6534	LOCK CATCH FIXING PLATE	8
MA6347	***LOCK H=610 2 CLOSING POINTS***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	14
MA 6518	LOCK CATCH	4
MA 6519	LOCK CATCH SMALL	2
MA 6534	LOCK CATCH FIXING PLATE	4
MA6348	***LOCK H=1080 3 CLOSING POINTS***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	20 (or 26 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6519	LOCK CATCH SMALL	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	3 (or no one)
MA 6534	LOCK CATCH FIXING PLATE	6 (or 8 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	24 (or 30 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6519	LOCK CATCH SMALL	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	3 (or no one)
MA 6534	LOCK CATCH FIXING PLATE	6 (or 8 with extension Ma6531)
MA 0962	CYLINDER COVER	3
MS 3003	CYLINDER	3
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	2
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	2
MA 6519	LOCK CATCH SMALL	1
MA 6534	LOCK CATCH FIXING PLATE	2
MA 0962	CYLINDER COVER	3
MS 3003	CYLINDER	3
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6351	HANDLE "ESTIVALE"	4
MA6371	HANDLE "HERA"	4
MA6521	HANDLE "CASSIOPEE"	4
MA6523	PULL HANDLE "EOS"	4
MA6541	PULL HANDLE "EOS" MINI	4
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	4
MA6549	WINDOW HANDLE "ATHENA"	4
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	4
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	4

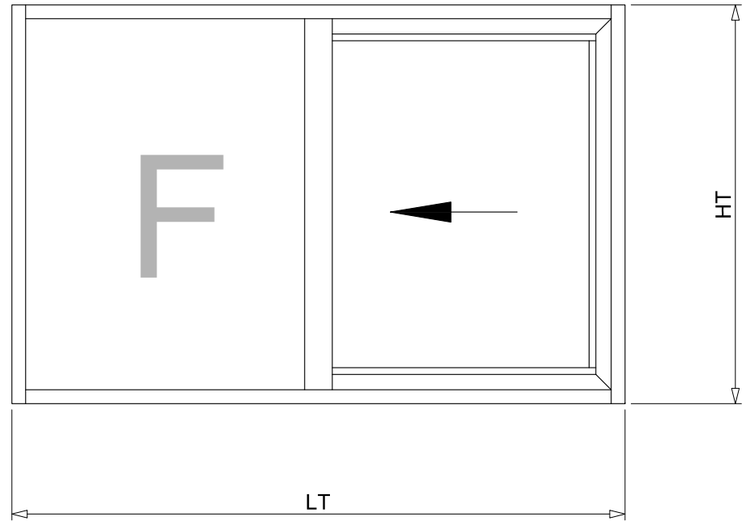
METRA

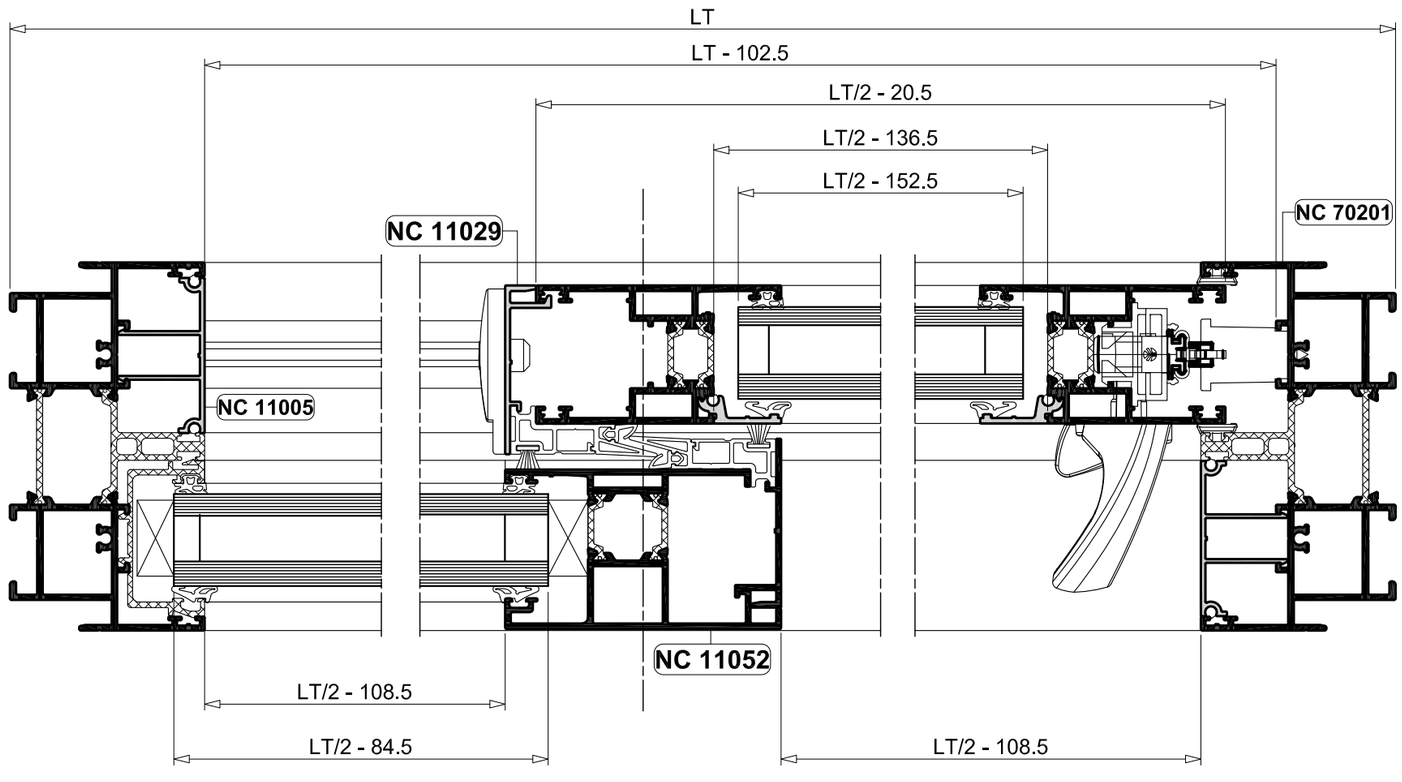
73c	C	05
SYSTEM	GROUP	TABLE

CUTTING SCHEME
SOLUTION 1 SASH + 1 FIXED

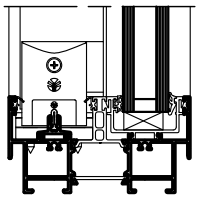






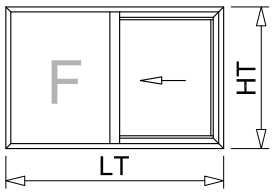


NC-S 120 SD	Cutting schemes	replaces table of	DATE



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11001	VERTICAL SASH	2	HT - 111
NC11001	HORIZONTAL SASH	2	LT/2 - 20.5
NC11004	VERTICAL GLASS STOP	2	HT - 271
NC11004	HORIZONTAL GLASS STOP	2	LT/2 - 136.5
NC11005	FRAME COVER	2	HT - 78
NC11005	FRAME COVER	2	LT/2 - 108.5
NC11006	TRACK SUPPORT	2	LT - 102.5
NC11029	SASH INTERLOCK	2	HT - 80
NC11029	SASH INTERLOCK	1	HT - 111
NC11052	MULLION	1	HT - 80
NC70201	VERTICAL FRAME	1	HT
NC70201	HORIZONTAL FRAME	1	LT - 70
CODE	**GASKETS**	**QTY**	**CUT**
Mg 150p	SPACER FOR CENTRAL JUNCTION	2	HT - 169
Mg 151d	GASKET FOR Mg150p	2	HT - 169
Mg 152tp	FRAME GASKET FOR SLIDING	4	LT - 127
Mg 152tp	FRAME GASKET FOR SLIDING	2	HT - 109
Mg 153d	GASKET FOR GLASS STOP	2	HT - 271
Mg 153d	GASKET FOR GLASS STOP	2	LT/2 - 136.5
Mg 165p	SHIM FOR FIXED SASH	1	HT - 78
Mg 165p	SHIM FOR FIXED SASH	2	LT/2 - 108.5
Mg 386d	EXTERNAL GASKET FOR GLASS	2	HT - 110
Mg 386d	EXTERNAL GASKET FOR GLASS	2	LT/2 - 92
Mg 386d	EXTERNAL GASKET FOR GLASS	2	HT - 256
Mg 386d	EXTERNAL GASKET FOR GLASS	2	LT/2 - 163
Mg 612d	INTERNAL GASKET FOR GLASS	2	HT - 110
Mg 612d	INTERNAL GASKET FOR GLASS	2	LT/2 - 92
Mg 612d	INTERNAL GASKET FOR GLASS	2	HT - 256
Mg 612d	INTERNAL GASKET FOR GLASS	2	LT/2 - 163
Mg 661s	BRUSH FOR Mg150p	2	HT - 169
	* refer to table E1 12 for Mg153D on NC11005		
CODE	**ACCESSORIES**		**QUANTITY PER WINDOW**
Ma 5521	WATER DRAINAGE BUSH		4
Ma 6340	VENT TOP PLUG		1
Ma 6502	CORNER KEY		8
Ma 6503	ALIGNMENT CORNER KEY		8
Ma 6504	ALIGNMENT CORNER KEY		4
Ma 6506	TRACK		1 (L=3.20m)
Ma 6510	SHAPED PLUG		16
Ma 6512	KIT LOWER CAPS		½ KIT (1 kit = 4 pcs)
Ma 6513	KIT CAPS FOR SASH		½ KIT (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING CAP		3
Ma 6524	CAP FOR Ma6517		8
Ma 6525	KIT CARRIAGES		½ KIT (1 kit = 4 pcs)
Ma 6527	CAPS FOR MG151P		½ KIT (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 6533	U-BOLT KIT FOR FIXED FRAME		1
Ma 9142	KIT UPPER TRACK TIGHTNESS		½ KIT (1 kit = 2 pcs)

GLAZING				
	FIXED	1 SHEET	HT - 72	LT - 84.5
	SASHES	1 SHEET	HT - 208	LT/2 - 152.5

HARDWARE MHA

CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	1
MA 6507	FIXING SHIM	8
MA 6508	KEEPER FOR MHA	2 o 4
MA 6516	WRONG MOVEMENT STOP	1
MA 6535	CYLINDER HOLDER	1 (or no one)
MA 0962	CYLINDER COVER	1
MS 3003	CYLINDER	1 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	1
MA 6507	FIXING SHIM	4
MA 6508	KEEPER FOR MHA	2
MA 6516	WRONG MOVEMENT STOP	1
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	1
MA6523	PULL HANDLE "EOS MP"	1
MA6541	PULL HANDLE "EOS MINI"	1
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	1
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	1

HARDWARE MBZ

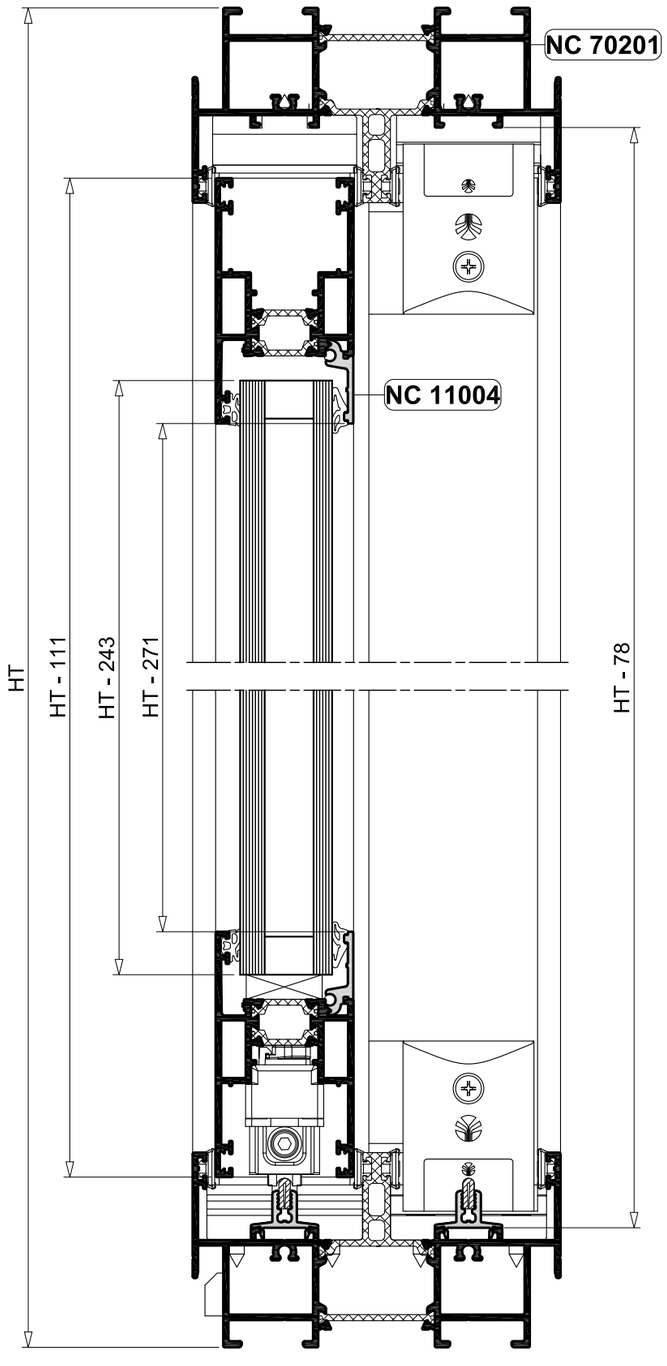
CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	1
MA 6511	SHIM FOR LOCK	2
MA 6518	LOCK CATCH	1
MU 0740	SCREW 4x40	2
MA6347	***LOCK H=610 2 CLOSING POINTS***	1
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	2
MU 0740	SCREW 4x40	4
MA6348	***LOCK H=1080 3 CLOSING POINTS***	1
MA 6511	SHIM FOR LOCK	6 (or 8 with extension Ma6531)
MA 6518	LOCK CATCH	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	3 (or no one)
MU 0740	SCREW 4x40	6 (or 8 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	1
MA 6511	SHIM FOR LOCK	8 (or 10 with extension Ma6531)
MA 6518	LOCK CATCH	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	1 (or no one)
MA 0962	CYLINDER COVER	1 (or no one)
MS 3003	CYLINDER	1
MU 0740	SCREW 4x40	8 (or 10 with extension Ma6531)
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	1
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	1
MA 0962	CYLINDER COVER	1 (or no one)
MS 3003	CYLINDER	1
MU 0740	SCREW 4x40	4

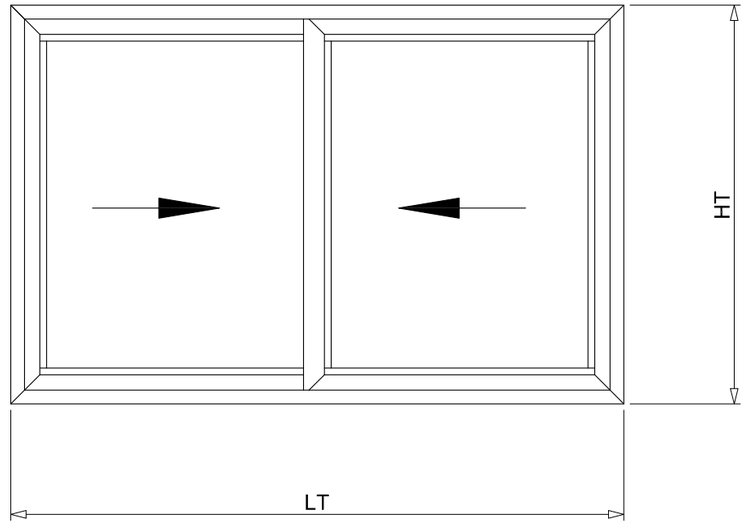
CODE	HANDLES	QUANTITY PER WINDOW
MA6351	HANDLE "ESTIVALE"	1
MA6353	HANDLE "ESTIVALE" INTERNAL + EXTERNAL	1
MA6371	HANDLE "HERA"	1
MA6521	HANDLE "CASSIOPEE"	1
MA6521 + MA6550	HANDLE "CASSIOPEE" INTERNAL + EXTERNAL	1
MA6523	PULL HANDLE "EOS"	1
MA6541	PULL HANDLE "EOS" MINI	1
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	1
MA6549	WINDOW HANDLE "ATHENA"	1
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	1
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	1

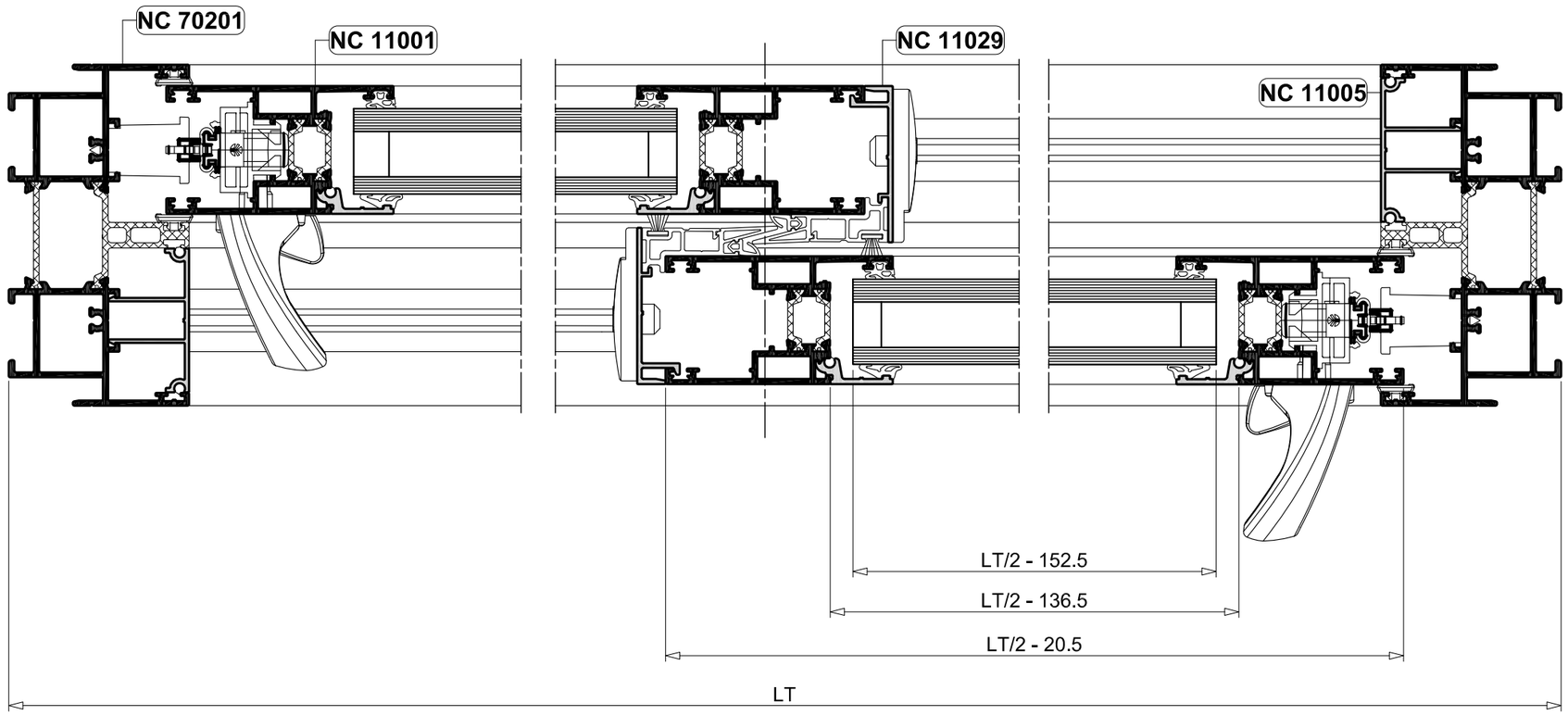
METRA

73c	C	06
SYSTEM	GROUP	TABLE

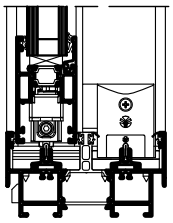
CUTTING SCHEME
SOLUTION 2 SLIDING SASHES





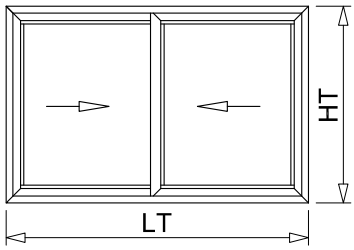


NC-S 120 SD	Cutting schemes	replaces table of	DATE 01/07/2010



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	CUT
NC11001	VERTICAL SASH	4	HT - 111
NC11001	HORIZONTAL SASH	4	LT/2 - 20.5
NC70201	VERTICAL FRAME	2	HT
NC70201	HORIZONTAL FRAME	2	LT - 70
NC11004	VERTICAL GLASS STOP	4	HT - 271
NC11004	HORIZONTAL GLASS STOP	4	LT/2 - 136.5
NC11005	FRAME COVER	2	HT - 78
NC11006	TRACK SUPPORT	2	LT - 102.5
NC11029	SASH INTERLOCK	2	HT - 111
CODE	**GASKETS**	**QTY**	**CUT**
Mg 150p	SPACER FOR CENTRAL JUNCTION	2	HT - 169
Mg 151d	GASKET FOR Mg150p	2	HT - 169
Mg 152tp	FRAME GASKET FOR SLIDING	8	LT - 127
Mg 152tp	FRAME GASKET FOR SLIDING	4	HT - 106
Mg 153d	GASKET FOR GLASS STOP	4	HT - 271
Mg 153d	GASKET FOR GLASS STOP	4	LT/2 - 136.5
Mg 386d	EXTERNAL GASKET FOR GLASS	4	HT - 253
Mg 386d	EXTERNAL GASKET FOR GLASS	4	LT/2 - 163
Mg 612d	INTERNAL GASKET FOR GLASS	4	HT - 253
Mg 612d	INTERNAL GASKET FOR GLASS	4	LT/2 - 163
Mg 661s	BRUSH FOR Mg150p	2	HT - 169
	* refer to table E1 12 for Mg153D on NC11005		
CODE	**ACCESSORIES**		**QUANTITY PER WINDOW**
Ma 5521	WATER DRAINAGE BUSH		4
Ma 6340	VENT TOP PLUG		1
Ma 6502	CORNER KEY		16
Ma 6503	ALIGNMENT CORNER KEY		16
Ma 6504	ALIGNMENT CORNER KEY		8
Ma 6506	TRACK		2 (L=3.20m)
Ma 6510	SHAPED PLUG		32
Ma 6512	KIT LOWER CAPS		1 KIT (1 kit = 4 pcs)
Ma 6513	KIT CAPS FOR SASH		1 KIT (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING CAP		6
Ma 6524	CAP FOR Ma6517		16
Ma 6525	KIT CARRIAGES		1 KIT (1 kit = 4 pcs)
Ma 6527	CAPS FOR MG151P		1 KIT (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 9142	KIT UPPER TRACK TIGHTNESS		1 KIT (1 kit = 2 pcs)

GLAZING	SASHES	1 SHEET	HT - 208	LT/2 - 152.5

HARDWARE MHA

CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	2
MA 6507	FIXING SHIM	16
MA 6508	KEEPER FOR MHA	4 o 8
MA 6516	WRONG MOVEMENT STOP	2
MA 6535	CYLINDER HOLDER	1 (or no one)
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	1 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	2
MA 6507	FIXING SHIM	8
MA 6508	KEEPER FOR MHA	4
MA 6516	WRONG MOVEMENT STOP	2
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	2
MA6523	PULL HANDLE "EOS MP"	2
MA6541	PULL HANDLE "EOS MINI"	2
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	2
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	2

HARDWARE MBZ

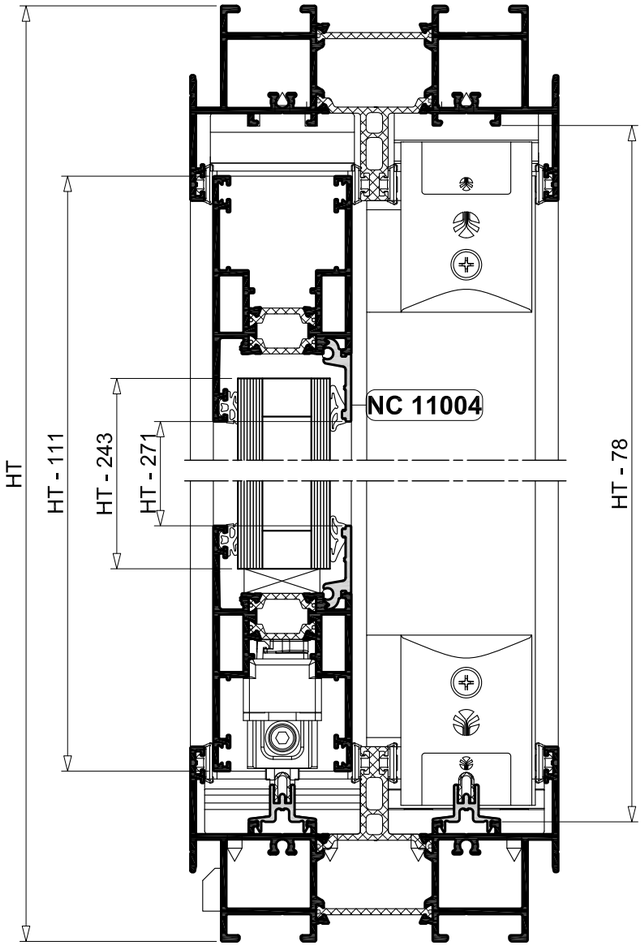
CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	2
MA 6511	SHIM FOR LOCK	4
MA 6518	LOCK CATCH	2
MU 0740	SCREW 4x40	4
MA6347	***LOCK H=610 2 CLOSING POINTS***	2
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	4
MU 0740	SCREW 4x40	8
MA6348	***LOCK H=1080 3 CLOSING POINTS***	2
MA 6511	SHIM FOR LOCK	12 (or 16 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	2 (or no one)
MU 0740	SCREW 4x40	12 (or 16 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	2
MA 6511	SHIM FOR LOCK	16 (or 20 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	2 (or no one)
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	2
MU 0740	SCREW 4x40	16 (or 20 with extension Ma6531)
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	2
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	2
MA 0962	CYLINDER COVER	2
MS 3003	CYLINDER	2
MU 0740	SCREW 4x40	8

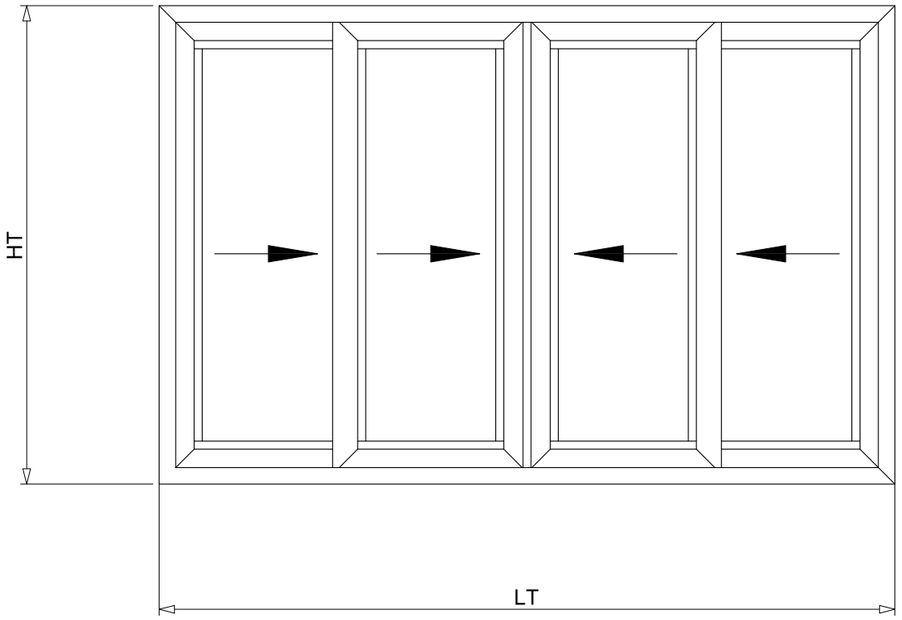
CODE	HANDLES	QUANTITY PER WINDOW
MA6351	HANDLE "ESTIVALE"	2
MA6353	HANDLE "ESTIVALE" INTERNAL + EXTERNAL	2
MA6371	HANDLE "HERA"	2
MA6521	HANDLE "CASSIOPEE"	2
MA6521 + MA6550	HANDLE "CASSIOPEE" INTERNAL + EXTERNAL	2
MA6523	PULL HANDLE "EOS"	2
MA6541	PULL HANDLE "EOS" MINI	2
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	2
MA6549	WINDOW HANDLE "ATHENA"	2
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	2
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	2

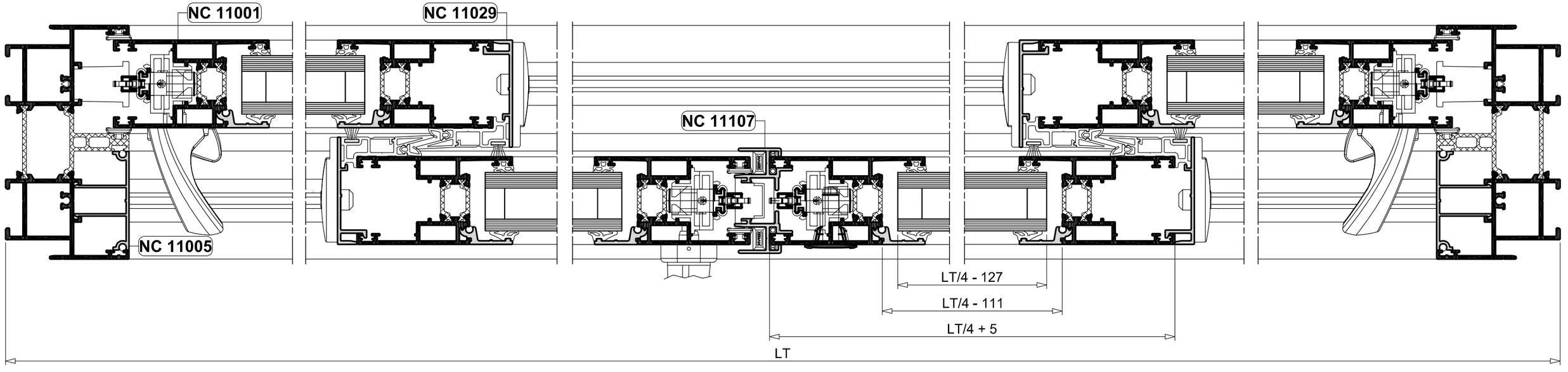
CUTTING SCHEME
SOLUTION 4 VENTS

METRA

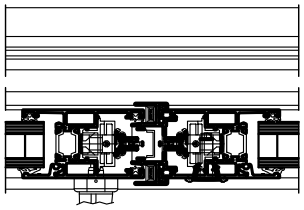
73c SYSTEM	C GROUP	07 TABLE





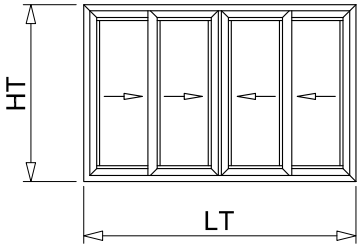


NC-S 120 SD	Cutting schemes	replaces table of	DATE



FOR THE SASHES DIMENSIONS
REFER TO THE STATIC DIAGRAMS
OF THE CATALOGUE

* **INDICATIVE DIMENSIONS**



CODE	PROFILES	QTY	TAGLIO
NC11001	VERTICAL SASH	8	HT - 111
NC11001	HORIZONTAL SASH	8	LT/4 + 5
NC70201	VERTICAL FRAME	2	HT
NC70201	HORIZONTAL FRAME	2	LT - 70
NC11004	VERTICAL GLASS STOP	8	HT - 271
NC11004	HORIZONTAL GLASS STOP	8	LT/4 - 111
NC11005	FRAME COVER	2	HT - 78
NC11006	TRACK SUPPORT	1	LT - 127
NC11006	TRACK SUPPORT	1	LT - 78
NC11029	SASH INTERLOCK	4	HT - 111
NC11107	CENTRAL COVER	2	HT - 161

CODE	GASKETS	QTY	TAGLIO
Mg 150p	SPACER FOR CENTRAL JUNCTION	4	HT - 169
Mg 151d	GASKET FOR Mg150p	4	HT - 169
Mg 152tp	FRAME GASKET FOR SLIDING	8	LT - 106
Mg 152tp	FRAME GASKET FOR SLIDING	4	HT - 106
Mg 153d	GASKET FOR GLASS STOP	8	HT - 271
Mg 153d	GASKET FOR GLASS STOP	8	LT/4 - 111
Mg 386d	EXTERNAL GASKET FOR GLASS	8	HT - 253
Mg 386d	EXTERNAL GASKET FOR GLASS	8	LT/4 - 137
Mg 612d	INTERNAL GASKET FOR GLASS	8	HT - 253
Mg 612d	INTERNAL GASKET FOR GLASS	8	LT/4 - 137
Mg 661s	BRUSH FOR Mg150p	4	HT - 169
	* refer to table E1 12 for Mg153D on NC11005		

CODE	ACCESSORIES		QUANTITY PER WINDOW
Ma 5521	WATER DRAINAGE BUSH		8
Ma 6340	VENT TOP PLUG		2
Ma 6502	CORNER KEY		32
Ma 6503	ALIGNMENT CORNER KEY		32
Ma 6504	ALIGNMENT CORNER KEY		16
Ma 6506	TRACK		2 (L=3.20m)
Ma 6510	SHAPED PLUG		64
Ma 6512	KIT LOWER CAPS		2 KITS (1 kit = 4 pcs)
Ma 6513	KIT CAPS FOR SASH		2 KITS (1 kit = 4 pcs)
Ma 6517	ANTI-LIFTING CAP		8
Ma 6520	KIT CAPS FOR SASH JUNCTION		1 KIT (1 kit = 4 pcs)
Ma 6524	CAP FOR Ma6517		16
Ma 6525	KIT CARRIAGES		2 KITS (1 kit = 4 pcs)
Ma 6527	CAPS FOR MG151P		2 KITS (1 kit = 4 pcs)
Ma 6528	WATER DRAINAGE CAP		2
Ma 9142	KIT UPPER TRACK TIGHTNESS		2 KITS (1 kit = 2 pcs)

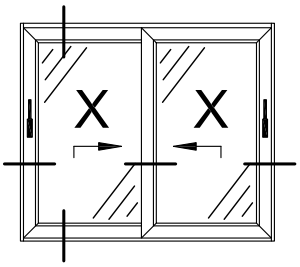
GLAZING	SASHES	4 SHEETS	HT - 208	LT/4 - 127

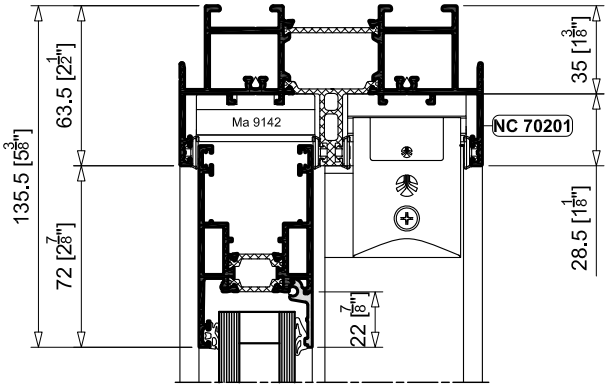
HARDWARE MHA

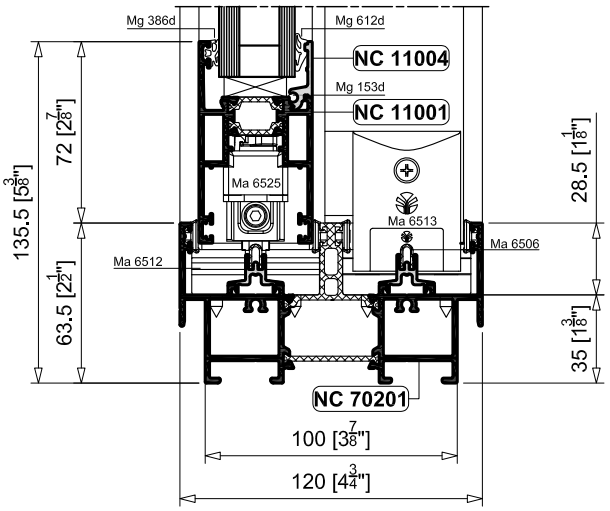
CODE	HARDWARE	QUANTITY PER WINDOW
MA6529	***LOCK H=2000 2 or 4 CLOSING POINTS***	4
MA 6507	FIXING SHIM	32
MA 6508	KEEPER FOR MHA	4 o 8
MA 6516	WRONG MOVEMENT STOP	2
MA 6532	LOCK CATCH KIT	2 o 4
MA 6535	CYLINDER HOLDER	1 (or no one)
MA 0962	CYLINDER COVER	1 (or no one)
MS 3003	CYLINDER	1 (or no one)
MA6530	***LOCK H=500 2 CLOSING POINTS***	4
MA 6507	FIXING SHIM	16
MA 6508	KEEPER FOR MHA	4
MA 6516	WRONG MOVEMENT STOP	2
MA 6532	LOCK CATCH KIT	2
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6522	WINDOW HANDLE "MARINA" WITH INTERNAL CONCAVE HANDLE	4
MA6523	PULL HANDLE "EOS MP"	4
MA6541	PULL HANDLE "EOS MINI"	4
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	4
MA6547	WINDOW HANDLE "MARINA" SINGLE FIXING	4

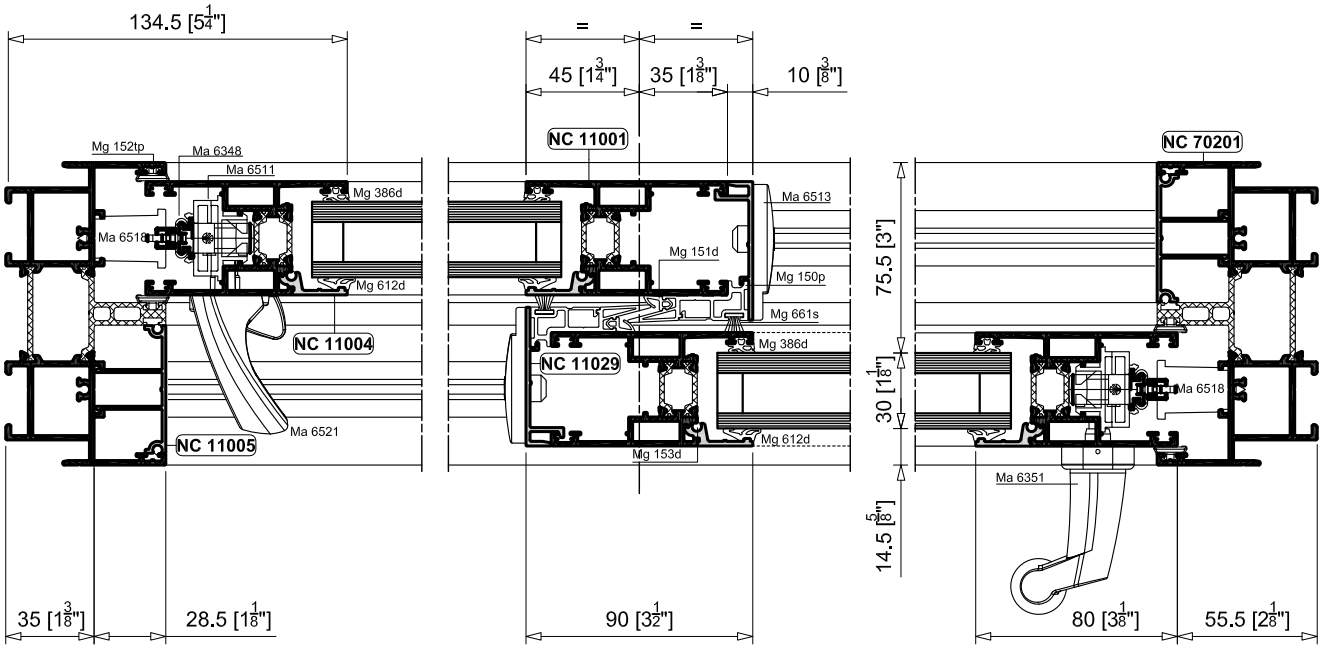
HARDWARE MBZ

CODE	HARDWARE	QUANTITY PER WINDOW
MA6346	***LOCK H=152 1 CLOSING POINT***	4
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	4
MA 6519	LOCK CATCH SMALL	1
MA 6534	LOCK CATCH FIXING PLATE	8
MA6347	***LOCK H=610 2 CLOSING POINTS***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	14
MA 6518	LOCK CATCH	4
MA 6519	LOCK CATCH SMALL	2
MA 6534	LOCK CATCH FIXING PLATE	4
MA6348	***LOCK H=1080 3 CLOSING POINTS***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	20 (or 26 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6519	LOCK CATCH SMALL	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	3 (or no one)
MA 6534	LOCK CATCH FIXING PLATE	6 (or 8 with extension Ma6531)
MA6349	***LOCK H=1080 3 CLOSING POINTS WITH CYLINDER***	3
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	24 (or 30 with extension Ma6531)
MA 6518	LOCK CATCH	6 (or 8 with extension Ma6531)
MA 6519	LOCK CATCH SMALL	3 (or 4 with extension Ma6531)
MA 6531	LOCK EXTENSION L=500 (addition of 1 closing point)	3 (or no one)
MA 6534	LOCK CATCH FIXING PLATE	6 (or 8 with extension Ma6531)
MA 0962	CYLINDER COVER	3
MS 3003	CYLINDER	3
MA6361	***LOCK 1 CLOSING POINT WITH CYLINDER***	2
MA 6346	LOCK H=152 1 CLOSING POINT	1
MA 6511	SHIM FOR LOCK	8
MA 6518	LOCK CATCH	2
MA 6519	LOCK CATCH SMALL	1
MA 6534	LOCK CATCH FIXING PLATE	2
MA 0962	CYLINDER COVER	3
MS 3003	CYLINDER	3
CODE	**HANDLES**	**QUANTITY PER WINDOW**
MA6351	HANDLE "ESTIVALE"	4
MA6371	HANDLE "HERA"	4
MA6521	HANDLE "CASSIOPEE"	4
MA6523	PULL HANDLE "EOS MP"	4
MA6541	PULL HANDLE "EOS" MINI	4
MA6542	WINDOW HANDLE "MARINA" SPECIAL FIXING	4
MA6549	WINDOW HANDLE "ATHENA"	4
MA6549 + MA6551	WINDOW HANDLE "ATHENA" INTERNAL + EXTERNAL	4
MA6542 + MA6581	WINDOW HANDLE "MARINA" SPECIAL FIXING + CONCAVE HANDLE	4









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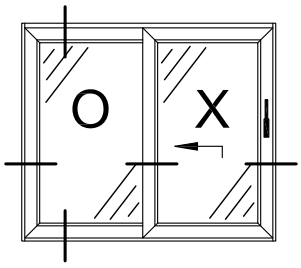

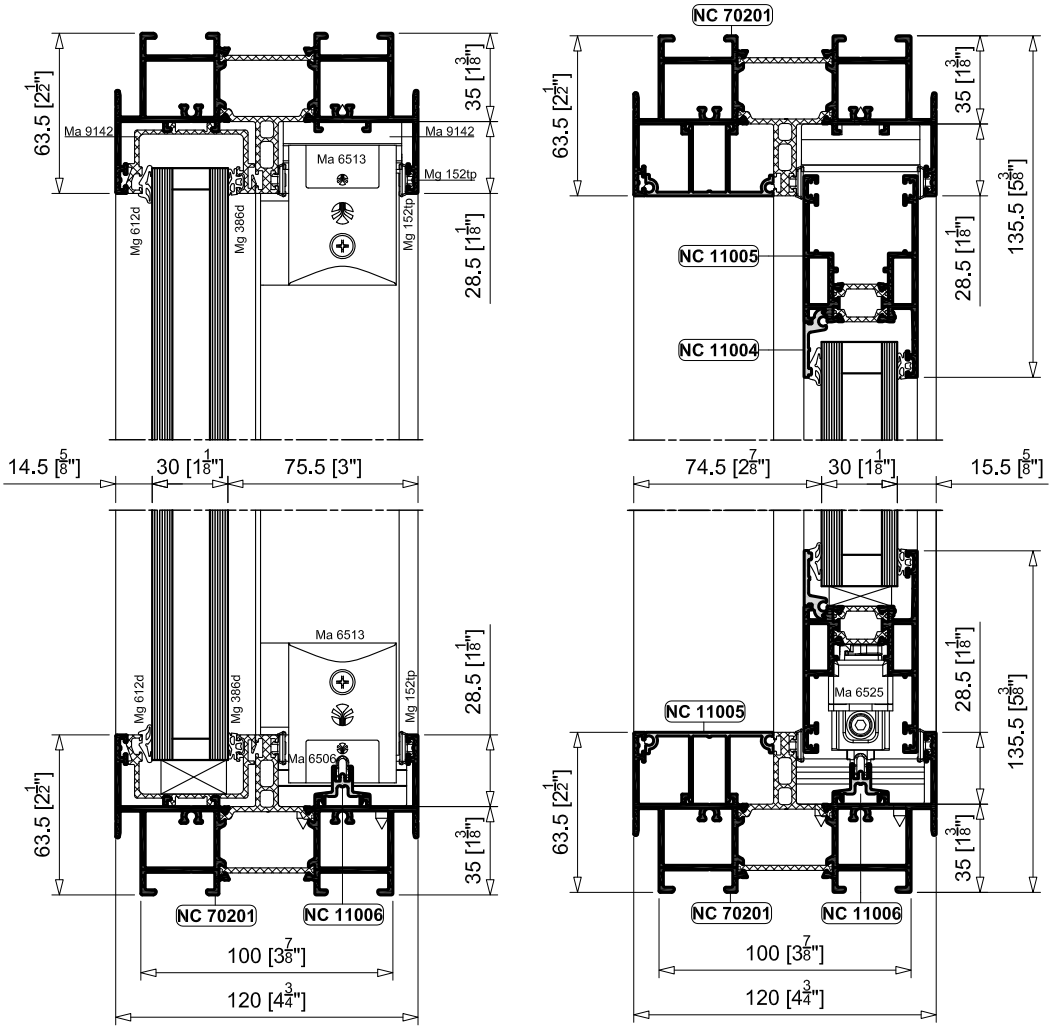

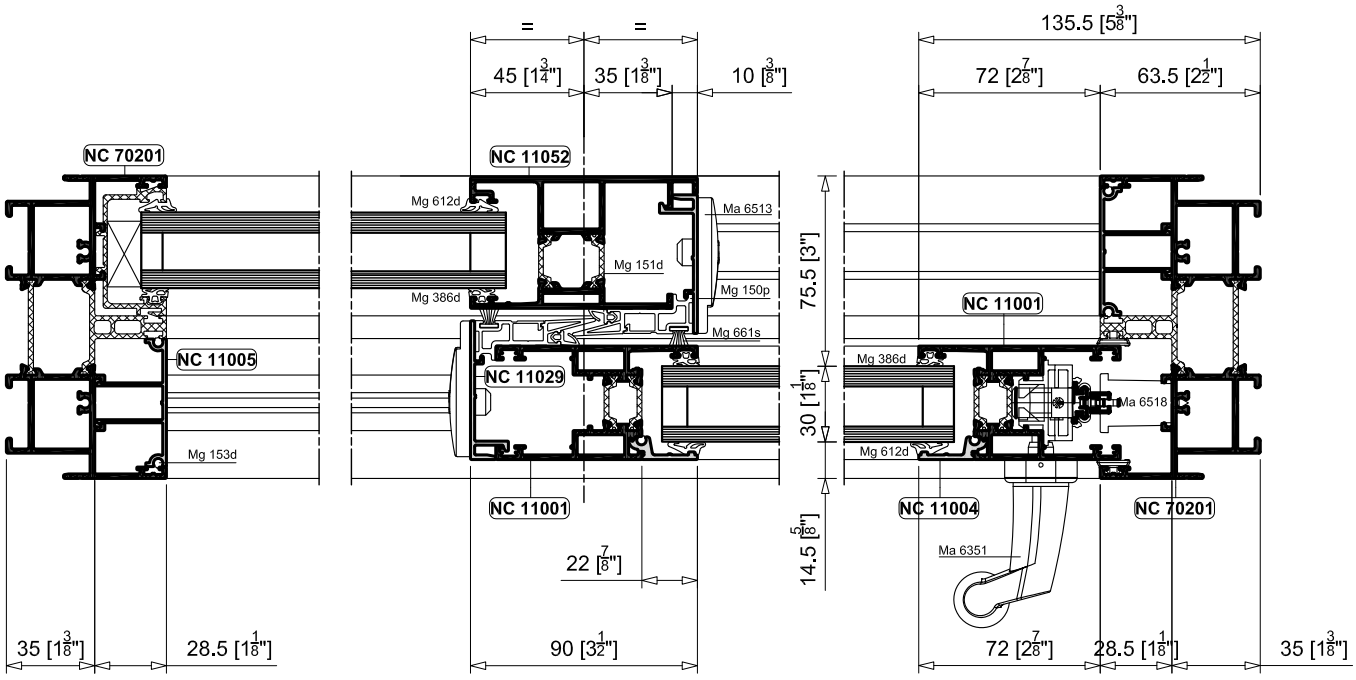

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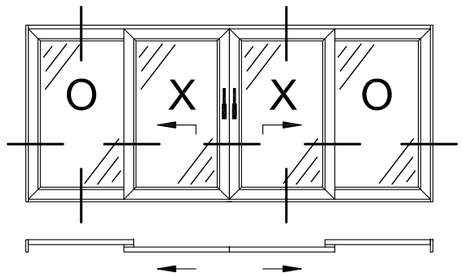
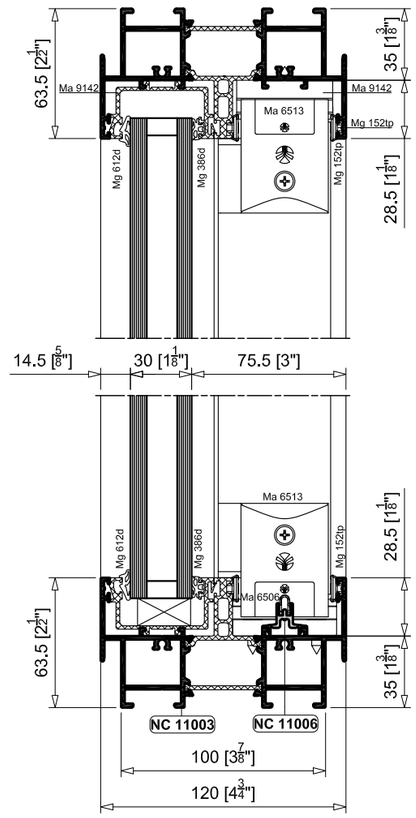
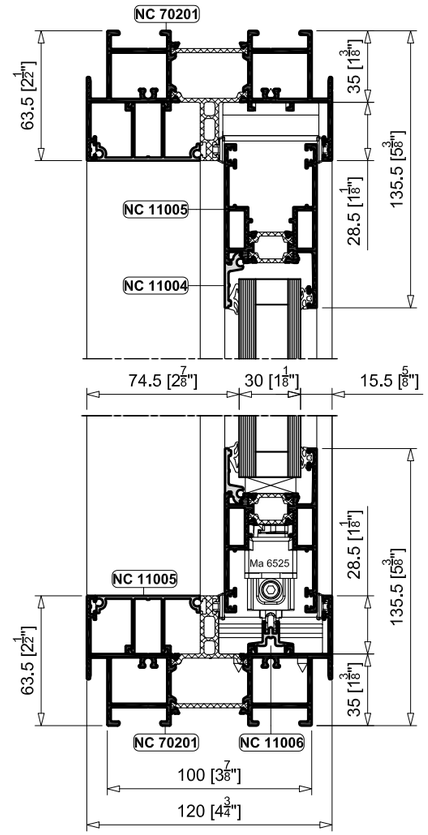


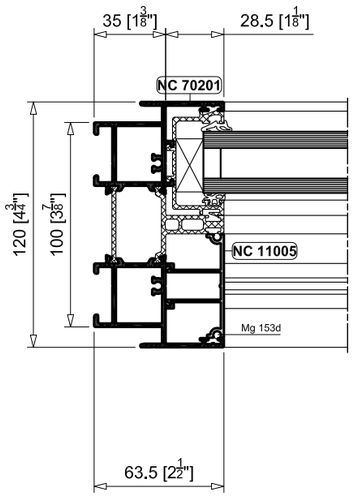
DOOR OPERATION

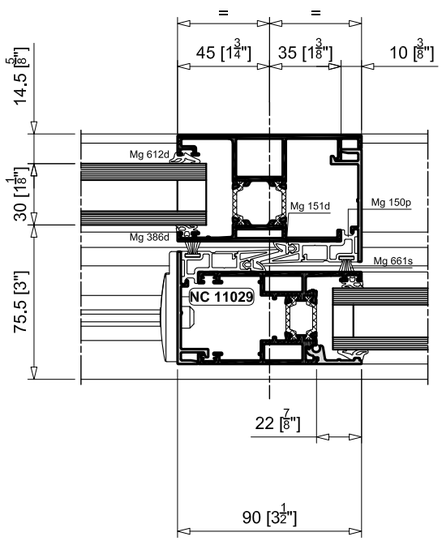
OPENING:
Primary Door must open first

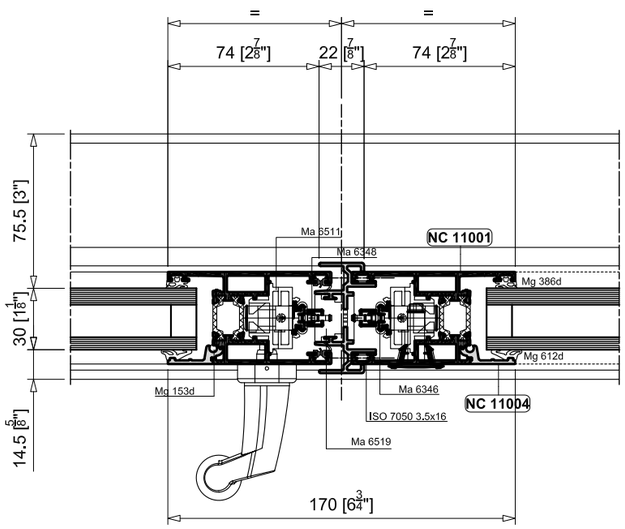
CLOSING:
Secondary Door must close first

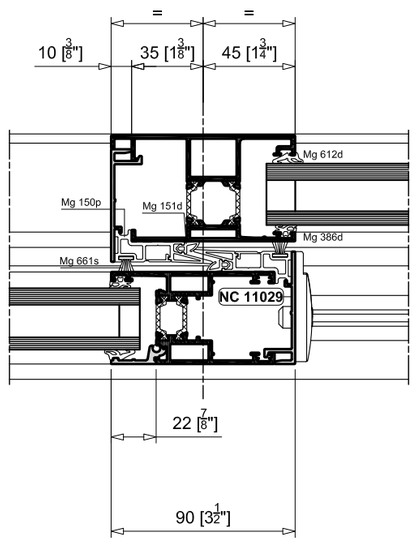


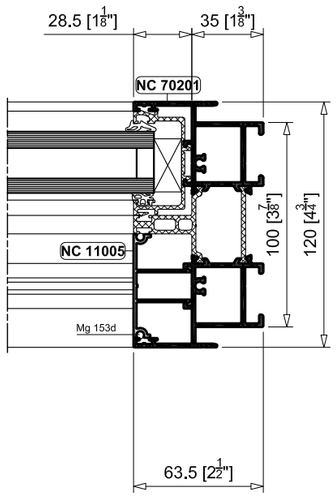












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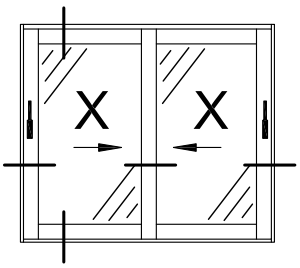
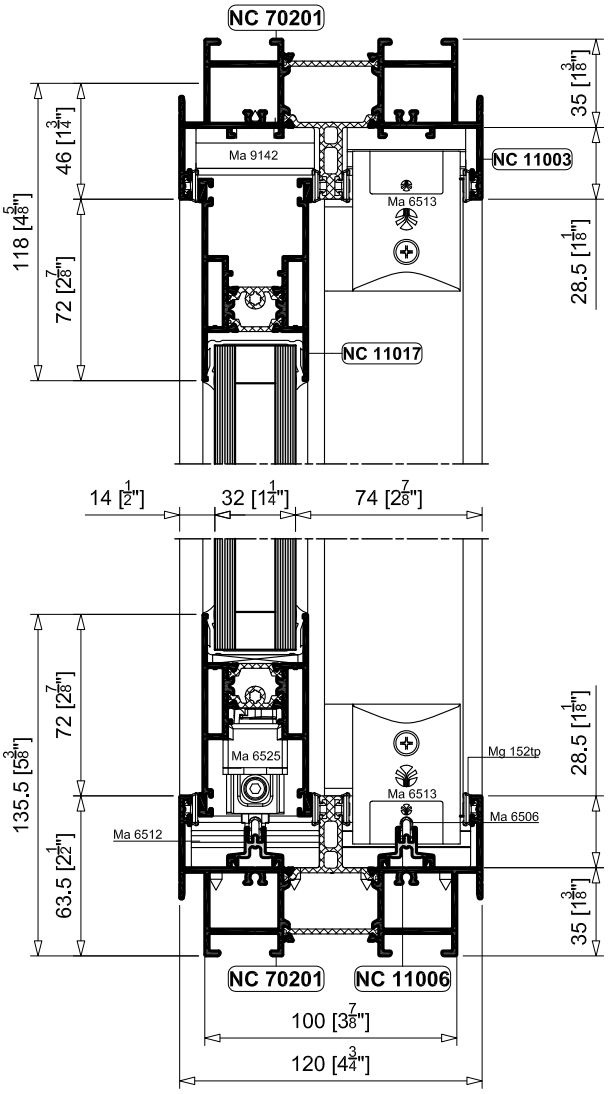
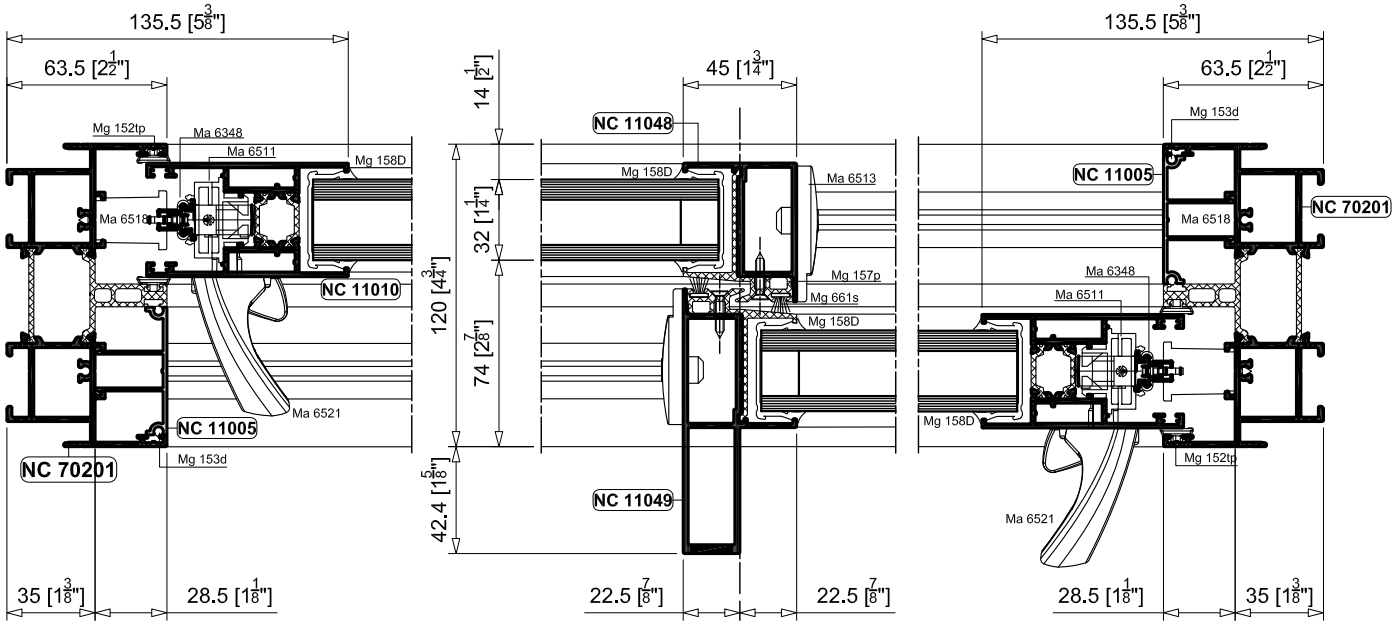
NC-S 120 SD	4 Sashes 2 Tracks Sections	replaces page of	DATE 2009/11







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SCALE 1:3

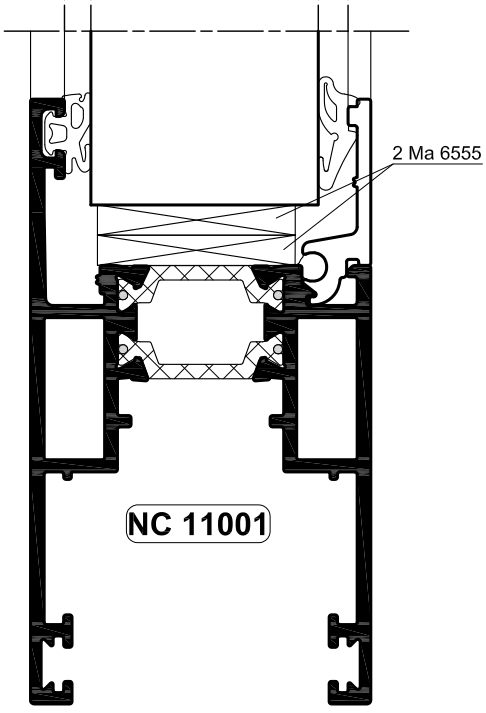
GLAZING
SASH 45°

External gasket	Glass thickness	Internal gasket	Glass stop dimension	Glass stop
B	21 [13/16"]	F	8 mm [5/16"]	8 [5/16"] NC11007
B	22 [7/8"]	F		
B	23 [7/8"]	E		
B	24 [15/16"]	E		
B	25.4 [1"]	D		
B	26 [1"]	F	3 mm [1/8"]	3 [1/8"] NC11004
B	27 [1 1/16"]	F		
B	28 [1 1/8"]	E		
B	29 [1 1/8"]	E		
B	30 [1 3/16"]	D		

IMPORTANT:
The dimensions shown are theoretical.

The profiles dimensions and glass thickness are subject to production tolerances and must be always checked.

Any eventual difference between the theoretical dimensions and the real ones can be adjusted by changing the internal gasket.



	Code	Ref.	Dimension
Outside Gaskets	Mg 386D	B	3.5 mm [1/8"]
	Mg 761D	C	4 mm [3/16"]

Inside Gaskets	Mg 612D	D	3 mm [1/8"] to 4 mm [3/16"]
	Mg 613D	E	4.5 mm [3/16"] to 6 mm [1/4"]
	Mg 614D	F	6.5 mm [1/4"] to 8 mm [5/16"]

Scale 1:1

GLAZING
OVERHEAD FIXED FRAME

External gasket	Glass thickness	Internal gasket	Glass stop dimension	Glass stop
B	20 [13/16"]	F	30 mm	30 [1 3/16"] NC 7613
B	21 [13/16"]	E		
B	22 [7/8"]	E		
B	23 [7/8"]	D		
B	24 [15/16"]	F	25 mm	25 [1"] NC 7612
B	25.4 [1"]	F		
B	26 [1"]	E		
B	27 [1 1/16"]	E		
B	28 [1 1/8"]	D		
B	29 [1 1/8"]	F	20 mm	20 [13/16"] NC 7611
B	30 [1 3/16"]	F		
B	31 [1 1/4"]	E		
B	32 [1 1/4"]	E		

IMPORTANT:
The dimensions shown are theoretical.

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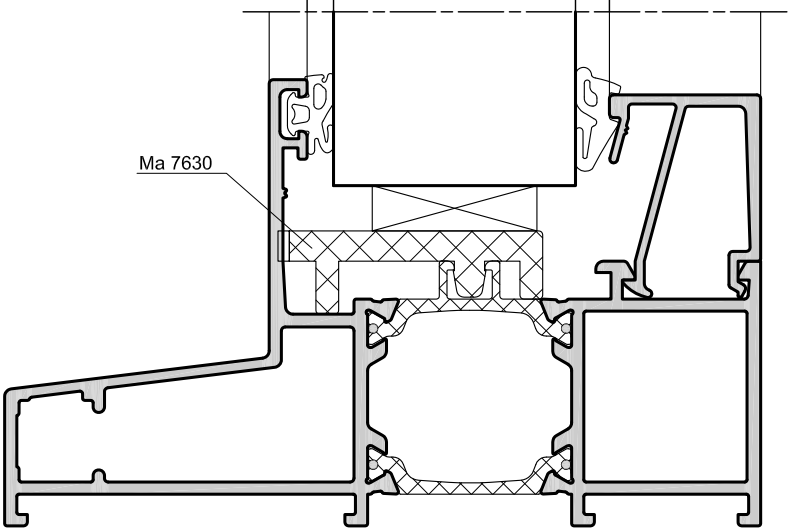
Any eventual difference between the theoretical dimensions and the real ones can be adjusted by changing the internal gasket.



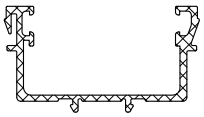
NC 11070

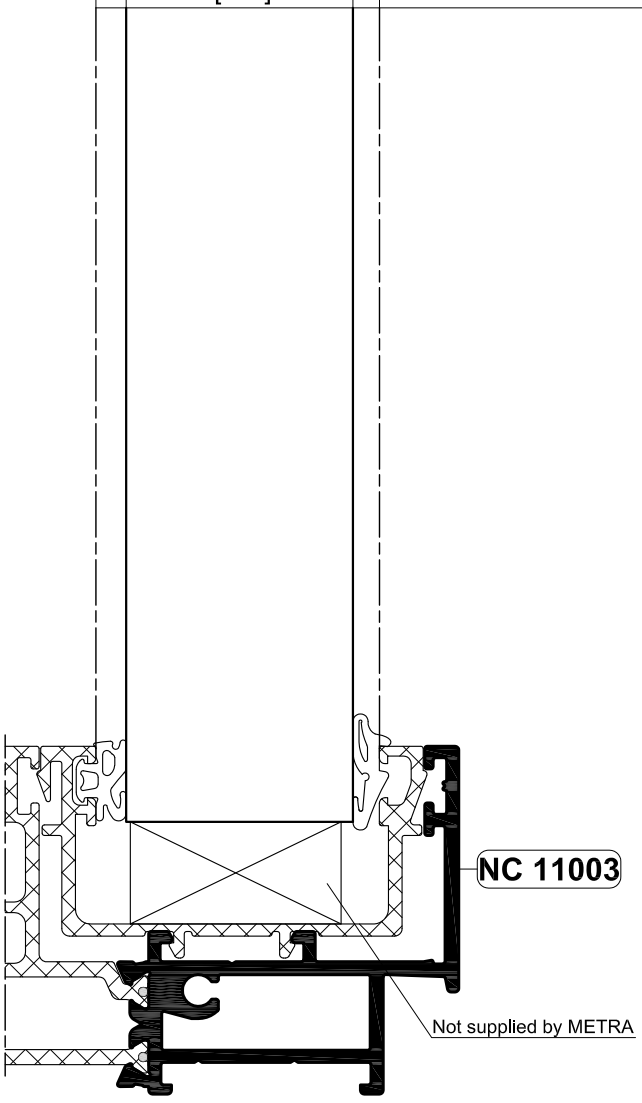
	Code	Ref.	Dimension
Outside Gaskets	Mg 386D	B	3.5 mm [1/8"]
	Mg 761D	C	4 mm [3/16"]

Inside Gaskets	Mg 612D	D	3 mm [1/8"] to 4 mm [3/16"]
	Mg 613D	E	4.5 mm [3/16"] to 6 mm [1/4"]
	Mg 614D	F	6.5 mm [1/4"] to 8 mm [5/16"]

Scale 1:1

GLAZING
FIXED

External gasket	Glass thickness	Internal gasket	Spacer for fixed sash glazing
B	25.4 [1"]	D	 Mg 165P
B	26 [1"]	F	
B	27 [$1\frac{1}{16}$"]	F	
B	28 [$1\frac{1}{8}$"]	E	
B	29 [$1\frac{1}{8}$"]	E	
B	30 [$1\frac{3}{16}$"]	D	



IMPORTANT:
The dimensions shown are theoretical.

The profiles dimensions and glass thickness are subject to production tolerances and must be always checked.

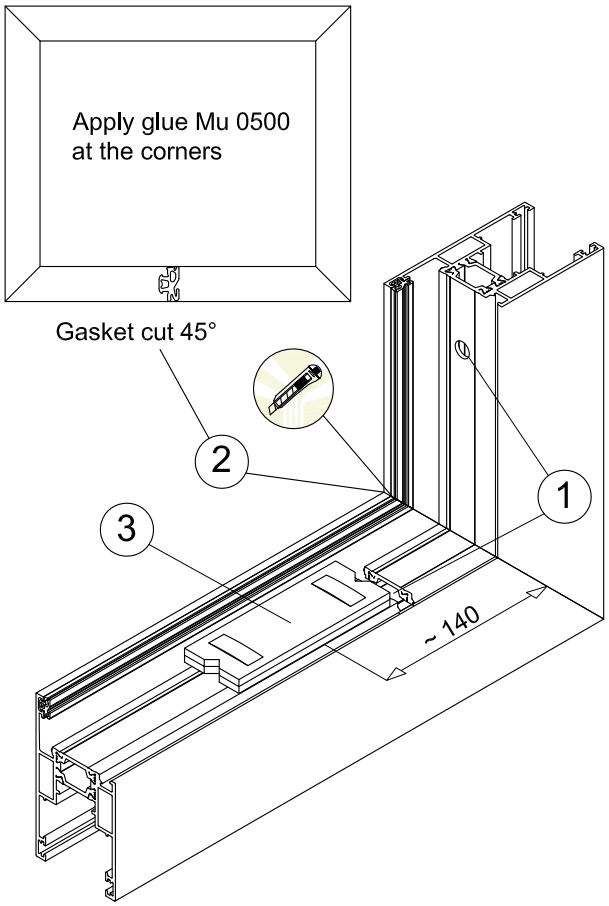
Any eventual difference between the theoretical dimensions and the real ones can be adjusted by changing the internal gasket.

	Code	Ref.	Dimension
Outside Gaskets	Mg 386D	B	3.5 mm [$\frac{1}{8}$"]
	Mg 761D	C	4 mm [$\frac{3}{16}$"]

Inside Gaskets	Mg 612D	D	3 mm [$\frac{1}{8}$"] to 4 mm [$\frac{3}{16}$"]
	Mg 613D	E	4.5 mm [$\frac{3}{16}$"] to 6 mm [$\frac{1}{4}$"]
	Mg 614D	F	6.5 mm [$\frac{1}{4}$"] to 8 mm [$\frac{5}{16}$"]

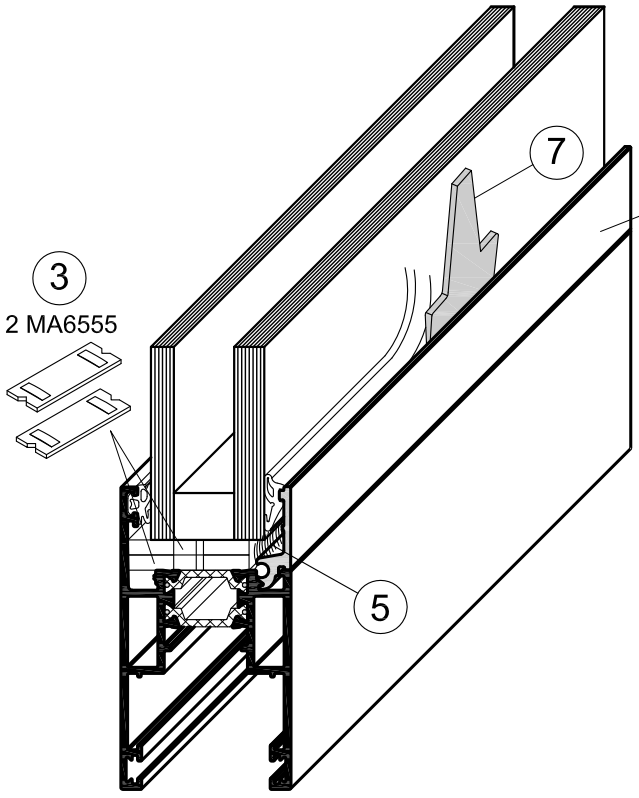
Scale 1:1

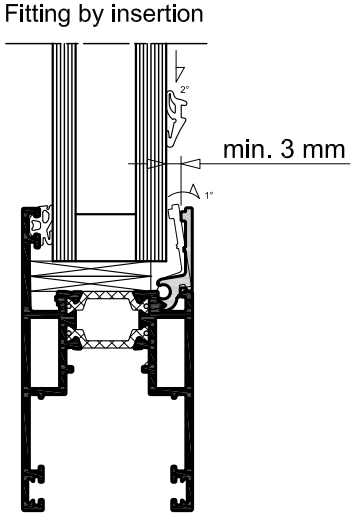
GLAZING
FITTING OF THE GLASS



1. **Check that the machining for drainage and ventilation is done in conformity with technical catalogues prescriptions (refer to table E2 01).**
2. **Carry out the external gasket assembly. Seal the corners (external gasket) and the upper central junction (internal gasket).**
3. **Position the glass sheet pressing it with care against the external gasket during the insertion of the dowels.**
   The spacing dowels must be paced as per the figure aside; they stabilize the positioning of the glazing.
4. **Check the correct squaring of the sash by measuring the diagonals.**
5. **Seal the support bases and the dowels in order to constrain them to the profile.**
6. **Fit the glass stop by insertion method.**
7. **Press the glass sheet against the external gasket by means of a specific wedge-shaped tool.**
8. **Insert the internal gasket for glass and place it using a roller tool.**
9. **In order to make the insertion easier, we recommend to lublicate the gasket.**

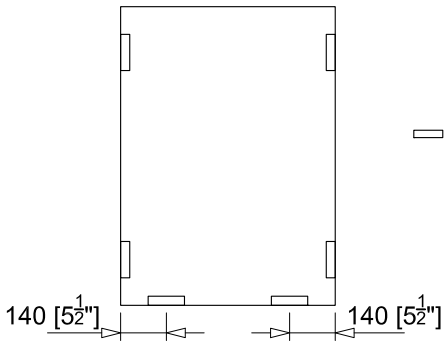
CHECK THE CORRECT OPERATION OF THE SASH





GLAZING

POSITIONING OF SPACING DOWELS

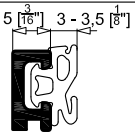
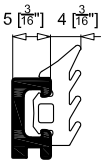


For the correct opening/closing operation and functioning of the gaskets both of windows and doors, it is essential to provide the correct shimming of glazing.

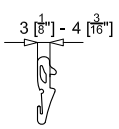
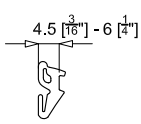
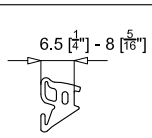
Use the dowels as shown in the catalogue.

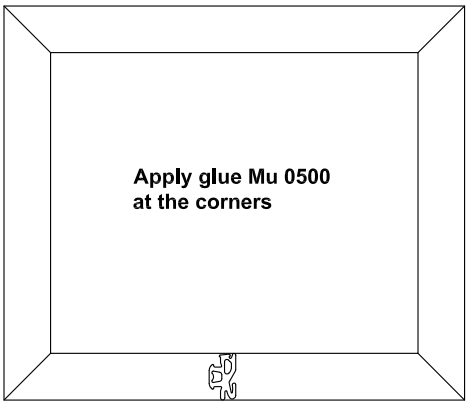
INDICATIONS FOR THE USE OF GASKETS FOR GLAZING

External gaskets for glazing

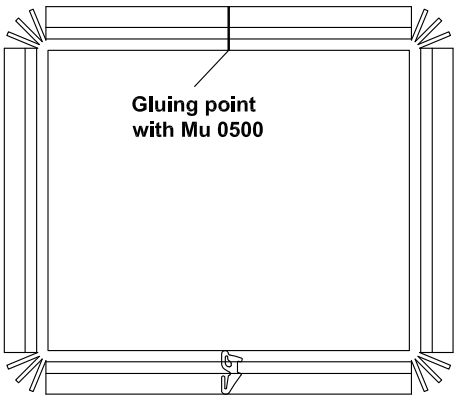
Code	Dimension	Material	Color	Fitting
Mg 386d		EPDM	Black	Cut 45°
Mg 761d		EPDM	Black	Cut 45°

Internal gaskets for glazing

Code	Dimension	Reference	Material	Color	Fitting
Mg 612d			EPDM	Black	Continuous along the perimeter
Mg 613d		Rif. Verde 	EPDM	Black	Continuous along the perimeter
Mg 614d		Rif. Bianco  Rif. Blu	EPDM	Black	Continuous along the perimeter



Gasket cut 45°



Continuous gasket along the perimeter

The tables for the use of glazing and gaskets for glazing published in this catalogue show working dimensions purely theoretical. It is necessary to choose the glass stop and the gaskets considering the real dimensions of glazing and profiles determined by the production tolerances.