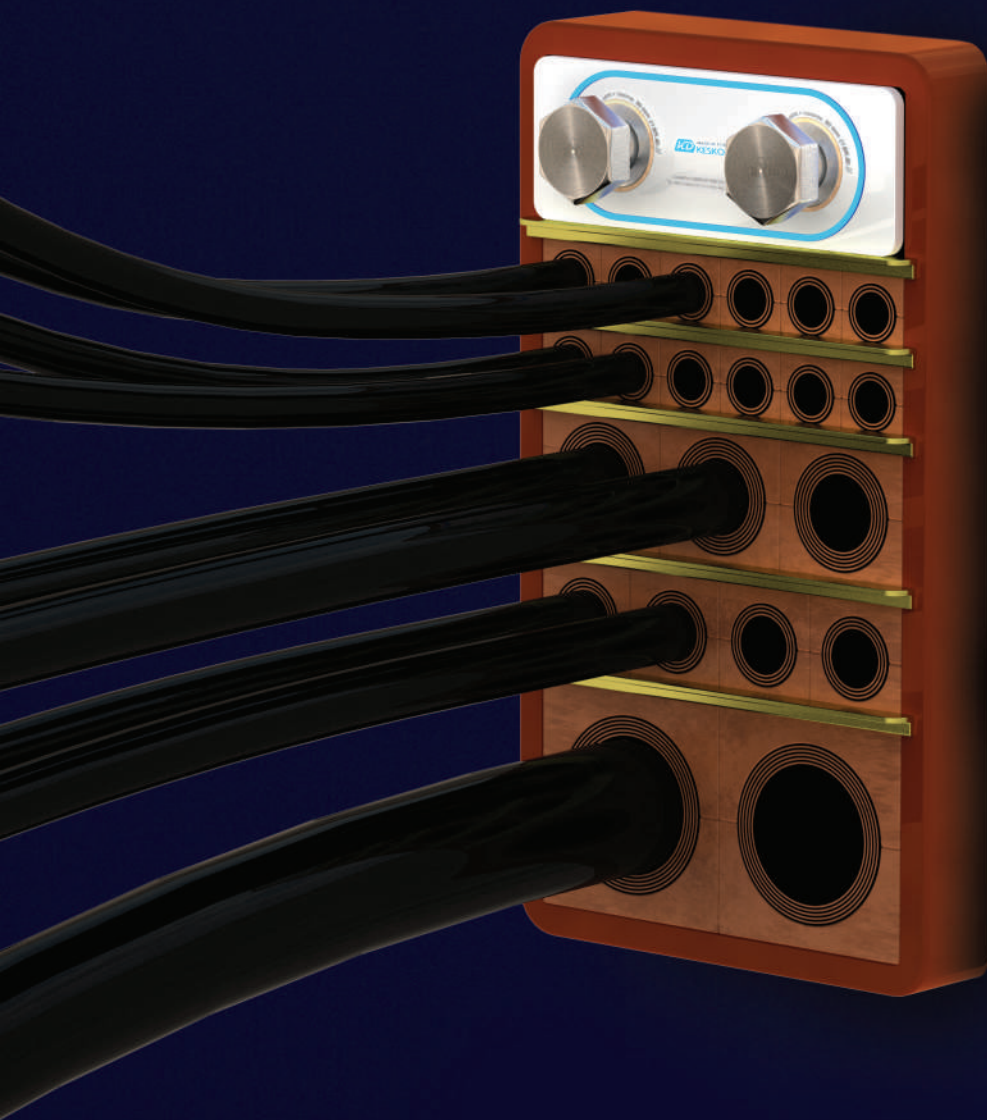


Multi Cable Transit

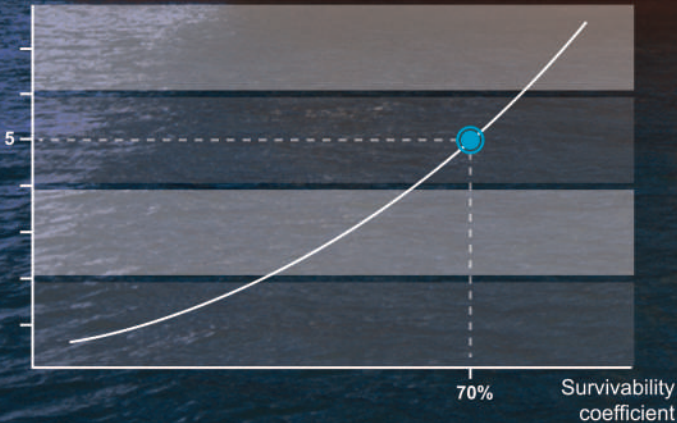


Are you safe?

But, industrial disasters can be with everyone.
Are you safe from these disasters?
KUKDONG ELECOM's Multi Cable Transit provides
the best reliability and safety in installment, construction and change.



Delay time (minute)



*A five-minute delay of fire transit
when there is a fire can increase
the rate of survival by 70%.*



Our industries should be completely protected from disasters.

The fields of our industries should be rich and safe places without disasters. We have the responsibility to make all industrial fields including ship building, plants and nuclear power plants safe from disasters.





The components of Multi Cable Transit



H-120 (Bulkhead TYPE)
BV TYPE APPROVAL CERTIFICATE



H-120
(Deck TYPE : RGP(O) Series)



H-120
(Deck TYPE : RGS Series)



A60 MCT FRAME
(EC-TYPE EXAMINATION)



JET FIRE TEST based on
"OTI 95 634" regulation



IP67



ISO14001



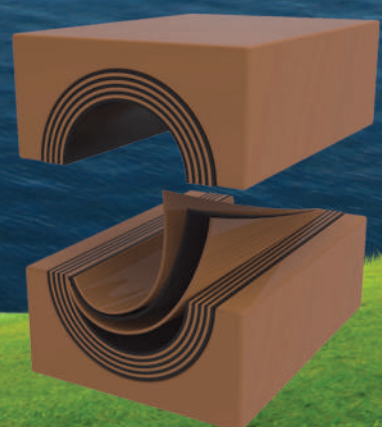
ISO9001



2012.12 BV CERT will be issued soon
H-120 (Deck Type)
JET FIRE TEST

KUKDONG ELECOM is in pursuit of being the “Best” in safety.

KUKDONG ELECOM is a company that put a high value on human dignity. At KUKDONG ELECOM, we staff members have pulled out all the stops for “Safety” for the past 20 years. Our technology for humans has won global reputation.



Multi Cable Transit
The Structure of Multi layer
Insert Block for Multi Cable Transit

KUKDONG ELECOM's Multi Cable Transit is a multi-player product.

KUKDONG ELECOM's Multi Cable Transit is a multi-player product that has been completed through long-term technological research and development.

KUKDONG ELECOM's Multi Cable Transit is a multiple product that makes it possible to cope with any situation and place.

Your choice of KUKDONG ELECOM's Multi Cable Transit will clearly be the best choice.



2004 Established the KUKDONG ELECOM Research Institute
Developed a new type of multi cable transit



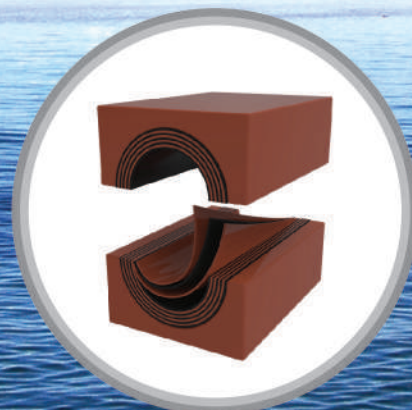
Southeast Economic Region strategic industry appraisal Pass



Development of Insert Block and End Packing Using EMI Blocking Multi Layered Sheet for Nuclear Power Plant



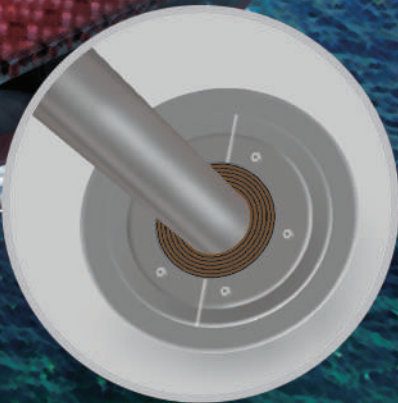
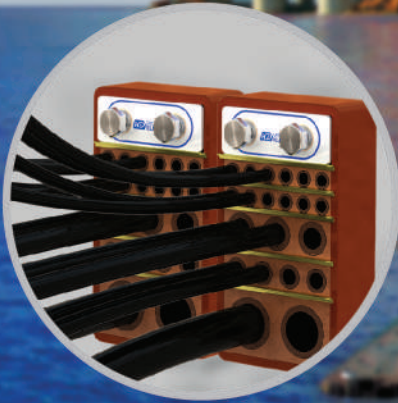
Development of Insert Block and End Packing Using EMI Blocking Multi Layered Sheet for Marine Use







Multi Cable Transit from KUKDONG ELECOM doesn't separate the places and time. Wherever the safety is needed, be with the Multi Cable Transit from KUKDONG. Offshore plants, vessel, dock, atomic energy, wind power generation, bridge etc.







Multi Cable Transit

Solutions for Every Application

SMART SHIP : LNG / LPGC / ULCS / ICE SHIP

GREEN SHIP : Cruiser / CNGC

EXTREME OCEAN PLANT: FSRU / FPSO / Mobile Harbor

Nuclear power plant applications

Onshore oil, gas storage and petrochemical applications

Buildings / Constructions



Jet Fire Test



H-120 Test (Bulkhead Type)



Multi Cable Transit

Certified Protection

TYPE APPROVAL CERTIFICATE :

H-120 (Bulkhead Type)

H-120 (Deck Type)

JET FIRE TEST based on "OTI 95 634" regulation

IP67

PATENT APPLICATION :

The Structure of Multi layer Insert Block for Multi Cable Transit

Multi Layer Insert Block Sheet for Multi Cable Transit Using Thermoplastic Vulcanizate

End Packing for Cable Transit



H-120 Test (Deck Type)

Multi Cable Transit

Adaptable sealing system is protected against hazards induced by fire, smoke, gas, water and EMC environment.

The Multi Cable Transit is the excellent fireproof, low smoke, water and gas-tight method of passing cables from one compartment to another. It is simple, expedient and economical - giving much more protection than conventional stuffing tubes while drastically reducing time and installation cost.

● MULTI CABLE TRANSIT 패킹 시스템은 안전하고 최적화된 격벽 간 배선을 지원합니다.

- 화재, 연기, 가스, 물, EMC환경에 완벽히 대응,
- 기존 방식에 비해 설치시간단축, 비용절감
- 간단한 설치, 안전한 구조

application

Penetrations of bulkhead and deck for water and gas - tight fireproof and low smoke

Penetrations for weather deck

Penetrations for electrical equipment

Fire and explosion-proof of hazardous areas

Thermal barrier for all penetrations

Sound and vibration-free in entries for cables and pipes

● 적용분야 : 격벽 / 갑판, 방폭지역, 방열지역, 방음 / 방진지역



Contents

RGS Frame Series: RGS	-----	21
RGS Frame Series: RGSF	-----	39
RGS Frame Series: RGSS / RGSW	-----	57
RGS Frame Series: RGSR	-----	67
RGP Frame Series: RGP	-----	76
RGP Frame Series: RGP(O)	-----	77



RGS Frame Series: Overall

RGS

RGS is standard one of frames. It has standard dimensions of internal width 120mm and depth 60mm. There are four sizes of RGS 2, RGS 4, RGS 6, and RGS 8 according to their height. Multiple frames consist of two or more arranged either horizontally, vertically or a combination of both. RGS frame is made of mild steel, stainless steel or aluminium alloy.

- 표준
용도 : 다중설치 가능
규격 : 가로120mm 세로 (높이에따라 RGS2, RGS4, RGS6, RGS8) 깊이60mm
재질 : 스틸, 스텐레스, 알루미늄 합금



RGSF

RGSF is a standard RGS frame with flange, and is used where the opening is not exactly adapted to the dimensions of RGS frame. RGSF has four standard sizes of 2,4,6 and 8. The flange has dimensions of width 60mm and thickness 10mm.

- 플랜지타입
용도 : 벽 / 바닥의 개구부와 프레임 사이즈가 상이할 경우
규격 : 세로 (높이에따라 RGSF2, RGSF4, RGSF6, RGSF8)
(플랜지 : 폭60mm / 두께10mm)
재질 : 스틸, 스텐레스, 알루미늄 합금



RGSS / RGSW

RGSS is an extended frame in combination with a standard RGS frame which is used in a welded collar. RGSS frames are recommended when lack of space or accessibility make it necessary to mount the frame at a distance from the deck or bulkhead. RGSS is available in the four standard sizes of 2,4,6 and 8.

- 칼라타입
용도 : 공간 및 접근성 제약으로 벽 / 바닥면에서 거리를 이격하여 설치할 필요가 있을 경우
규격 : 세로 (높이에따라 RGSS2, RGSS4, RGSS6, RGSS8)
재질 : 스틸, 스텐레스, 알루미늄 합금



RGSR

RGSR is a frame with round corners, and is used for deck and bulkhead which is subjected to high degree of stress to avoid crack or distortion by high stresses. These frames have also four standard sizes of 2,4,6 and 8. The corner radius is 70mm.

- 원형코어타입
용도 : 벽 / 바닥면이 높은 압력을 수용해야할 경우
규격 : 세로 (높이에따라 RGSR2, RGSR4, RGSR6, RGSR8) 반지름70mm
재질 : 스틸, 스텐레스, 알루미늄 합금





RGS Frame Series: RGS



RGS - 6

RGS - 6x2

RGS - 6+6

RGS - 6+6x3



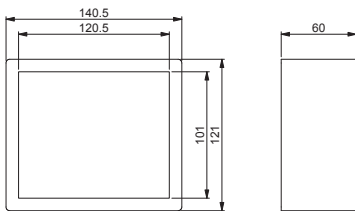
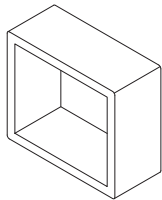
unit : mm

Frame Size	H(Height)	W(Width)							
		n=1	n=2	n=3	n=4	n=5	n=6	n=x	
RGS - 2xn	121	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn	
RGS - 4xn	179.5	140.5	271	401.5	532	662.5	793		
RGS - 6xn	238	140.5	271	401.5	532	662.5	793		
RGS - 8xn	296.5	140.5	271	401.5	532	662.5	793		
RGS - 2+2xn	242		271	401.5	532	662.5	793		
RGS - 2+4xn	300.5		271	401.5	532	662.5	793		
RGS - 2+6xn	359		271	401.5	532	662.5	793		
RGS - 2+8xn	417.5		271	401.5	532	662.5	793		
RGS - 4+4xn	359		271	401.5	532	662.5	793		
RGS - 4+6xn	417.5		271	401.5	532	662.5	793		
RGS - 4+8xn	476		271	401.5	532	662.5	793		
RGS - 6+6xn	476		271	401.5	532	662.5	793		
RGS - 6+8xn	534.5		271	401.5	532	662.5	793		
RGS - 8+8xn	593		271	401.5	532	662.5	793		
RGS - 2+2	232	140.5	<ul style="list-style-type: none"> n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm Material thickness : 10mm 						
RGS - 2+4	290.5	140.5							
RGS - 2+6	349	140.5							
RGS - 2+8	407.5	140.5							
RGS - 4+4	349	140.5							
RGS - 4+6	407.5	140.5							
RGS - 4+8	466	140.5							
RGS - 6+6	466	140.5							
RGS - 6+8	524.5	140.5							
RGS - 8+8	583	140.5							

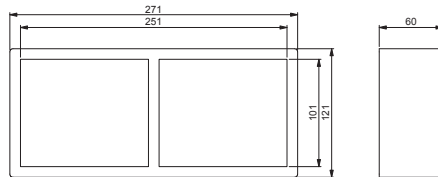
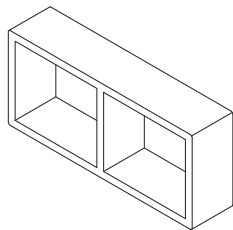


RGS Frame Series: RGS

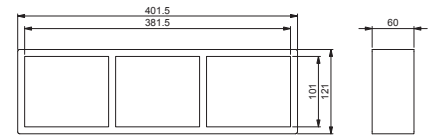
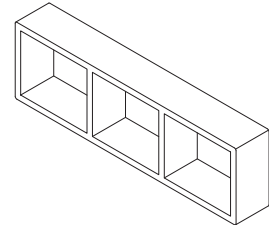
RGS-2x1



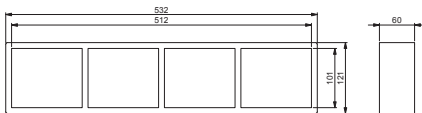
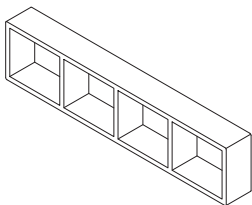
RGS-2x2



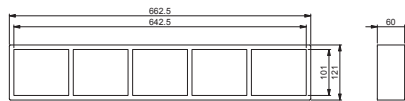
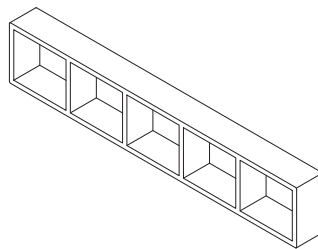
RGS-2x3



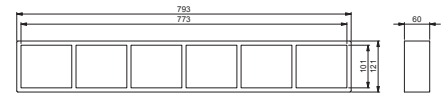
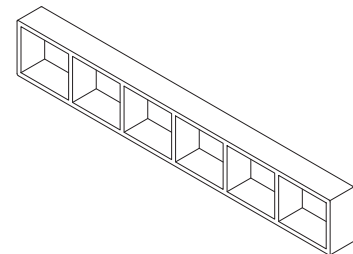
RGS-2x4



RGS-2x5



RGS-2x6



unit : mm

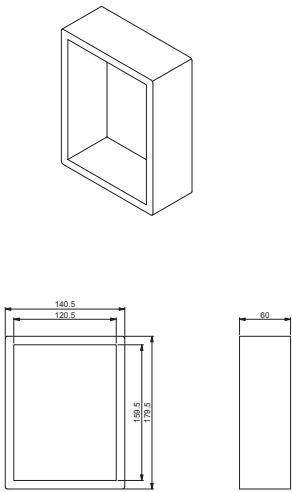
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 2xn	121	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

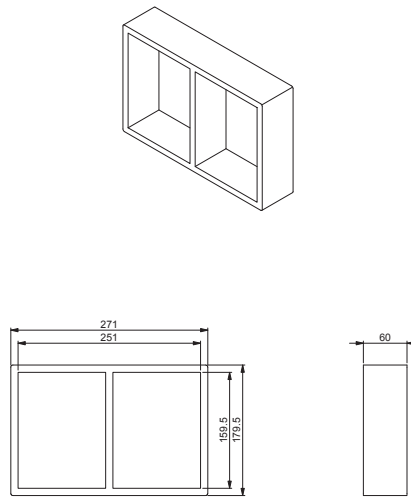


RGS Frame Series: RGS

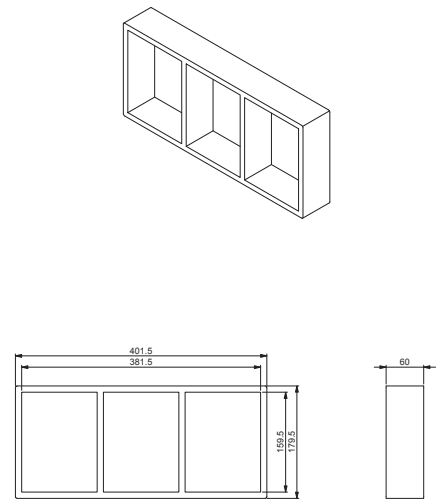
RGS-4x1



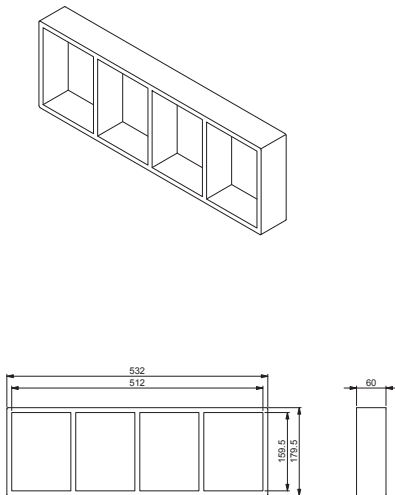
RGS-4x2



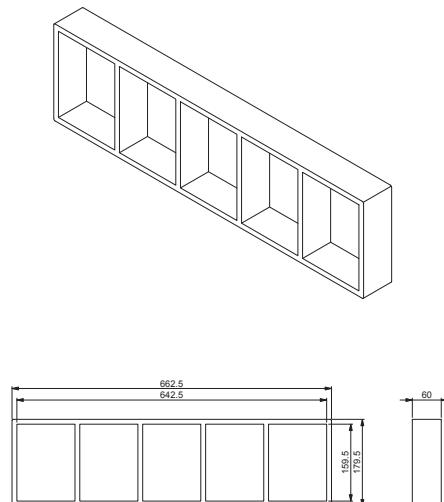
RGS-4x3



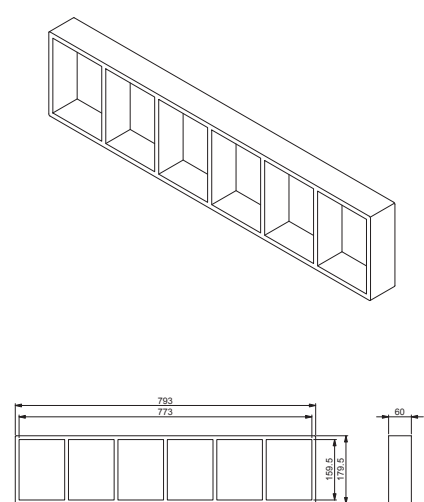
RGS-4x4



RGS-4x5



RGS-4x6



unit : mm

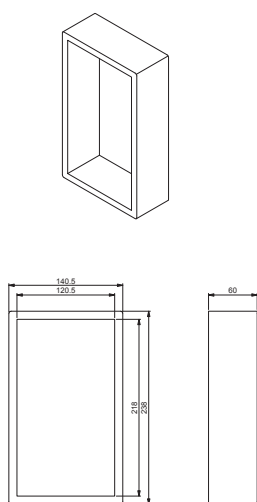
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 4xn	179.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

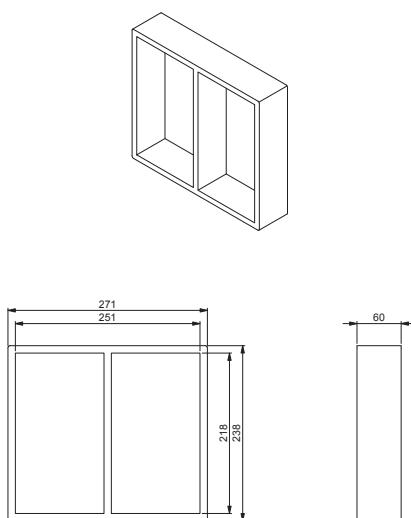


RGS Frame Series: RGS

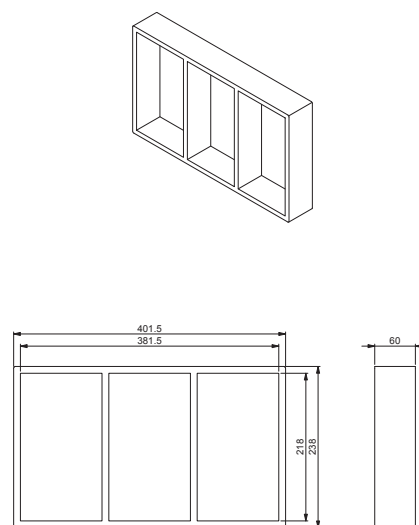
RGS-6x1



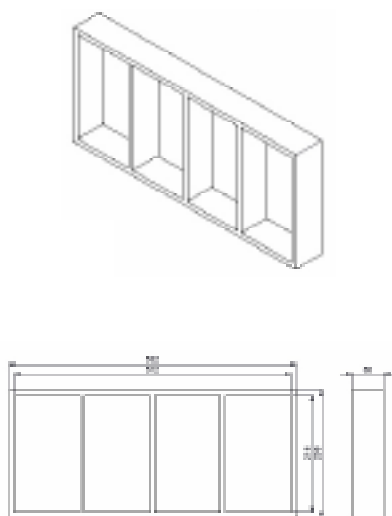
RGS-6x2



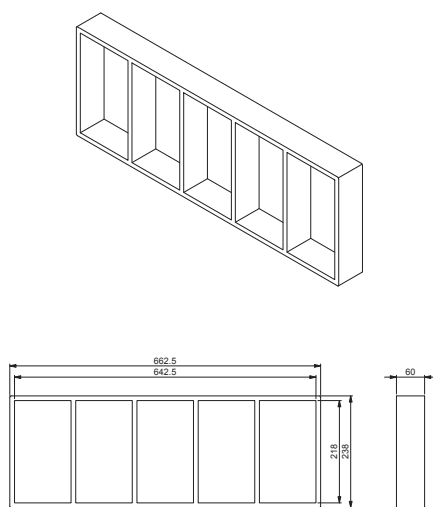
RGS-6x3



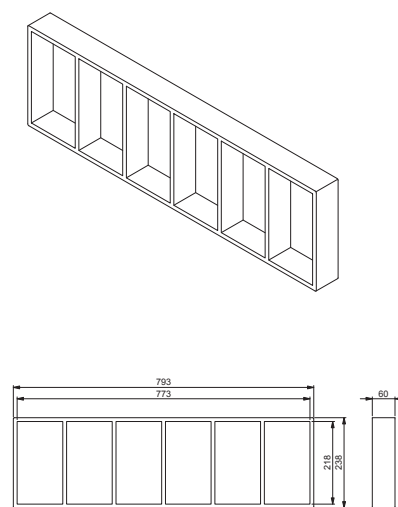
RGS-6x4



RGS-6x5



RGS-6x6



unit : mm

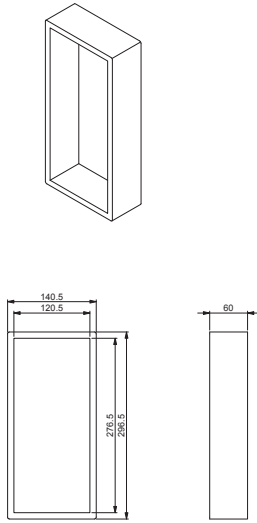
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 6xn	238	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

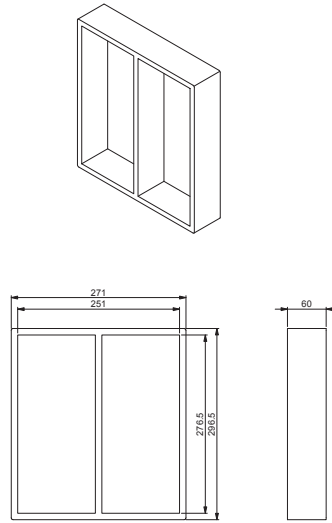


RGS Frame Series: RGS

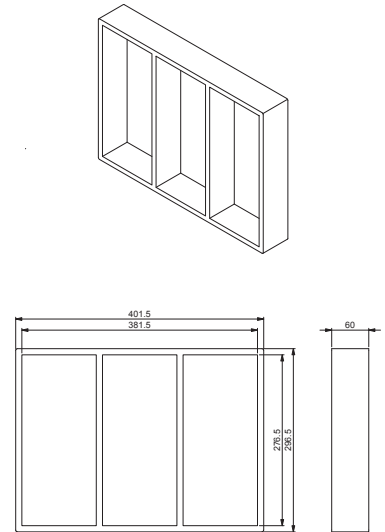
RGS-8x1



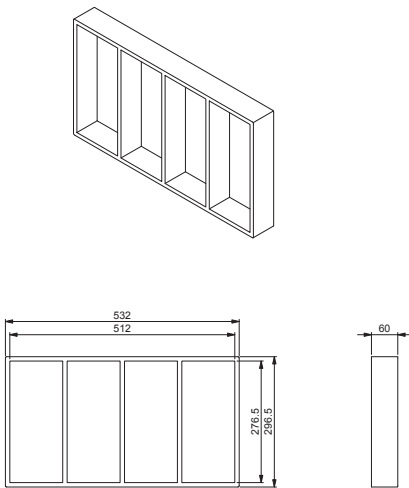
RGS-8x2



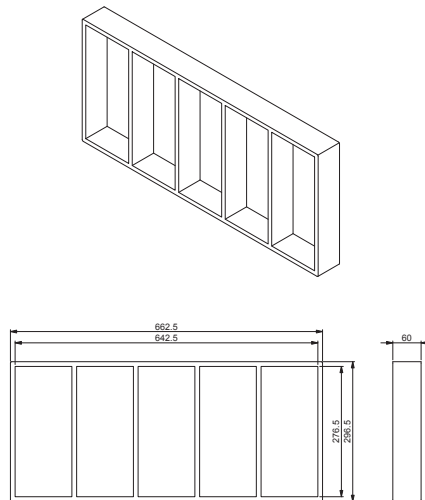
RGS-8x3



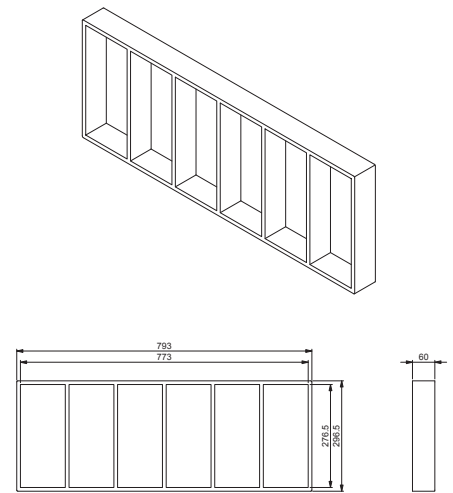
RGS-8x4



RGS-8x5



RGS-8x6



unit : mm

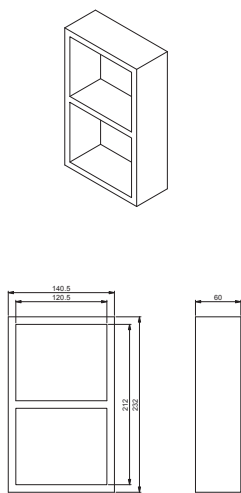
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 8xn	296.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

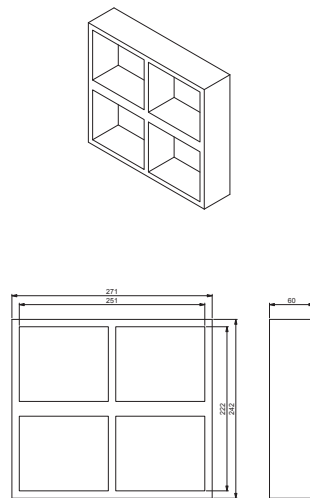


RGS Frame Series: RGS

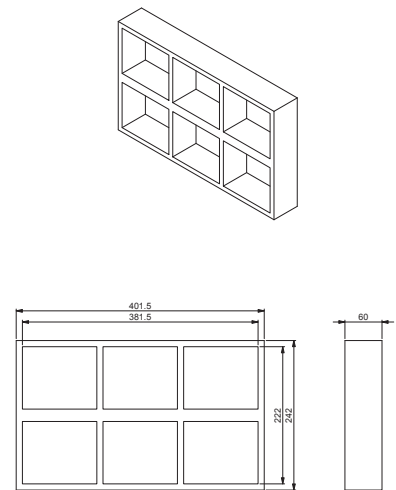
RGS-2+2x1



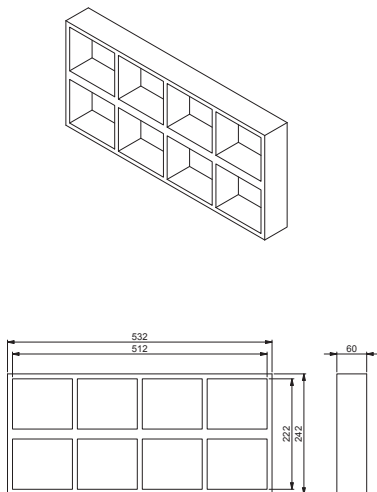
RGS-2+2x2



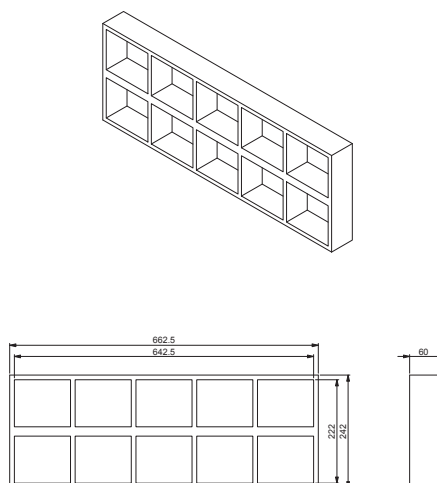
RGS-2+2x3



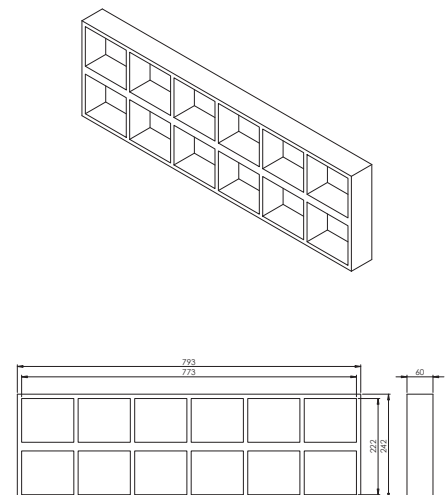
RGS-2+2x4



RGS-2+2x5



RGS-2+2x6



unit : mm

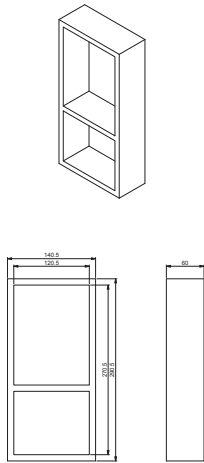
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 2+2xn	242		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

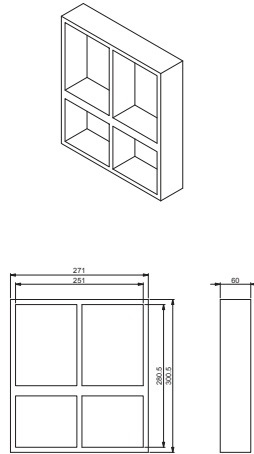


RGS Frame Series: RGS

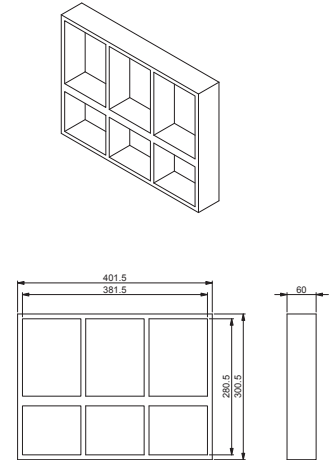
RGS-2+4x1



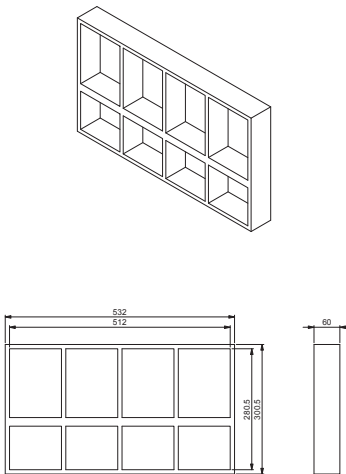
RGS-2+4x2



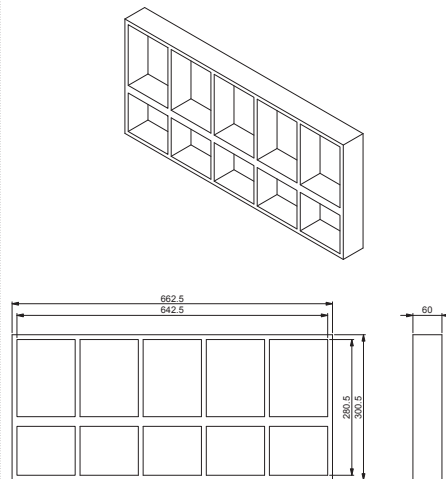
RGS-2+4x3



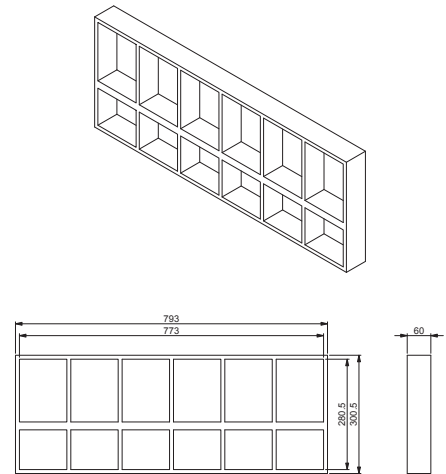
RGS-2+4x4



RGS-2+4x5



RGS-2+4x6



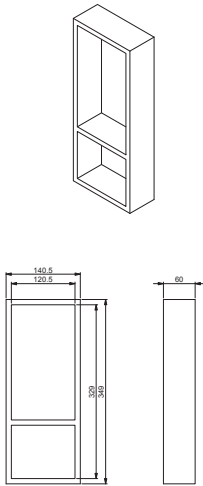
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 2+4xn	300.5		271	401.5	532	662.5	793	w=10+ 130.5xn

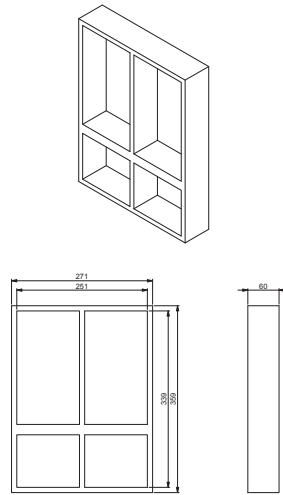
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGS

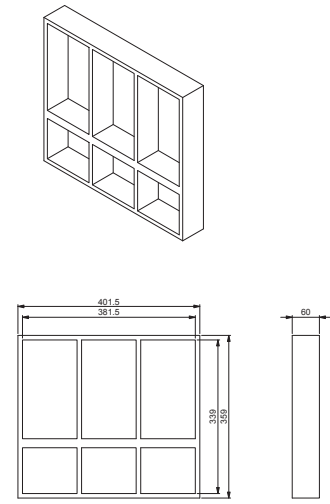
RGS-2+6x1



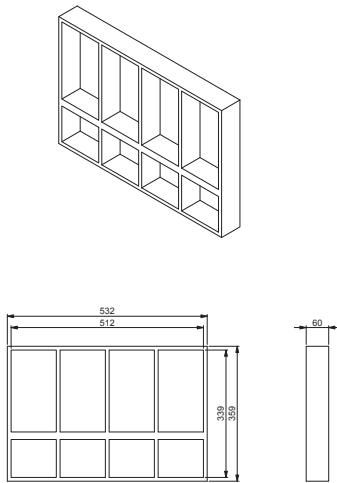
RGS-2+6x2



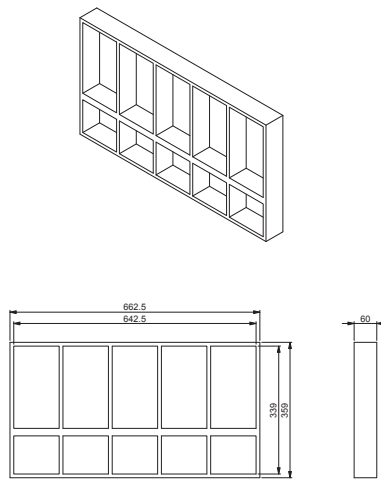
RGS-2+6x3



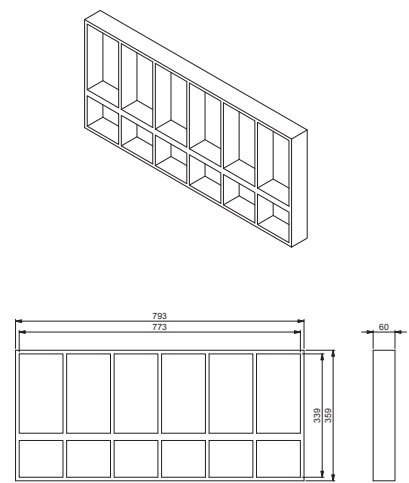
RGS-2+6x4



RGS-2+6x5



RGS-2+6x6



unit : mm

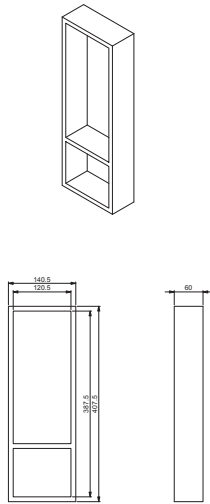
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 2+6xn	359		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

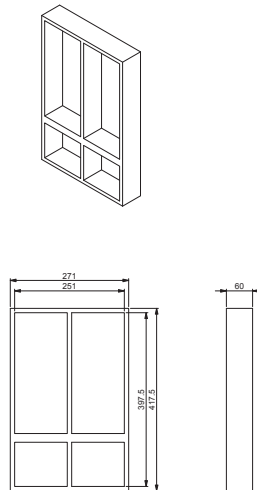


RGS Frame Series: RGS

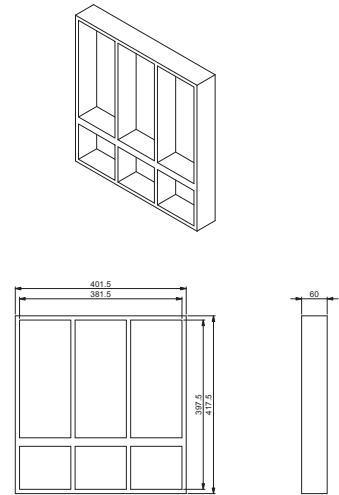
RGS-2+8x1



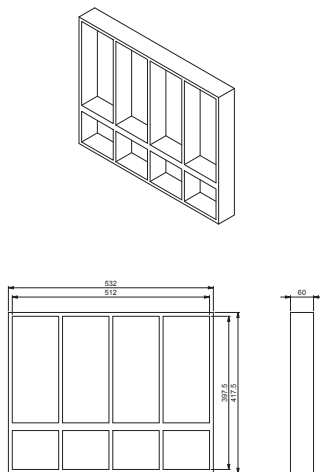
RGS-2+8x2



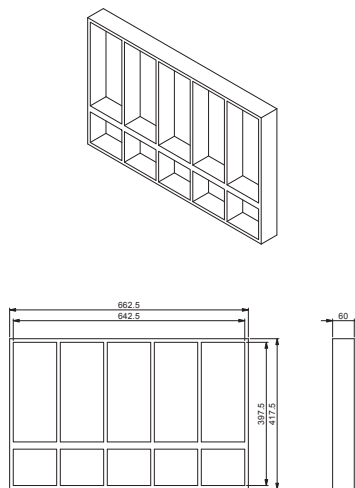
RGS-2+8x3



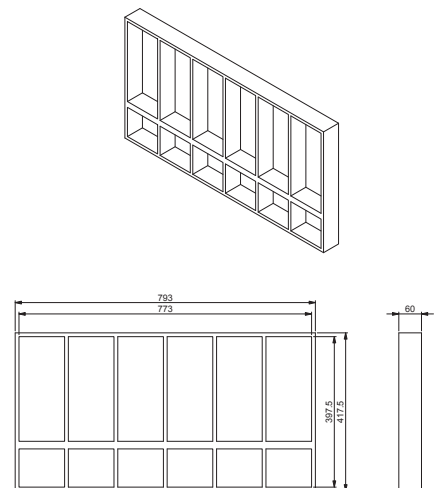
RGS-2+8x4



RGS-2+8x5



RGS-2+8x6



unit : mm

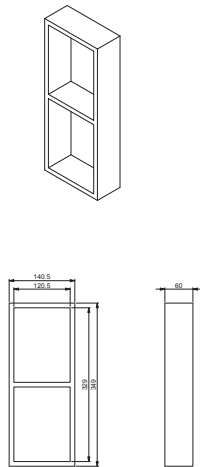
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 2+8xn	417.5		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

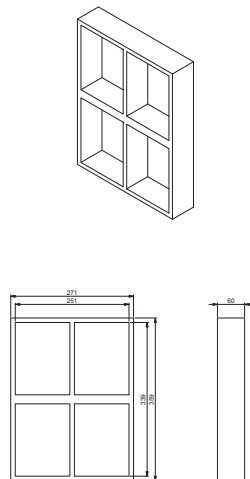


RGS Frame Series: RGS

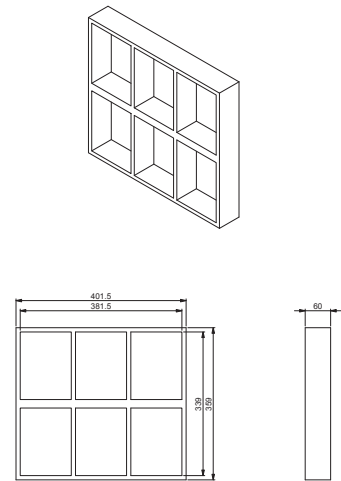
RGS-4+4x1



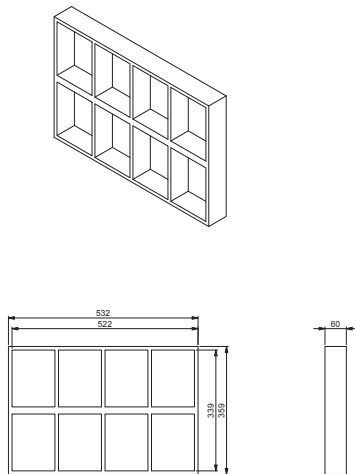
RGS-4+4x2



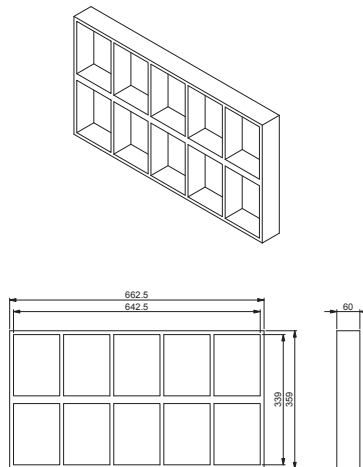
RGS-4+4x3



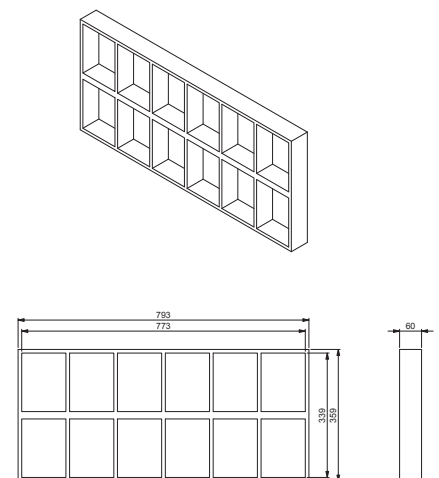
RGS-4+4x4



RGS-4+4x5



RGS-4+4x6



unit : mm

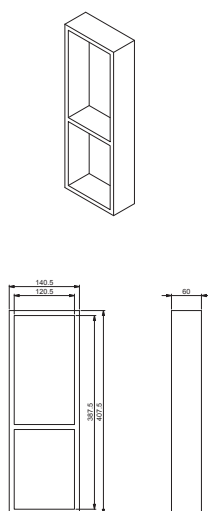
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 4+4xn	359		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

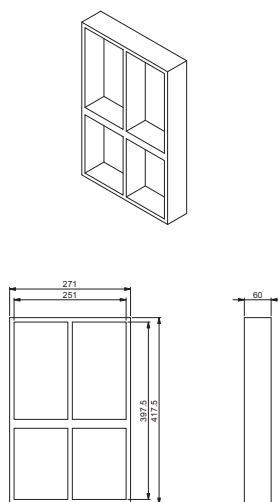


RGS Frame Series: RGS

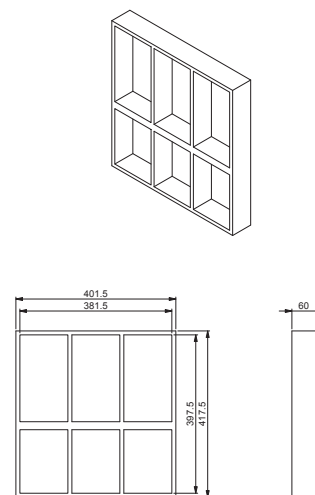
RGS-4+6x1



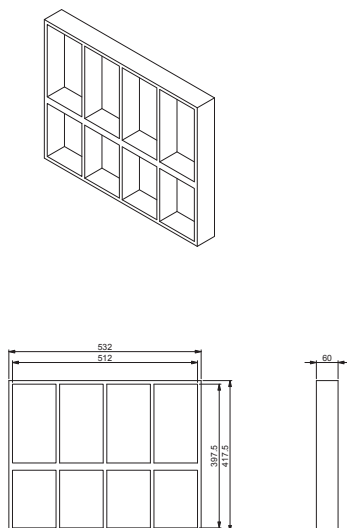
RGS-4+6x2



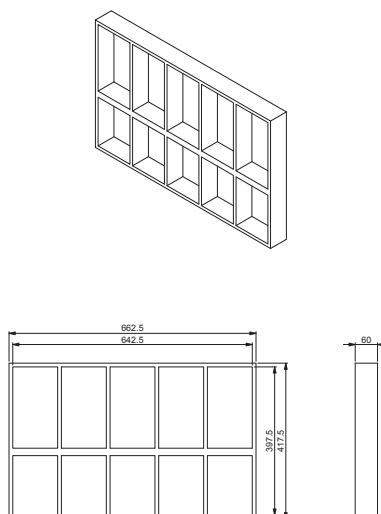
RGS-4+6x3



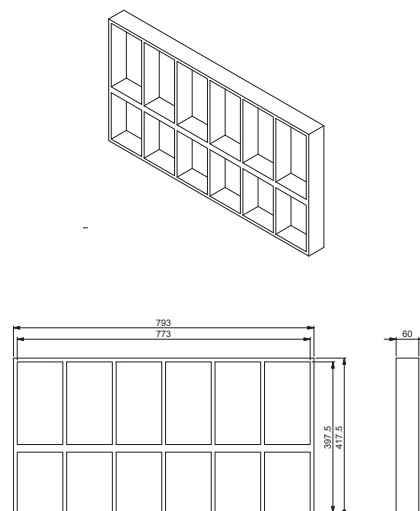
RGS-4+6x4



RGS-4+6x5



RGS-4+6x6



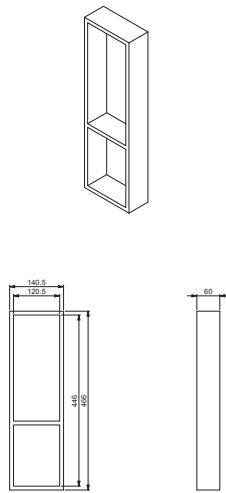
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 4+6xn	417.5		271	401.5	532	662.5	793	w=10+ 130.5xn

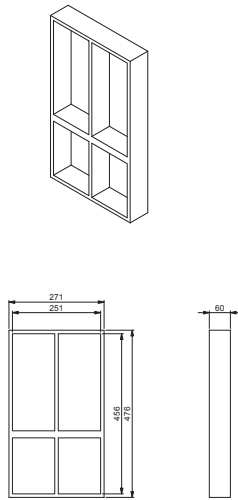
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGS

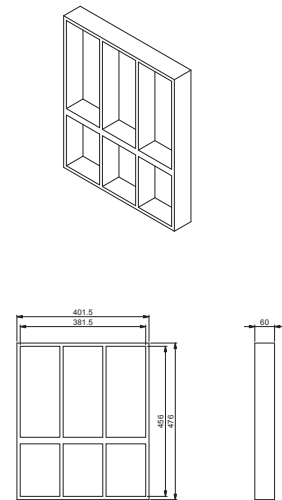
RGS-4+8x1



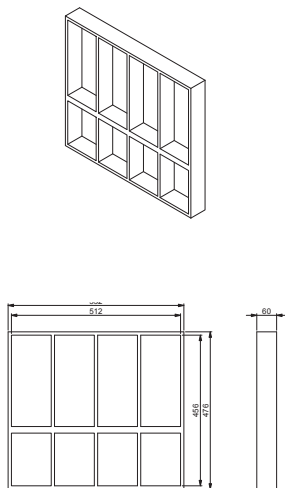
RGS-4+8x2



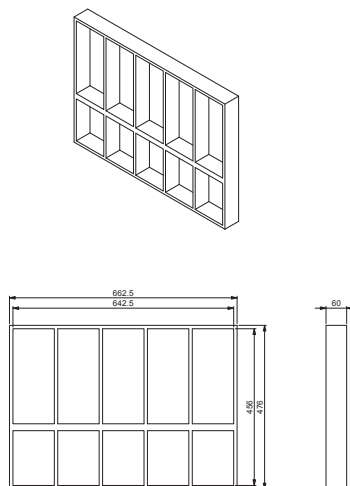
RGS-4+8x3



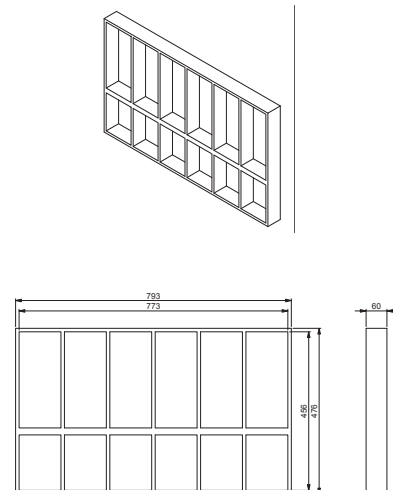
RGS-4+8x4



RGS-4+8x5



RGS-4+8x6



unit : mm

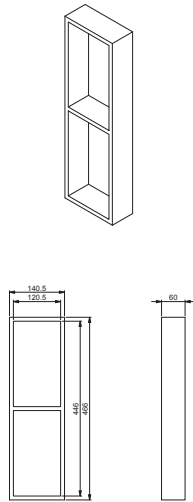
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 4+8xn	476		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

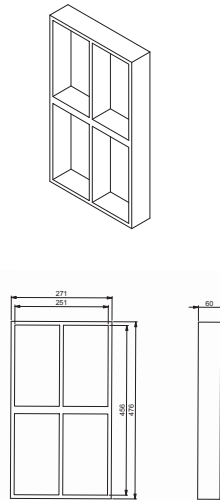


RGS Frame Series: RGS

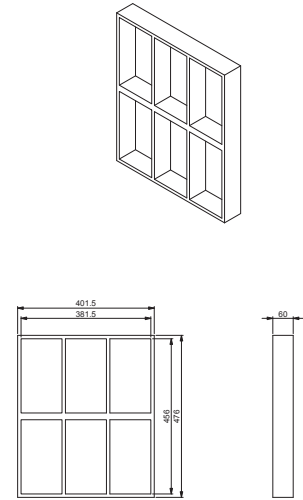
RGS-6+6x1



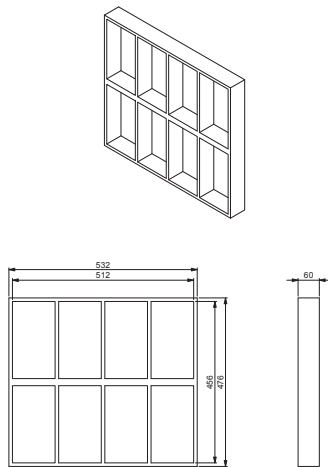
RGS-6+6x2



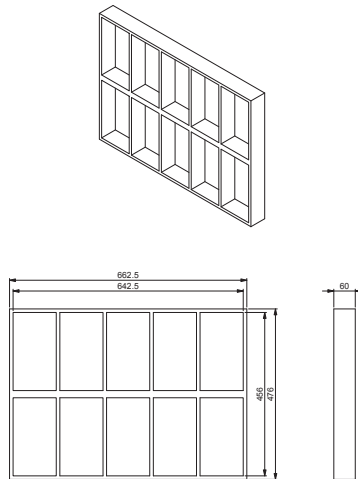
RGS-6+6x3



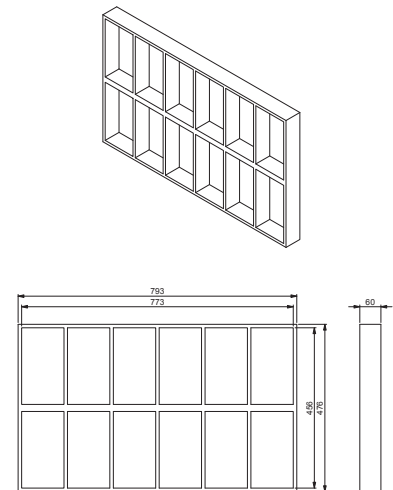
RGS-6+6x4



RGS-6+6x5



RGS-6+6x6



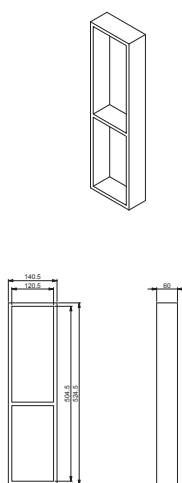
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 6+6xn	476		271	401.5	532	662.5	793	w=10+ 130.5xn

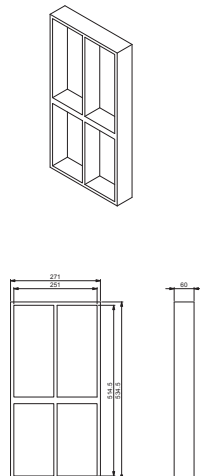
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGS

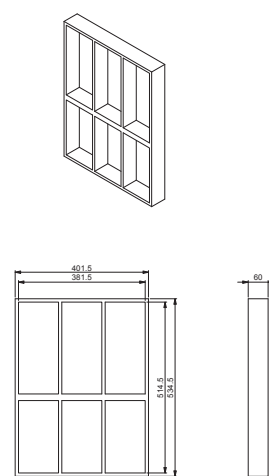
RGS-6+8x1



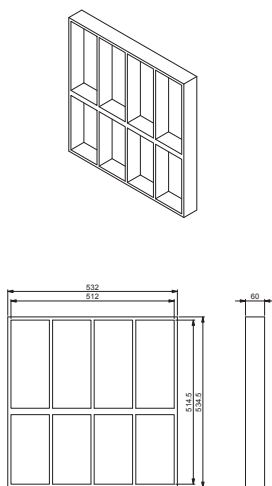
RGS-6+8x2



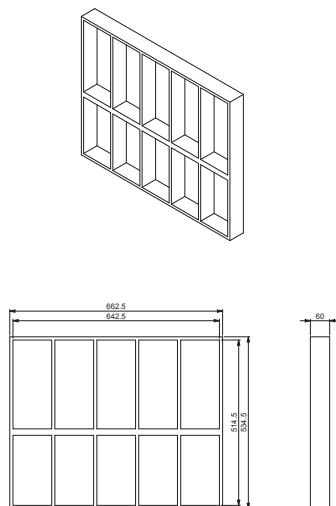
RGS-6+8x3



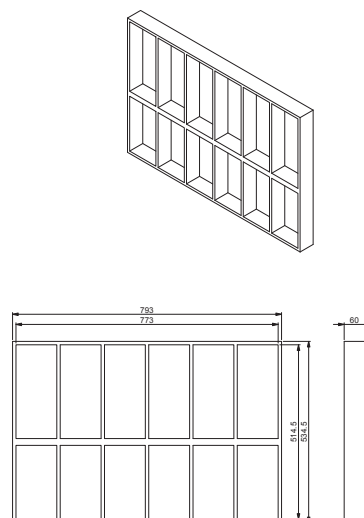
RGS-6+8x4



RGS-6+8x5



RGS-6+8x6



unit : mm

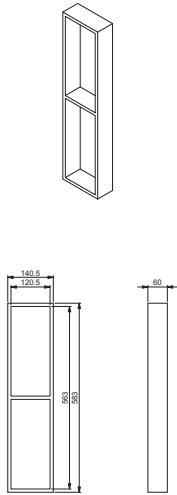
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 6+8xn	534.5		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

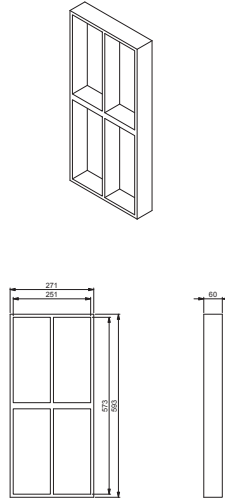


RGS Frame Series: RGS

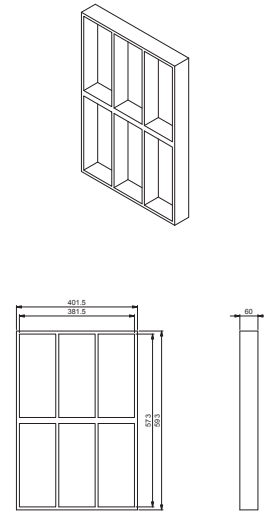
RGS-8+8x1



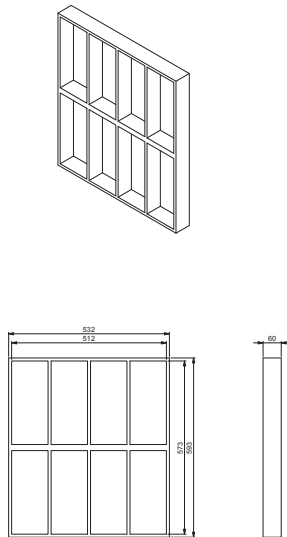
RGS-8+8x2



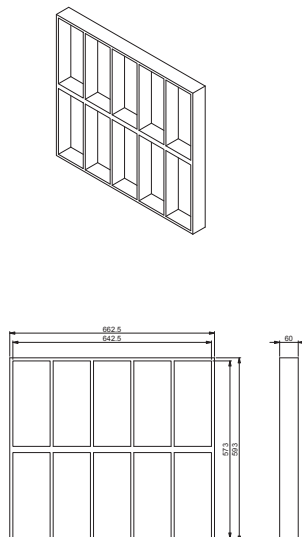
RGS-8+8x3



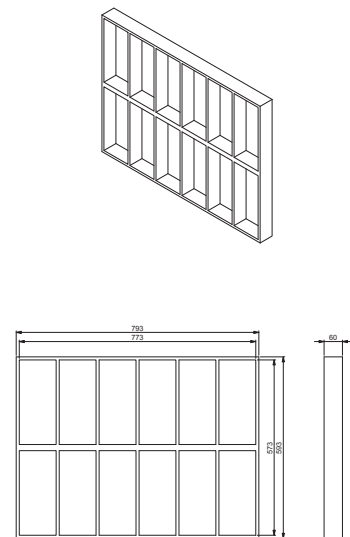
RGS-8+8x4



RGS-8+8x5



RGS-8+8x6



unit : mm

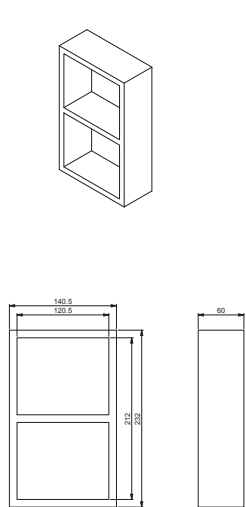
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGS - 8+8xn	593		271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

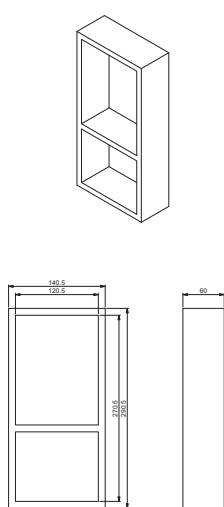


RGS Frame Series: RGS

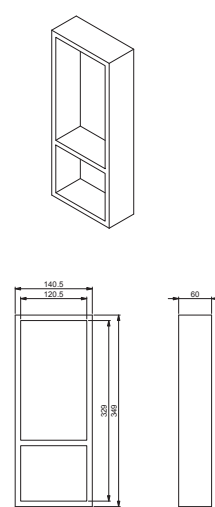
RGS-2+2



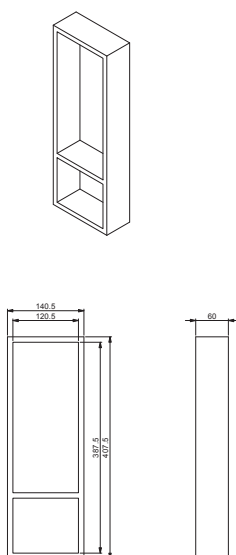
RGS-2+4



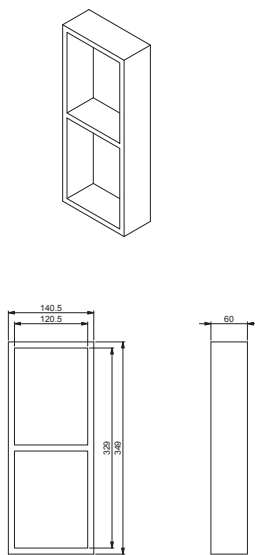
RGS-2+6



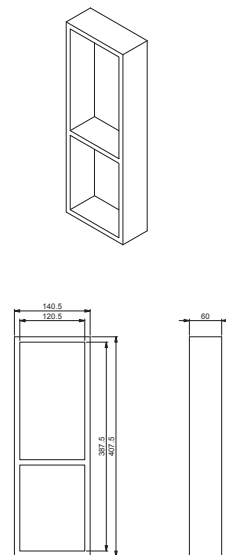
RGS-2+8



RGS-4+4



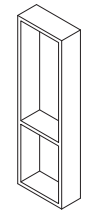
RGS-4+6



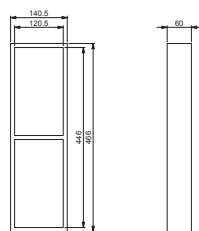
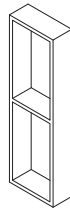


RGS Frame Series: RGS

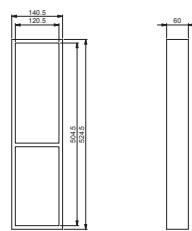
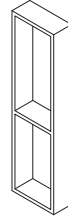
RGS-4+8



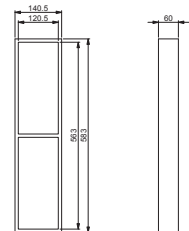
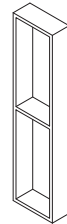
RGS-6+6



RGS-6+8



RGS-8+8



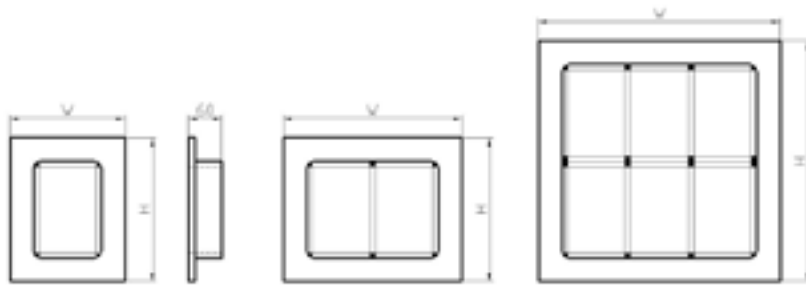
unit : mm

Frame Size	H(Height)	W(Width)	
		n=1	
RGS - 2+2	232	140.5	
RGS - 2+4	290.5	140.5	
RGS - 2+6	349	140.5	
RGS - 2+8	407.5	140.5	
RGS - 4+4	349	140.5	
RGS - 4+6	407.5	140.5	
RGS - 4+8	466	140.5	
RGS - 6+6	466	140.5	
RGS - 6+8	524.5	140.5	
RGS - 8+8	583	140.5	

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm



RGS Frame Series: RGSF



RGSF - 6

RGSF - 6x2

RGSF - 6+6x2

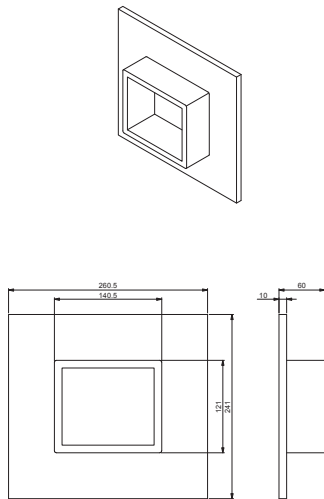


unit : mm

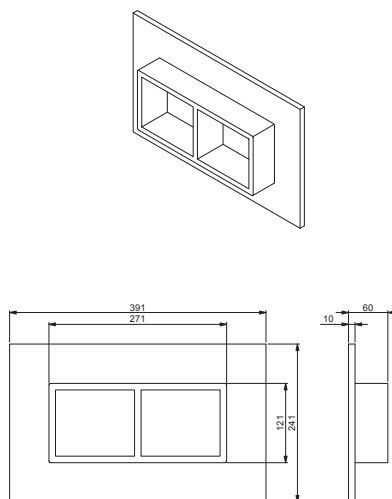
Frame Size	H (Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=7
RGSF - 2xn	241	260.5	391	521.5	652	782.5	913	w=130+ 130.5xn
RGSF - 4xn	299.5	260.5	391	521.5	652	782.5	913	
RGSF - 6xn	358	260.5	391	521.5	652	782.5	913	
RGSF - 8xn	416.5	260.5	391	521.5	652	782.5	913	
RGSF - 2+2xn	362		391	521.5	652	782.5	913	
RGSF - 2+4xn	420.5		391	521.5	652	782.5	913	
RGSF - 2+6xn	479		391	521.5	652	782.5	913	
RGSF - 2+8xn	537.5		391	521.5	652	782.5	913	
RGSF - 4+4xn	479		391	521.5	652	782.5	913	
RGSF - 4+6xn	537.5		391	521.5	652	782.5	913	
RGSF - 4+8xn	596		391	521.5	652	782.5	913	
RGSF - 6+6xn	596		391	521.5	652	782.5	913	
RGSF - 6+8xn	654.5		391	521.5	652	782.5	913	
RGSF - 8+8xn	713		391	521.5	652	782.5	913	
RGSF - 2+2	352	260.5	<ul style="list-style-type: none"> n = Number of frame width Tolerance of single frame : Height $1 \pm 1\text{mm}$ Width $\pm 0.8\text{mm}$ Material thickness : 10mm RGSF-frames are normally supplied with straight corners but are also available with round corners with a radius of 63mm					
RGSF - 2+4	410.5	260.5						
RGSF - 2+6	469	260.5						
RGSF - 2+8	527.5	260.5						
RGSF - 4+4	469	260.5						
RGSF - 4+6	527.5	260.5						
RGSF - 4+8	586	260.5						
RGSF - 6+6	586	260.5						
RGSF - 6+8	644.5	260.5						
RGSF - 8+8	703	260.5						

RGS Frame Series: RGSF

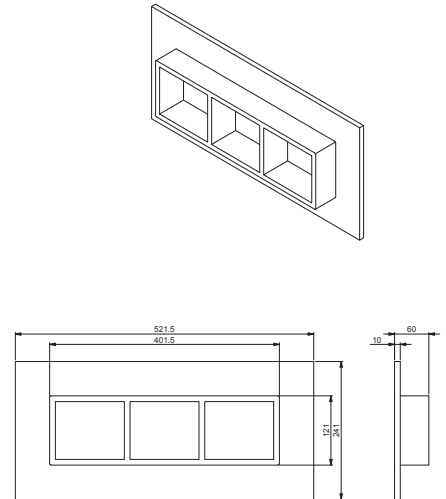
RGSF-2x1



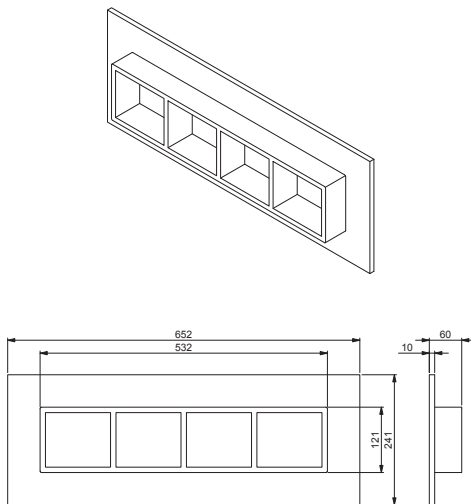
RGSF-2x2



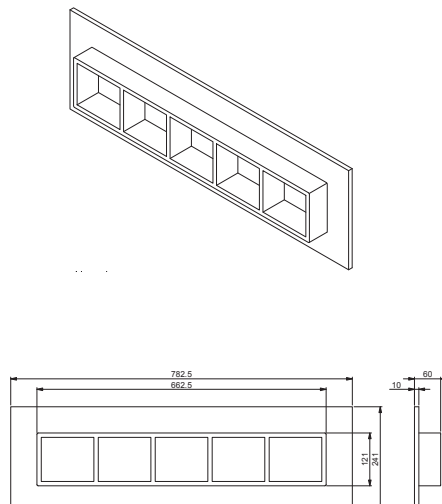
RGSF-2x3



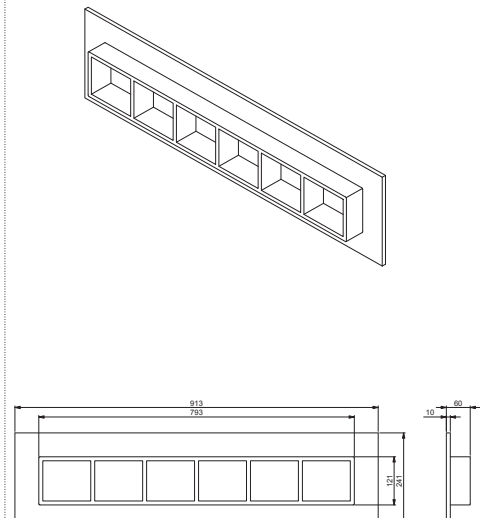
RGSF-2x4



RGSF-2x5



RGSF-2x6



unit : mm

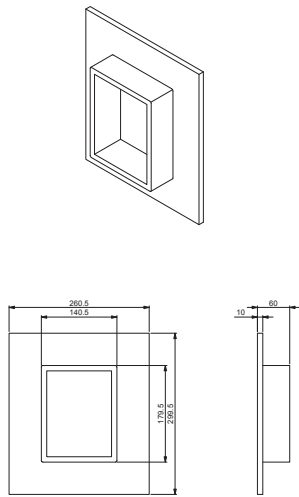
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 2xn	241	260.5	391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

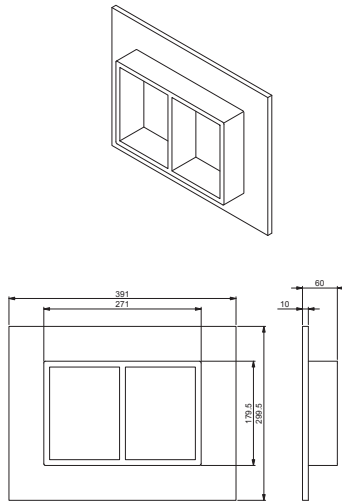


RGS Frame Series: RGSF

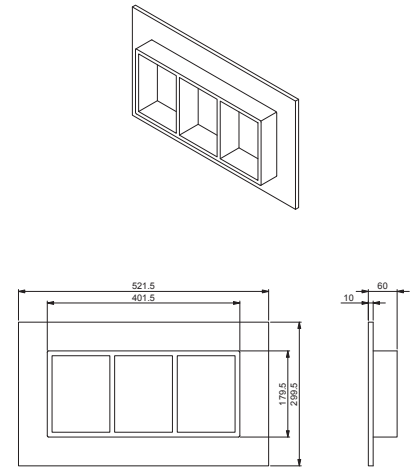
RGSF-4x1



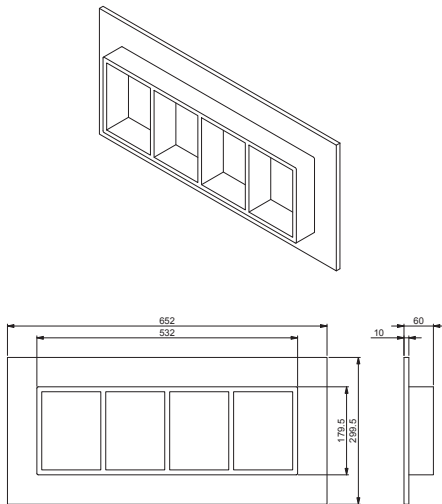
RGSF-4x2



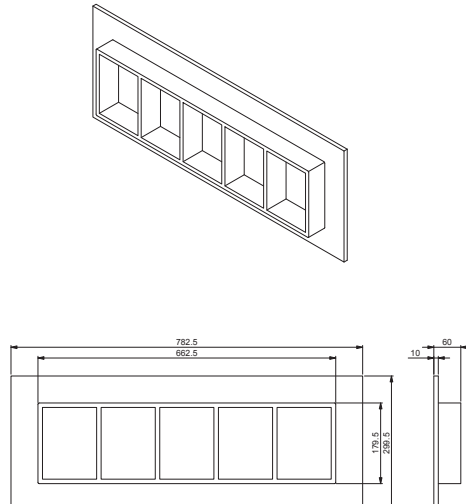
RGSF-4x3



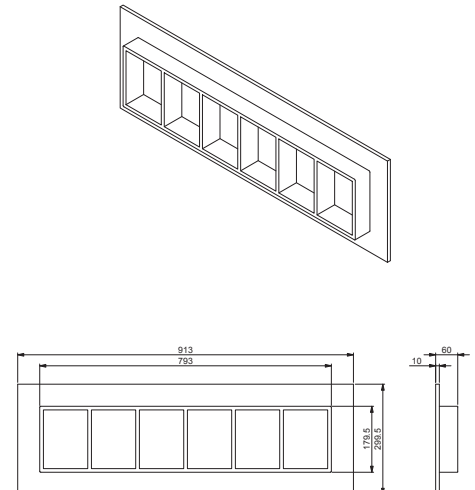
RGSF-4x4



RGSF-4x5



RGSF-4x6



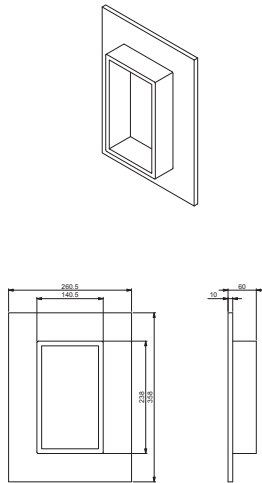
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 4xn	299.5	260.5	391	521.5	652	782.5	913	w=10+ 130.5xn

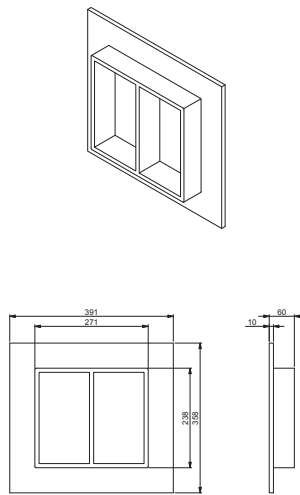
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

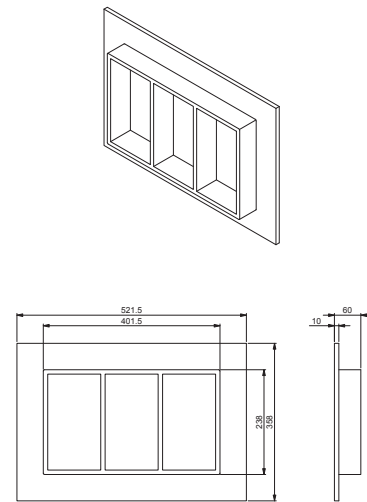
RGSF-6x1



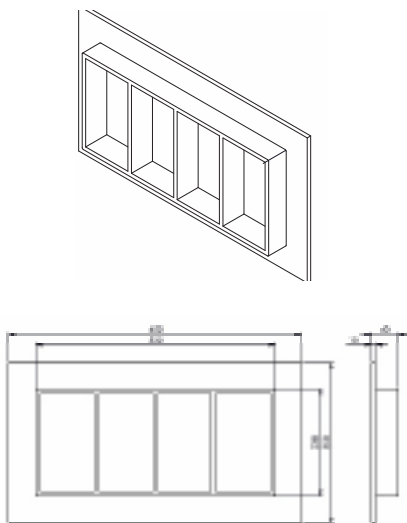
RGSF-6x2



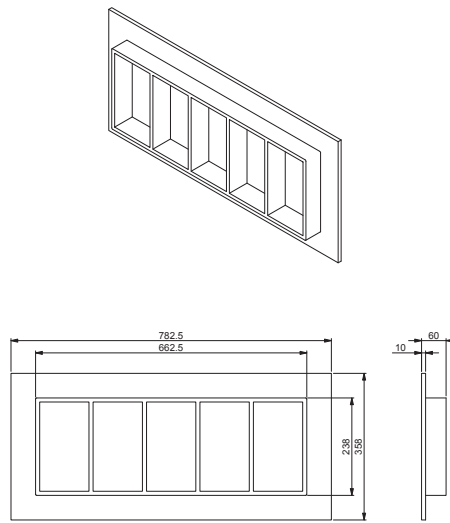
RGSF-6x3



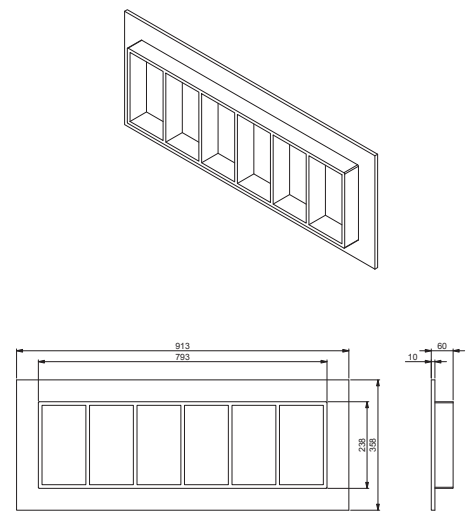
RGSF-6x4



RGSF-6x5



RGSF-6x6



unit : mm

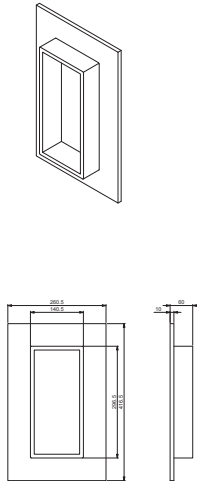
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 6xn	358	260.5	391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

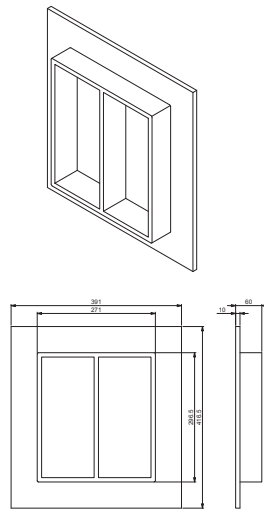


RGS Frame Series: RGSF

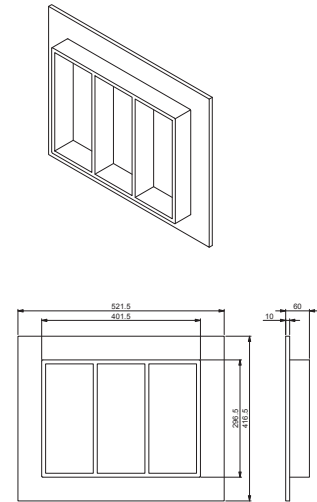
RGSF-8x1



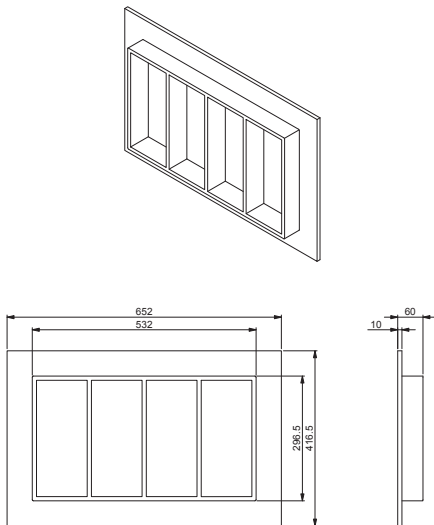
RGSF-8x2



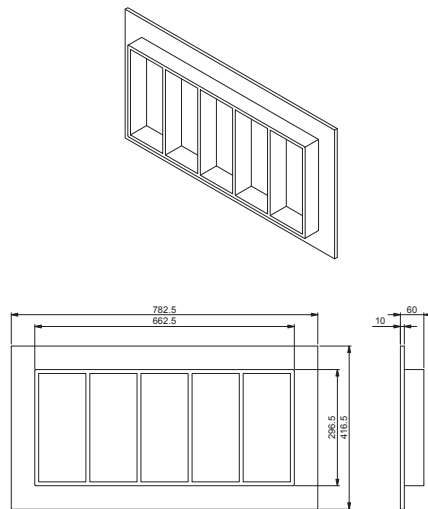
RGSF-8x3



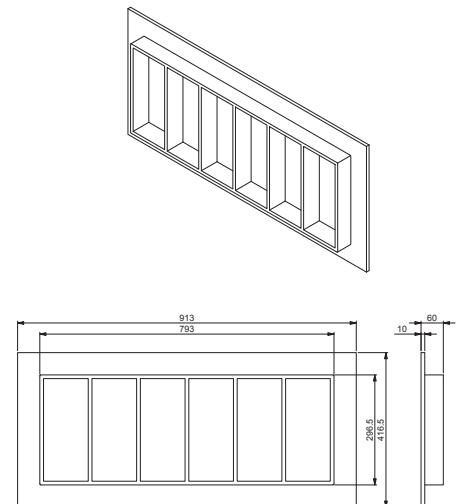
RGSF-8x4



RGSF-8x5



RGSF-8x6



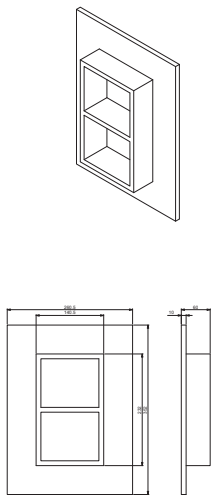
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 8xn	416.5	260.5	391	521.5	652	782.5	913	w=10+ 130.5xn

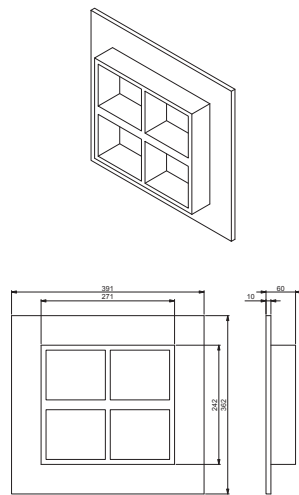
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

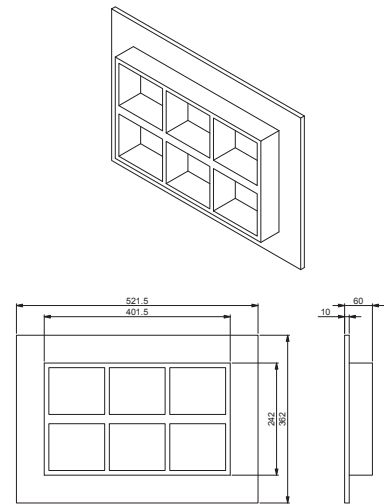
RGSF-2+2x1



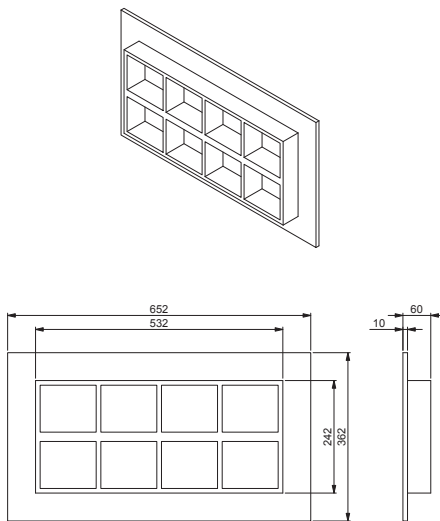
RGSF-2+2x2



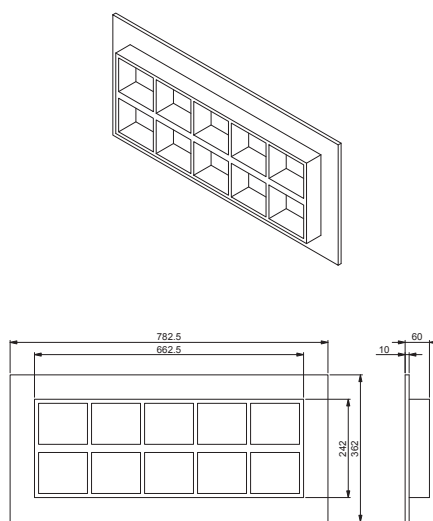
RGSF-2+2x3



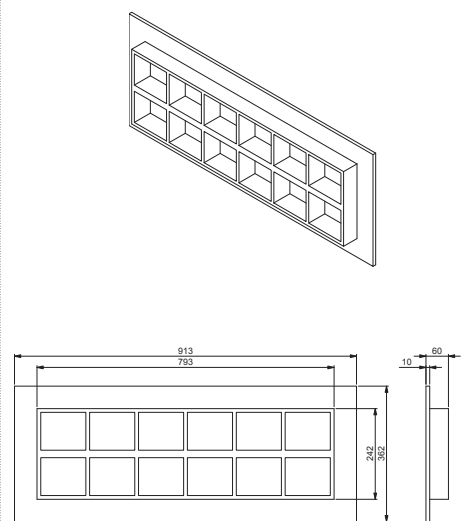
RGSF-2+2x4



RGSF-2+2x5



RGSF-2+2x6



unit : mm

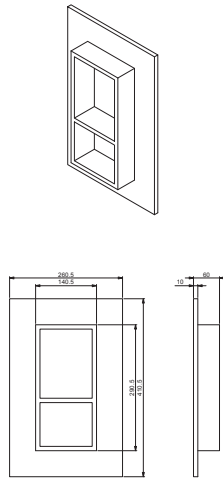
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 2+2xn	362		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

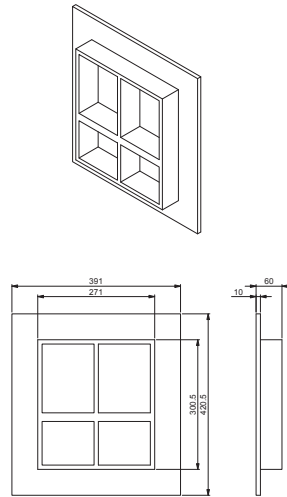


RGS Frame Series: RGSF

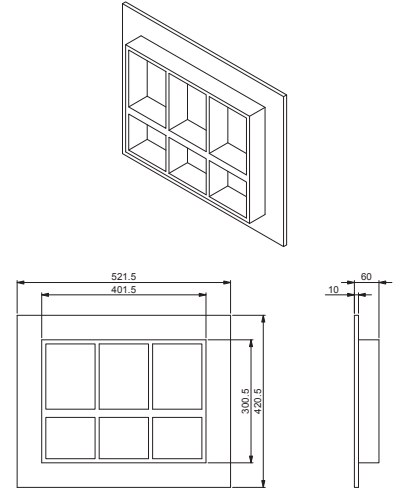
RGSF-2+4x1



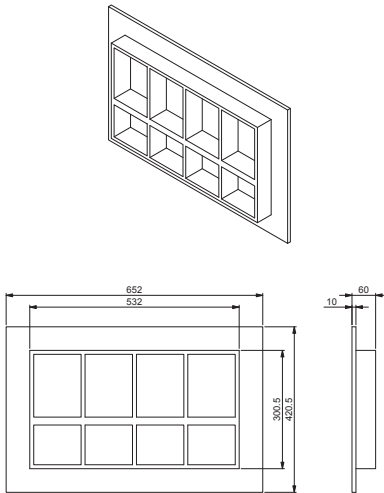
RGSF-2+4x2



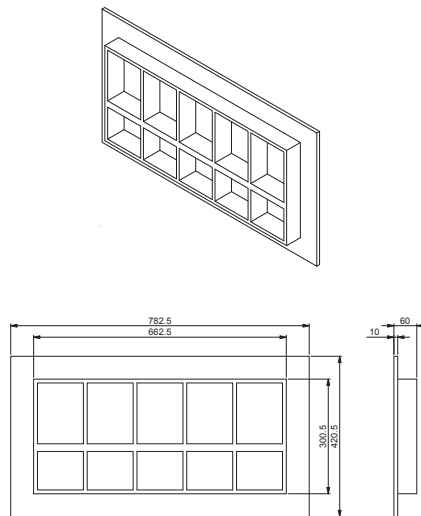
RGSF-2+4x3



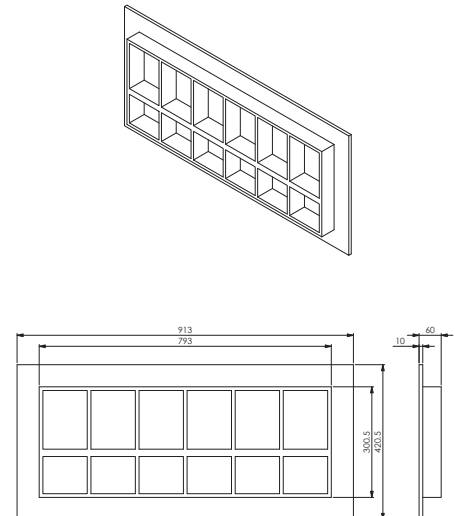
RGSF-2+4x4



RGSF-2+4x5



RGSF-2+4x6



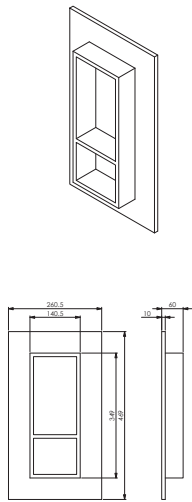
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 2+4xn	420.5		391	521.5	652	782.5	913	w=10+ 130.5xn

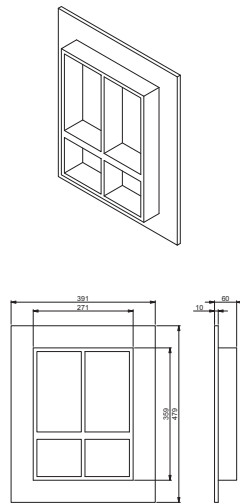
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

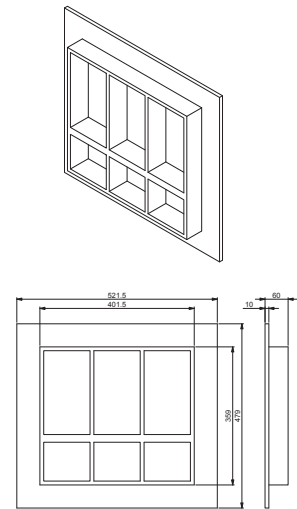
RGSF-2+6x1



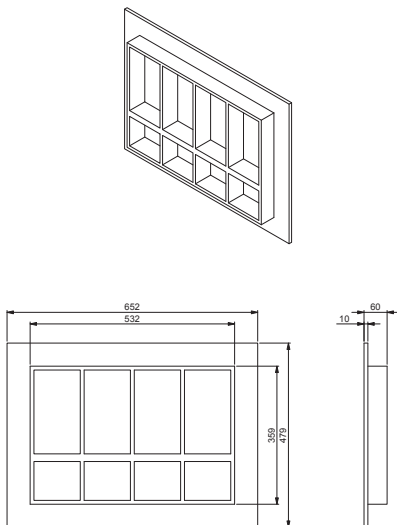
RGSF-2+6x2



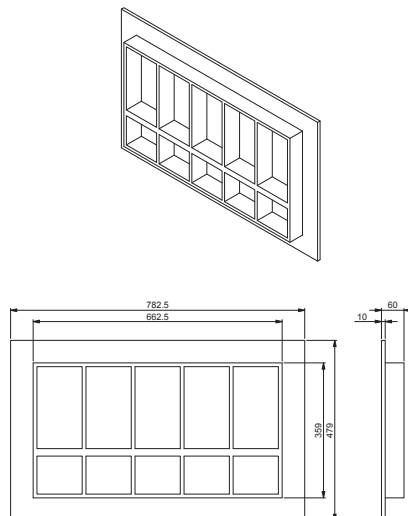
RGSF-2+6x3



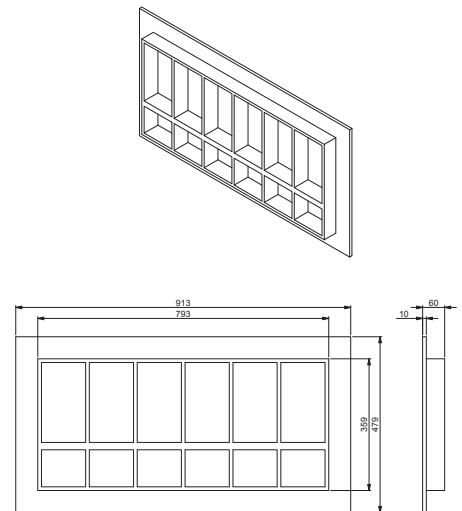
RGSF-2+6x4



RGSF-2+6x5



RGSF-2+6x6



unit : mm

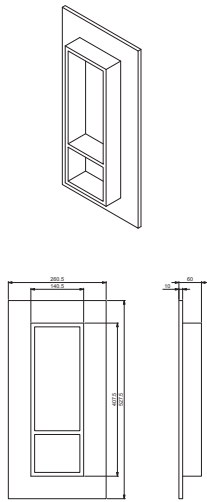
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 2+6xn	479		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

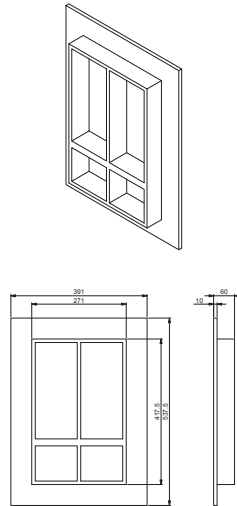


RGS Frame Series: RGSF

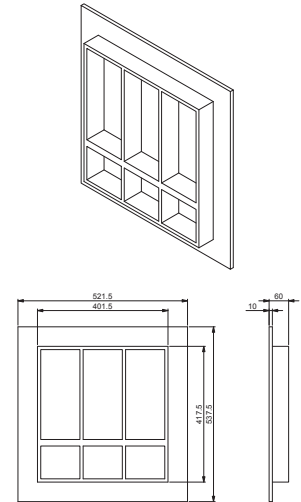
RGSF-2+8x1



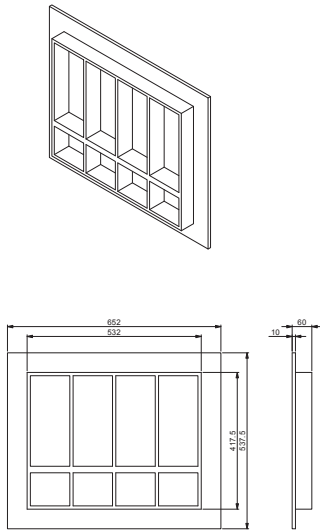
RGSF-2+8x2



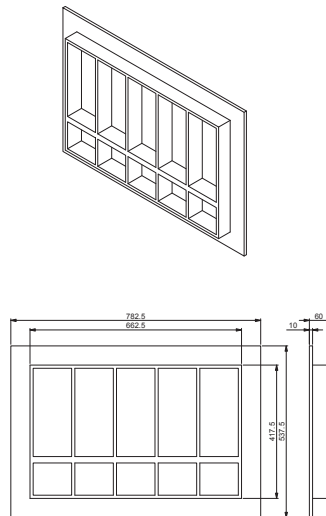
RGSF-2+8x3



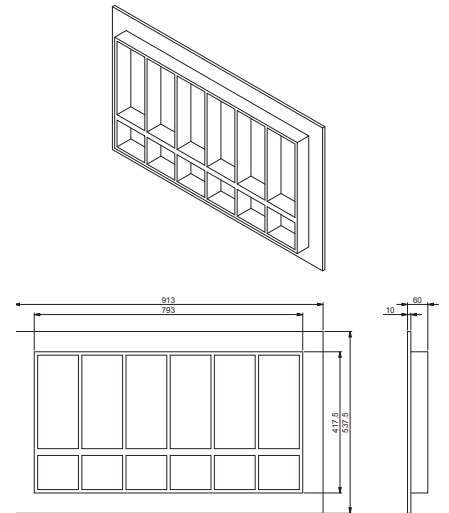
RGSF-2+8x4



RGSF-2+8x5



RGSF-2+8x6



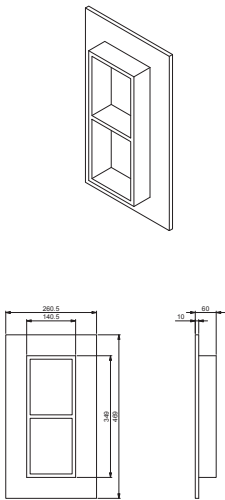
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 2+8xn	537.5		391	521.5	652	782.5	913	w=10+ 130.5xn

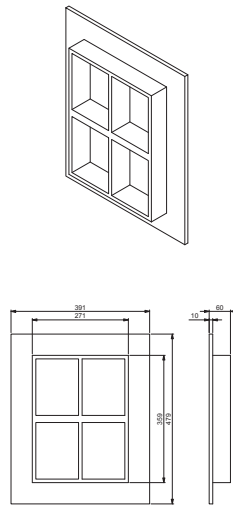
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

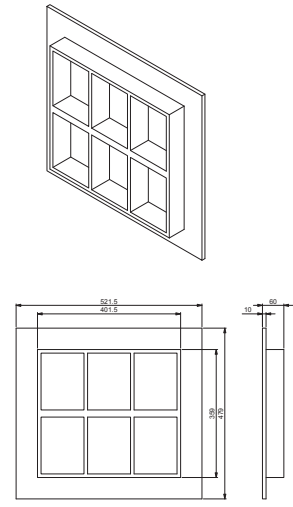
RGSF-4+4x1



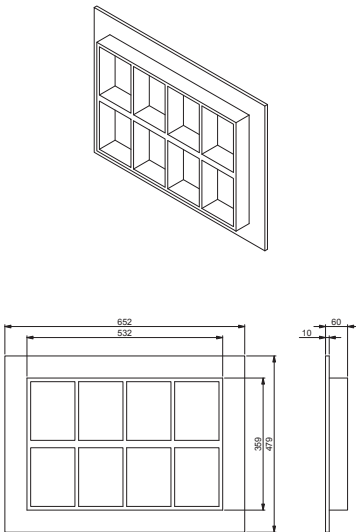
RGSF-4+4x2



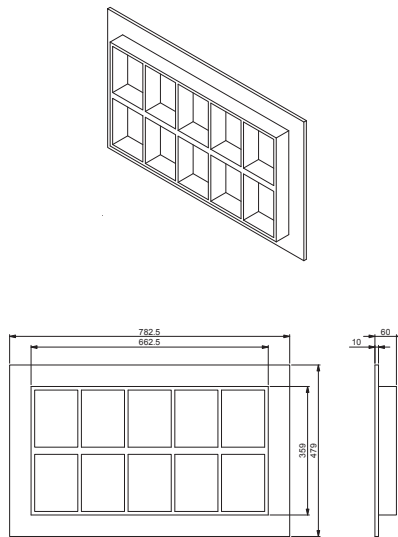
RGSF-4+4x3



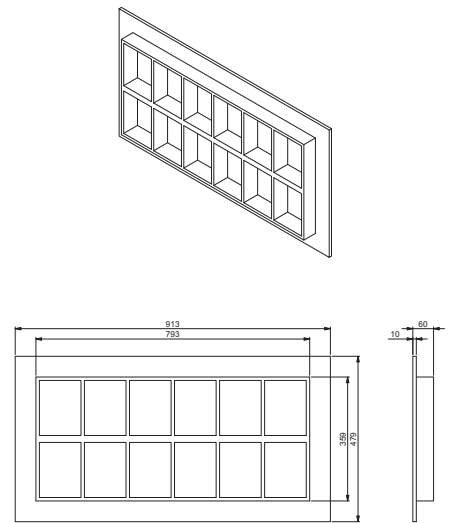
RGSF-4+4x4



RGSF-4+4x5



RGSF-4+4x6



unit : mm

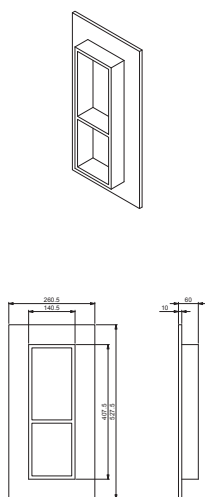
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 4+4xn	479		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

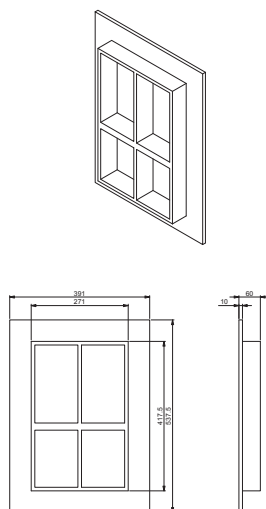


RGS Frame Series: RGSF

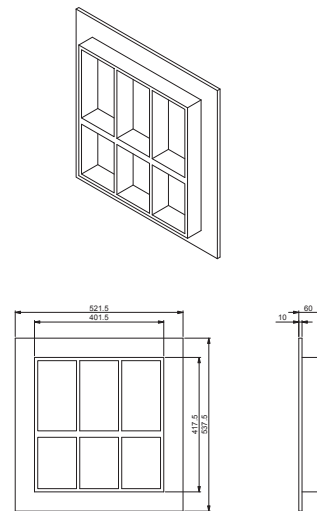
RGSF-4+6x1



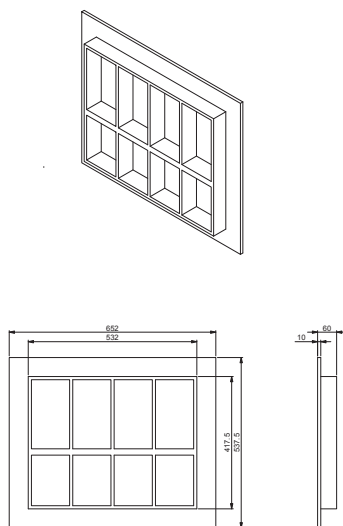
RGSF-4+6x2



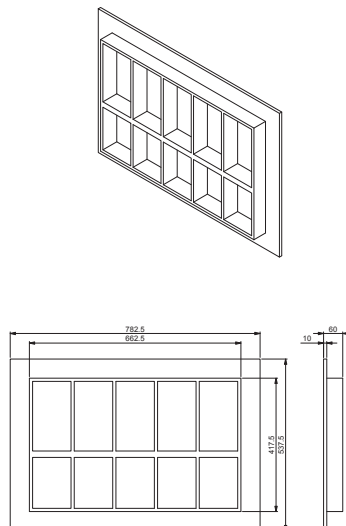
RGSF-4+6x3



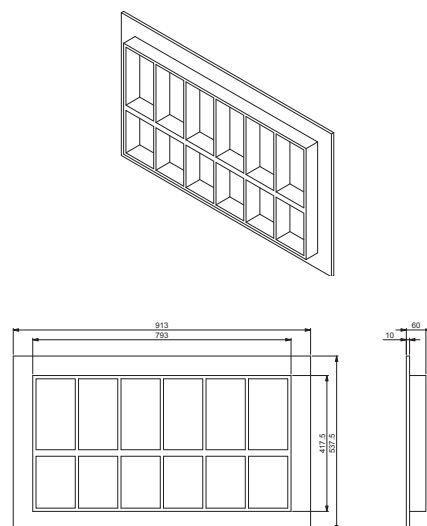
RGSF-4+6x4



RGSF-4+6x5



RGSF-4+6x6



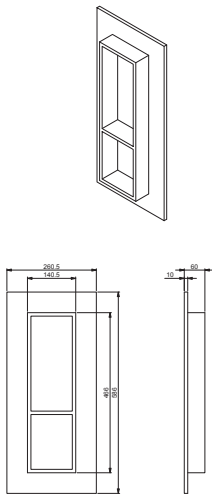
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 4+6xn	537.5		391	521.5	652	782.5	913	w=10+ 130.5xn

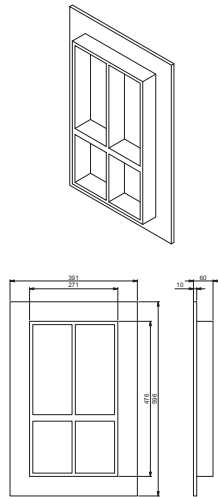
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

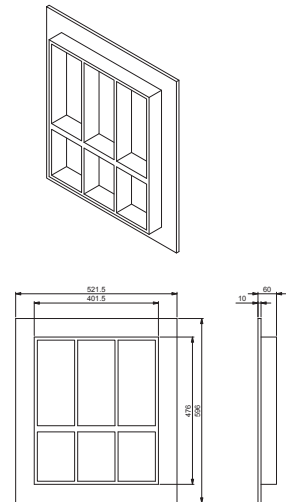
RGSF-4+8x1



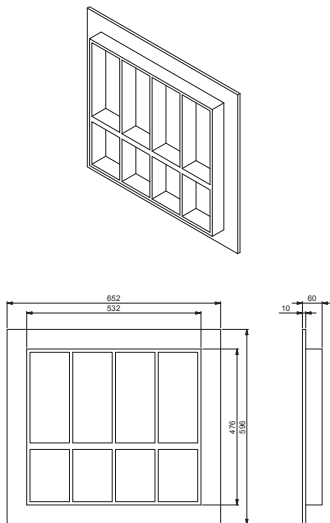
RGSF-4+8x2



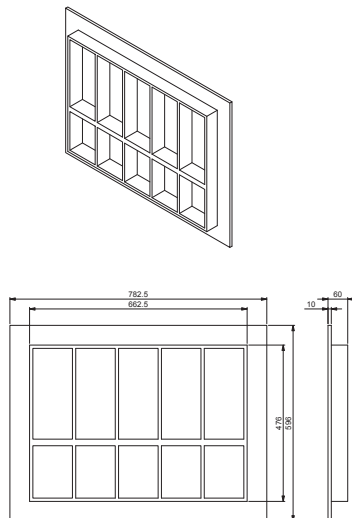
RGSF-4+8x3



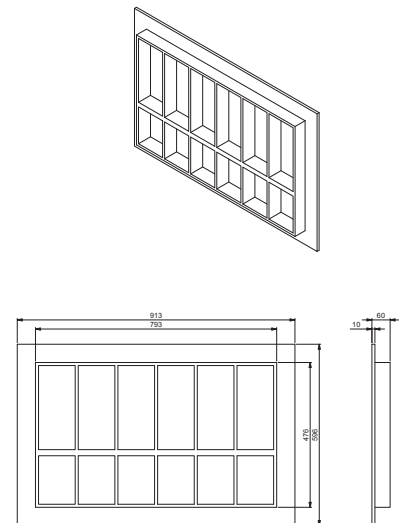
RGSF-4+8x4



RGSF-4+8x5



RGSF-4+8x6



unit : mm

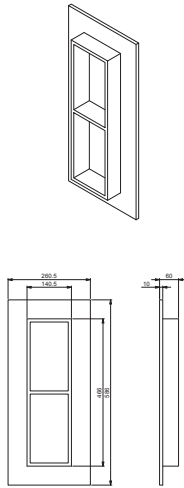
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 4+8xn	596		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

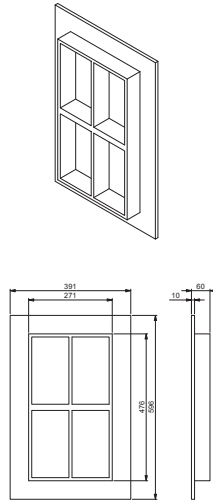


RGS Frame Series: RGSF

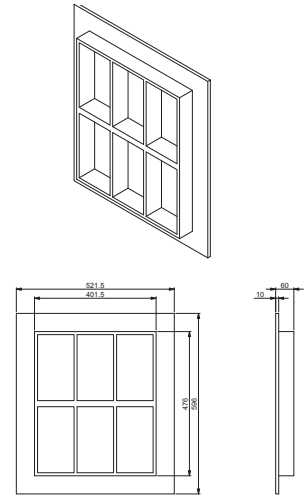
RGSF-6+6x1



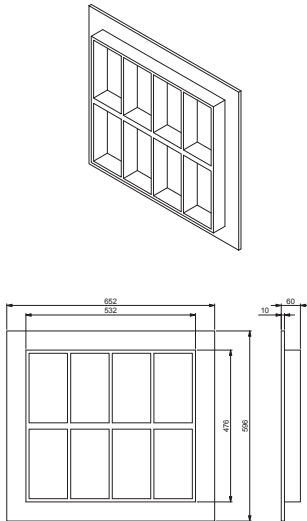
RGSF-6+6x2



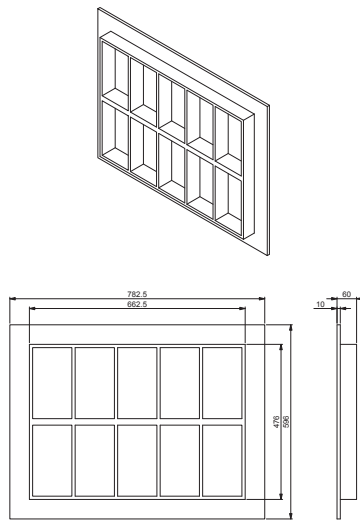
RGSF-6+6x3



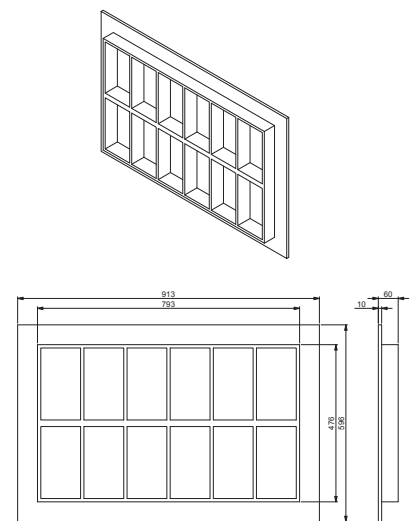
RGSF-6+6x4



RGSF-6+6x5



RGSF-6+6x6



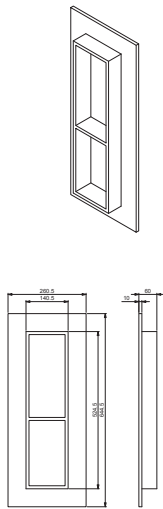
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 6+6xn	596		391	521.5	652	782.5	913	w=10+ 130.5xn

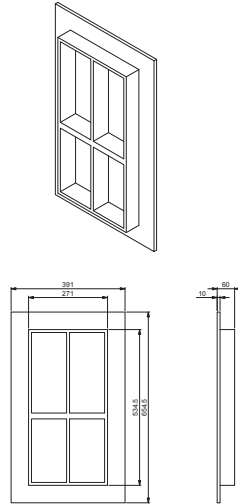
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSF

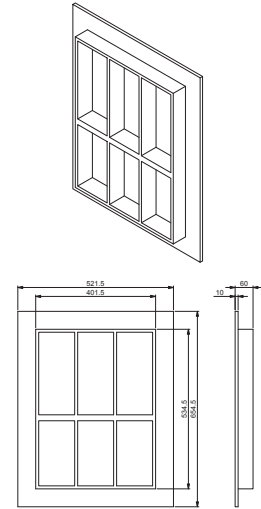
RGSF-6+8x1



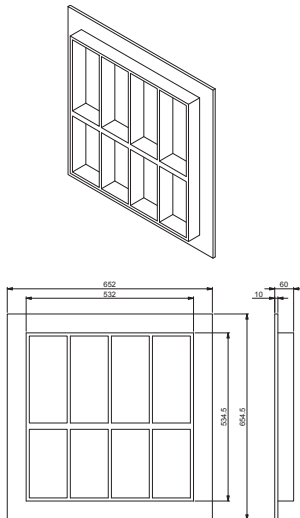
RGSF-6+8x2



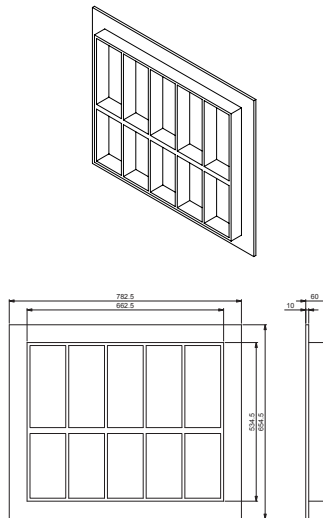
RGSF-6+8x3



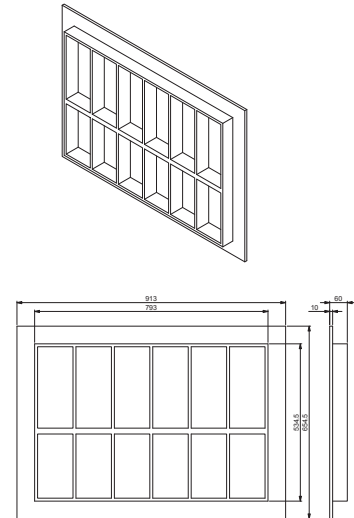
RGSF-6+8x4



RGSF-6+8x5



RGSF-6+8x6



unit : mm

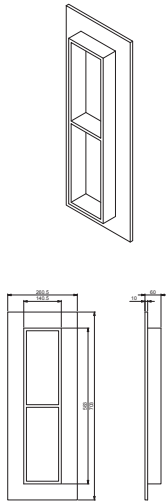
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 6+8xn	654.5		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

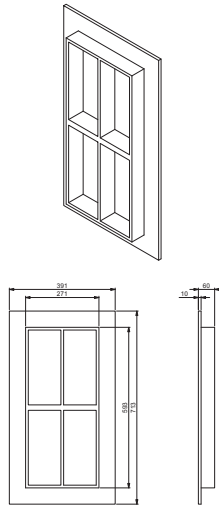


RGS Frame Series: RGSF

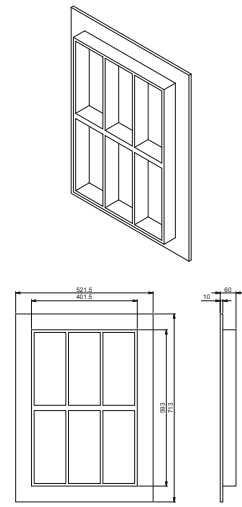
RGSF-8+8x1



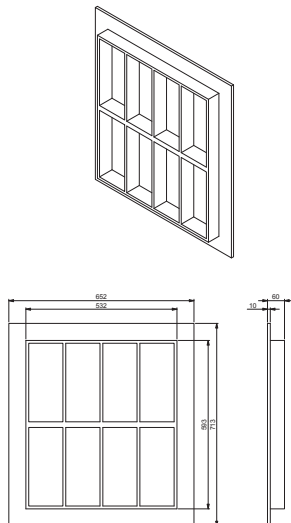
RGSF-8+8x2



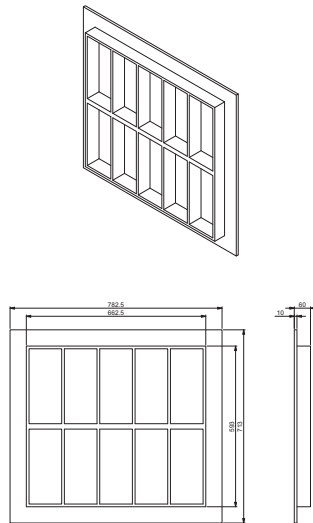
RGSF-8+8x3



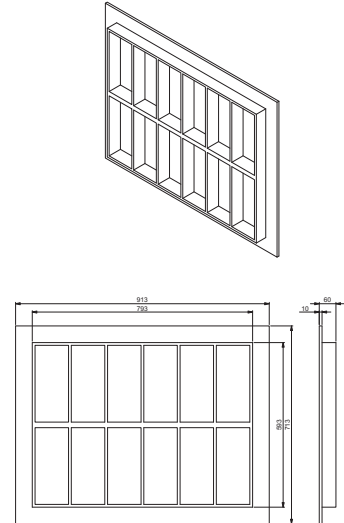
RGSF-8+8x4



RGSF-8+8x5



RGSF-8+8x6



unit : mm

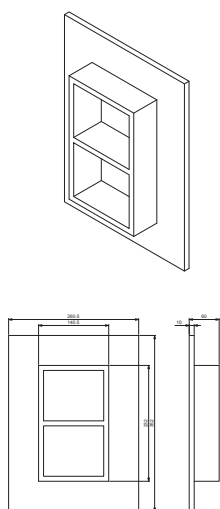
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSF - 8+8xn	713		391	521.5	652	782.5	913	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

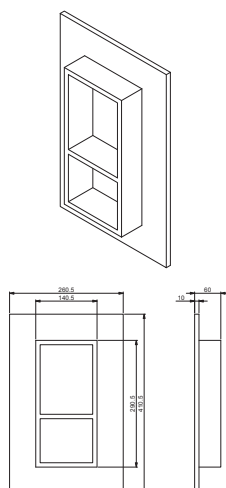


RGS Frame Series: RGSF

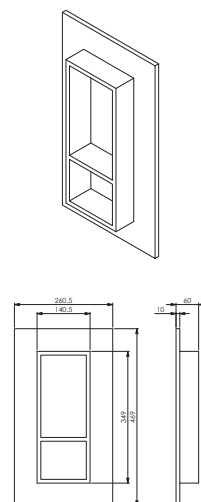
RGSF-2+2



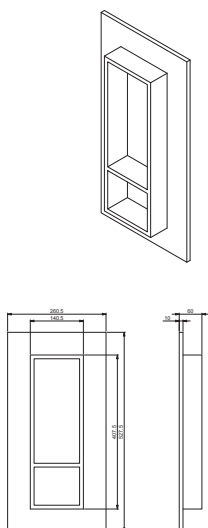
RGSF-2+4



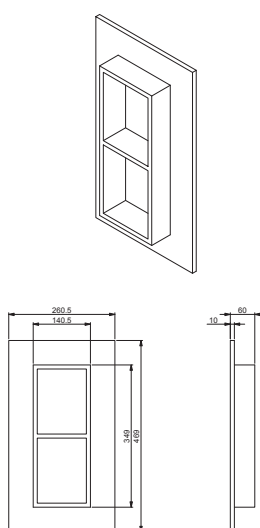
RGSF-2+6



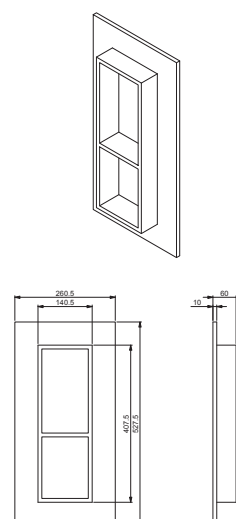
RGSF-2+8



RGSF-4+4



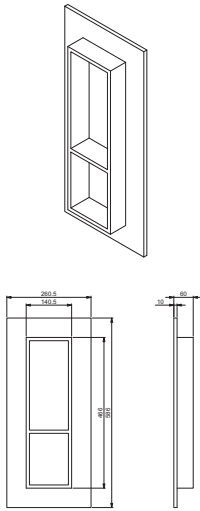
RGSF-4+6



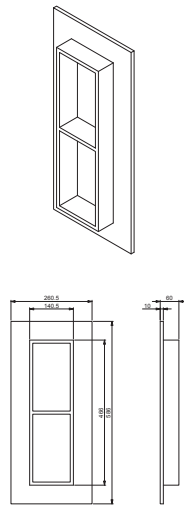


RGS Frame Series: RGSF

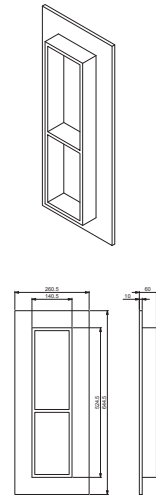
RGSF-4+8



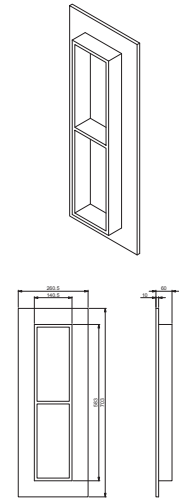
RGSF-6+6



RGSF-6+8



RGSF-8+8

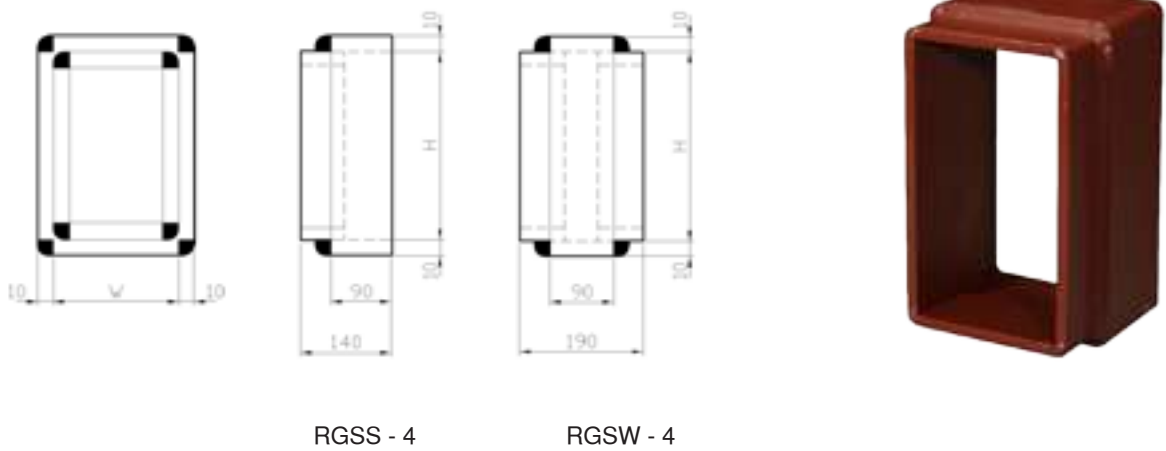


Frame Size	H(Height)	W(Width)
		n=1
RGSF - 2+2	352	260.5
RGSF - 2+4	410.5	260.5
RGSF - 2+6	469	260.5
RGSF - 2+8	527.5	260.5
RGSF - 4+4	469	260.5
RGSF - 4+6	527.5	260.5
RGSF - 4+8	586	260.5
RGSF - 6+6	586	260.5
RGSF - 6+8	644.5	260.5
RGSF - 8+8	703	260.5

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm



RGS Frame Series: RGSS / RGSW

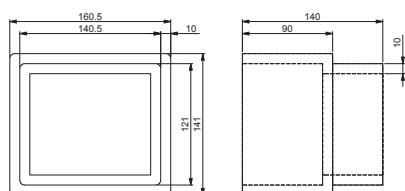
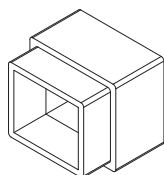


unit : mm

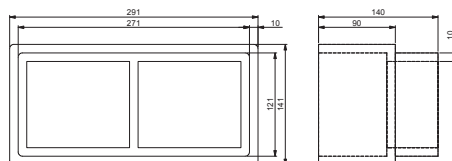
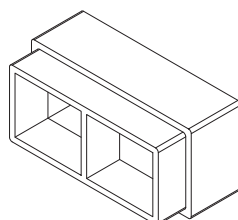
Frame Size	H (Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSS - 2xn	121	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn
RGSS - 4xn	179.5	140.5	271	401.5	532	662.5	793	
RGSS - 6xn	238	140.5	271	401.5	532	662.5	793	
RGSS - 8xn	296.5	140.5	271	401.5	532	662.5	793	
RGSW - 2xn	121	140.5	271	401.5	532	662.5	793	
RGSW - 4xn	179.5	140.5	271	401.5	532	662.5	793	
RGSW - 6xn	238	140.5	271	401.5	532	662.5	793	
RGSW - 8xn	296.5	140.5	271	401.5	532	662.5	793	

RGS Frame Series: RGSS

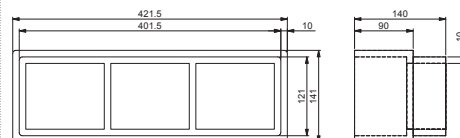
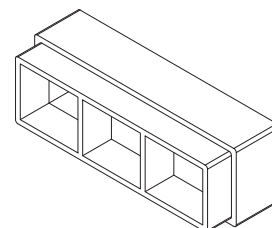
RGSS-2x1



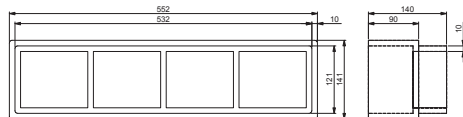
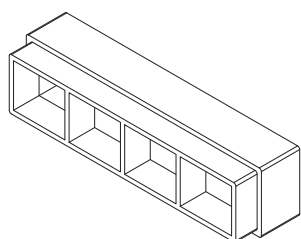
RGSS-2x2



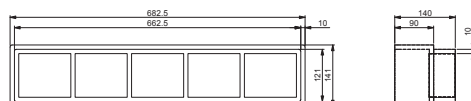
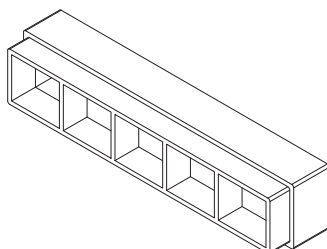
RGSS-2x3



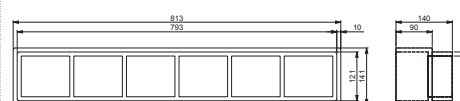
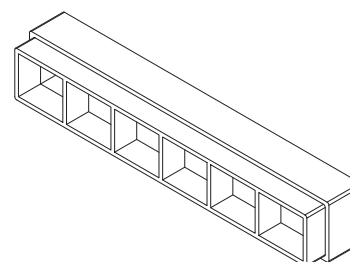
RGSS-2x4



RGSS-2x5



RGSS-2x6



unit : mm

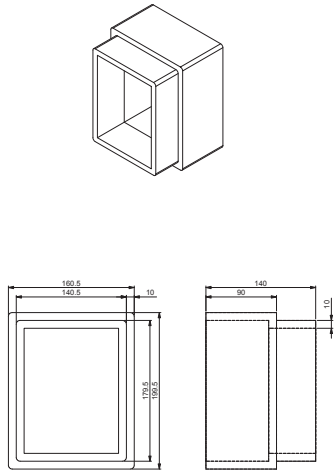
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSS - 2xn	121	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

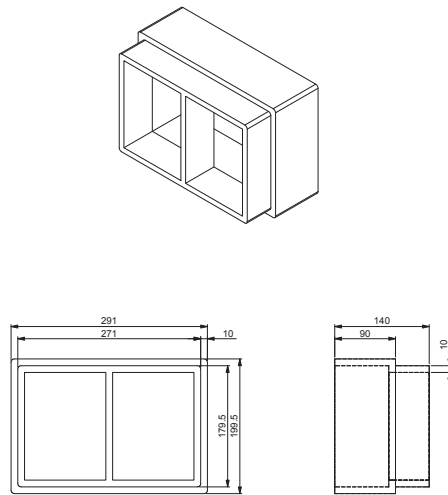


RGS Frame Series: RGSS

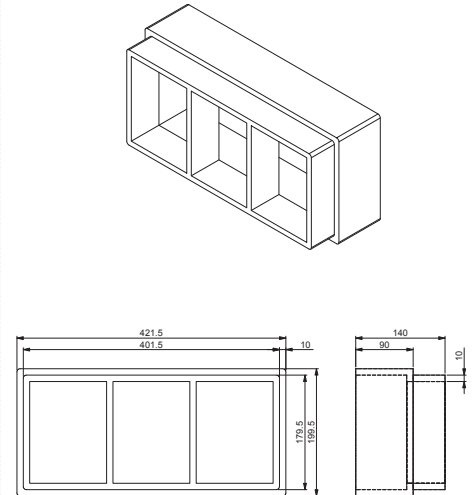
RGSS-4x1



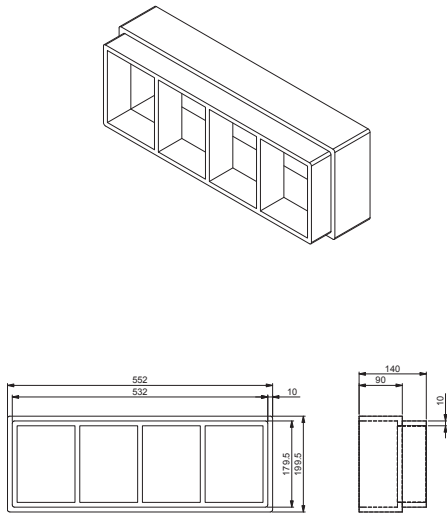
RGSS-4x2



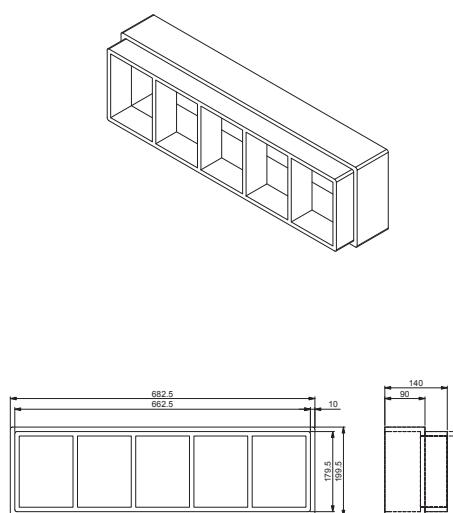
RGSS-4x3



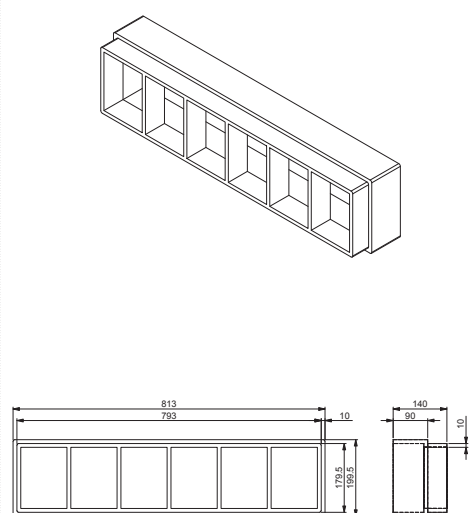
RGSS-4x4



RGSS-4x5



RGSS-4x6



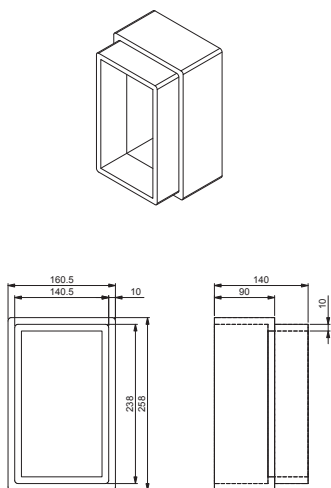
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSS - 4xn	179.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

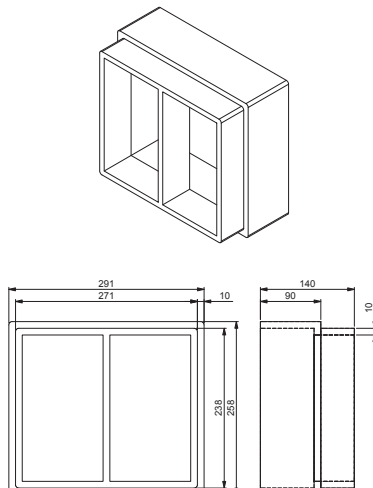
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSS

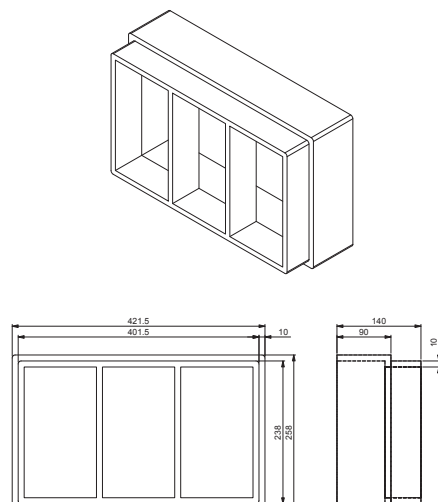
RGSS-6x1



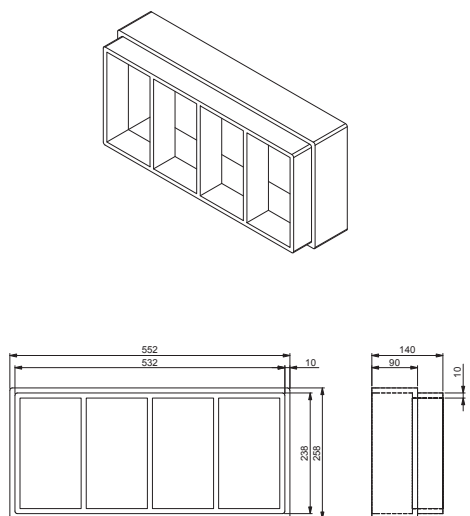
RGSS-6x2



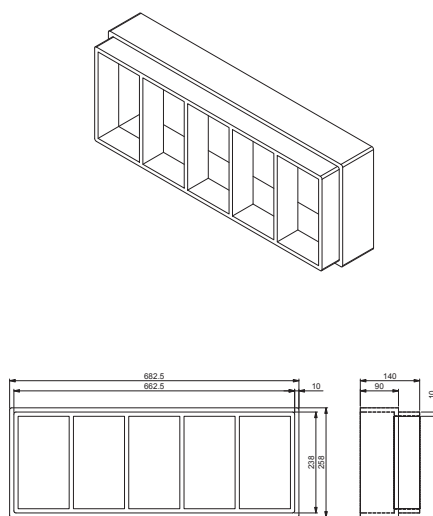
RGSS-6x3



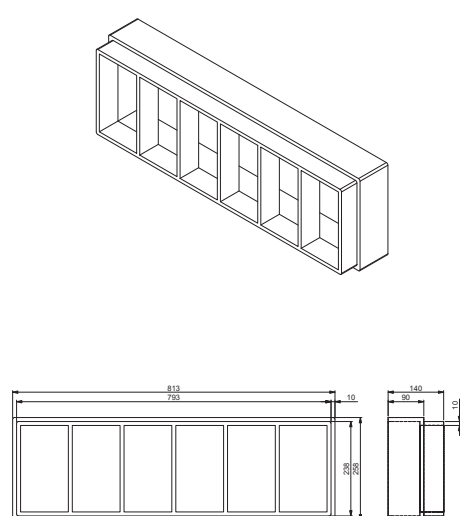
RGSS-6x4



RGSS-6x5



RGSS-6x6



unit : mm

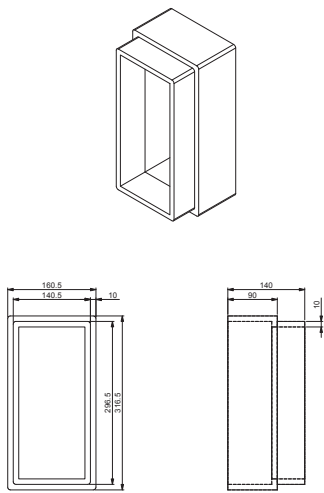
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSS - 6xn	238	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

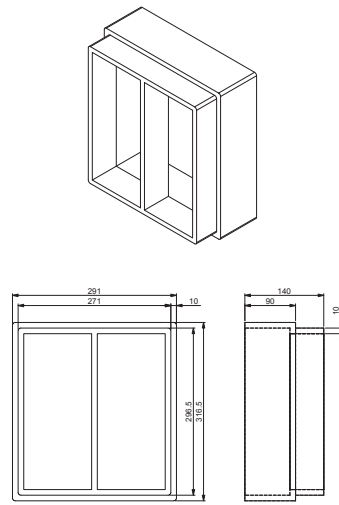


RGS Frame Series: RGSS

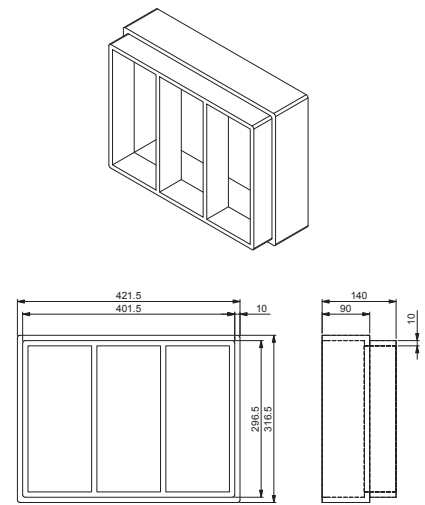
RGSS-8x1



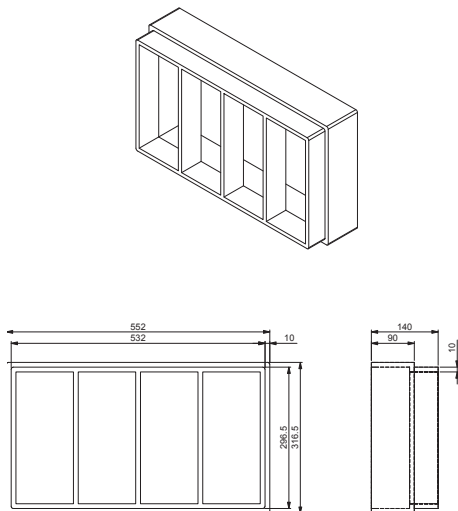
RGSS-8x2



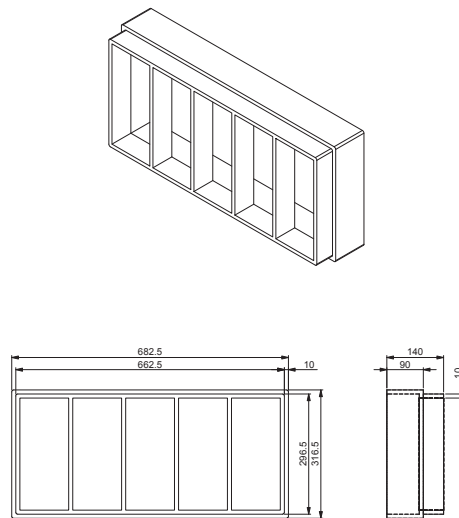
RGSS-8x3



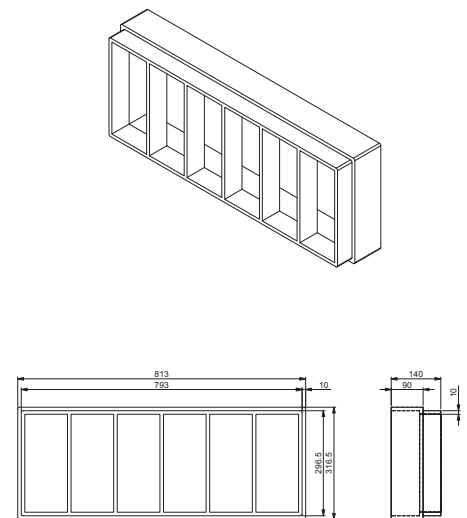
RGSS-8x4



RGSS-8x5



RGSS-8x6



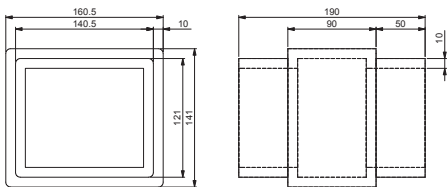
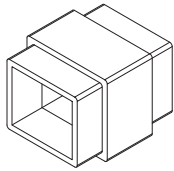
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSS - 8xn	296.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

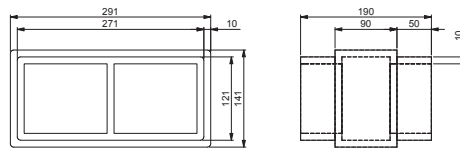
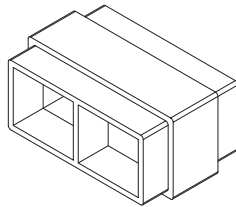
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSW

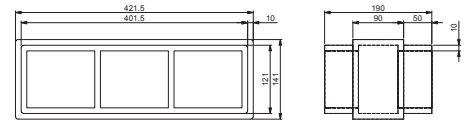
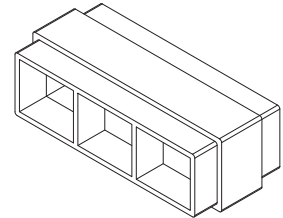
RGSW-2x1



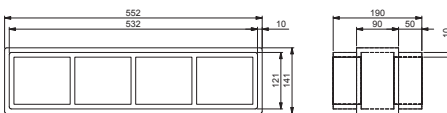
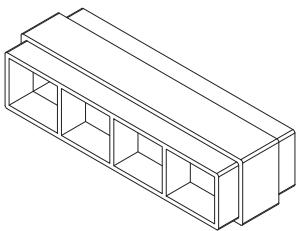
RGSW-2x2



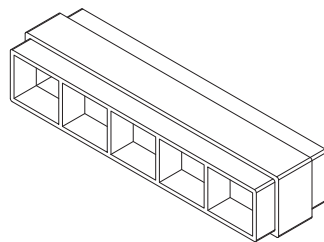
RGSW-2x3



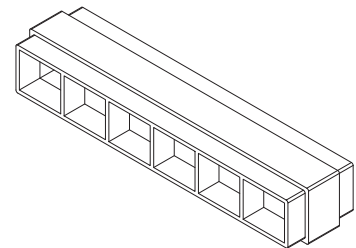
RGSW-2x4



RGSW-2x5



RGSW-2x6



unit : mm

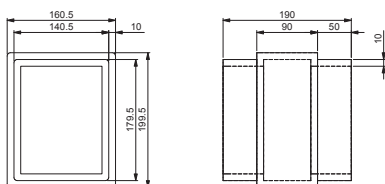
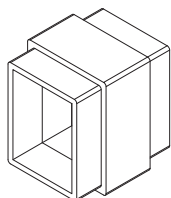
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSW - 2xn	121	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

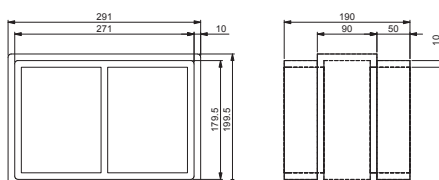
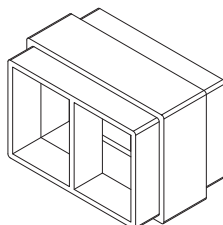


RGS Frame Series: RGSW

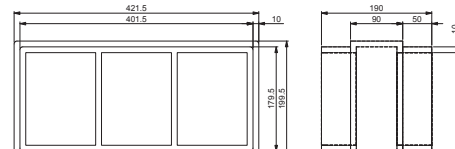
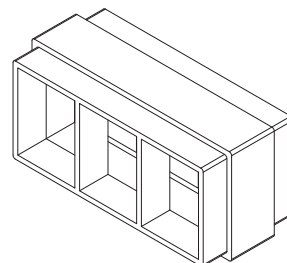
RGSW-4x1



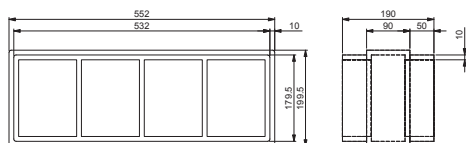
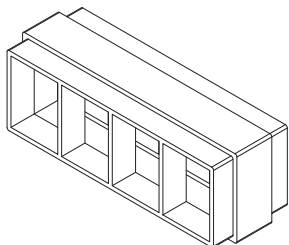
RGSW-4x2



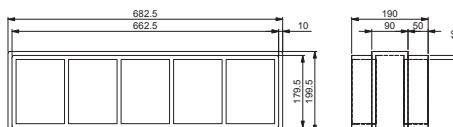
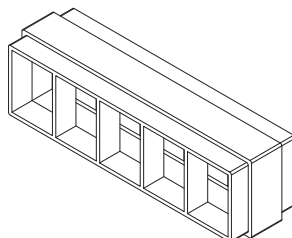
RGSW-4x3



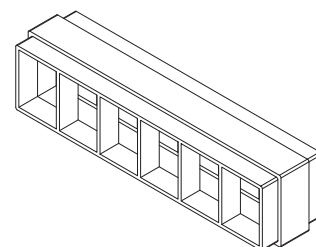
RGSW-4x4



RGSW-4x5



RGSW-4x6



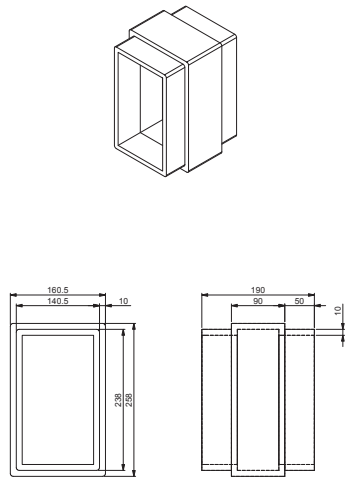
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSW - 4xn	179.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

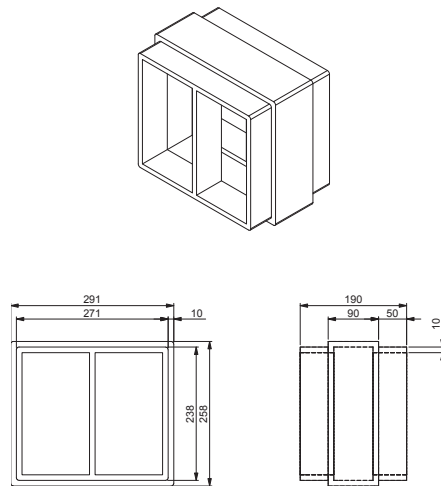
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSW

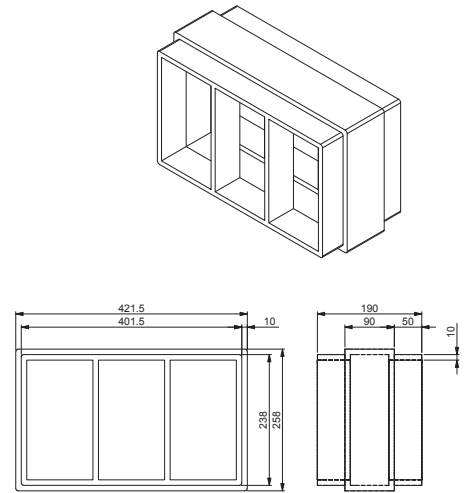
RGSW-6x1



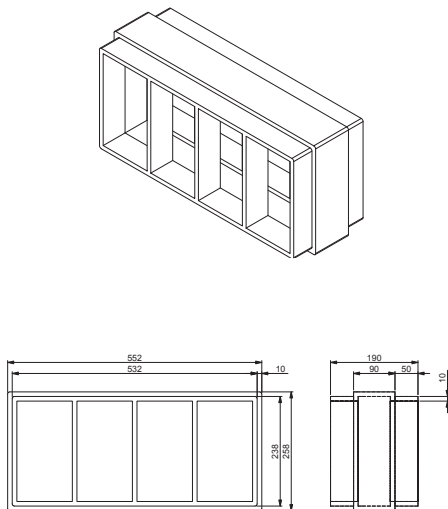
RGSW-6x2



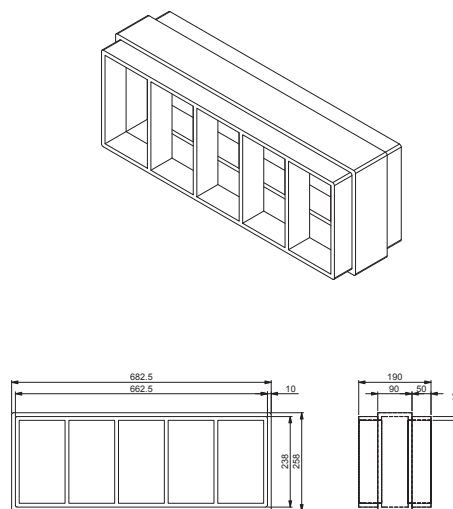
RGSW-6x3



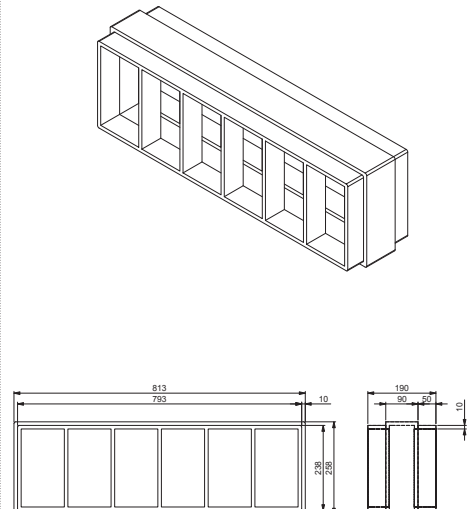
RGSW-6x4



RGSW-6x5



RGSW-6x6



unit : mm

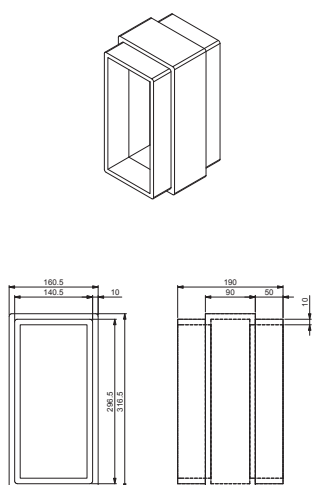
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSW - 6xn	238	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

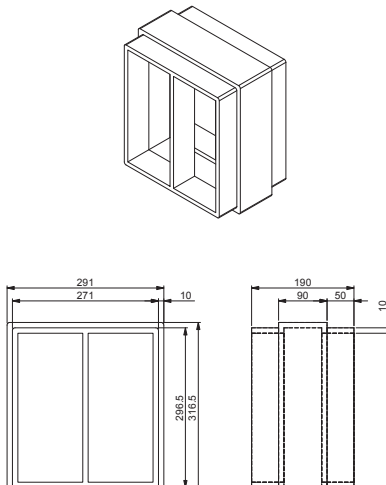


RGS Frame Series: RGSW

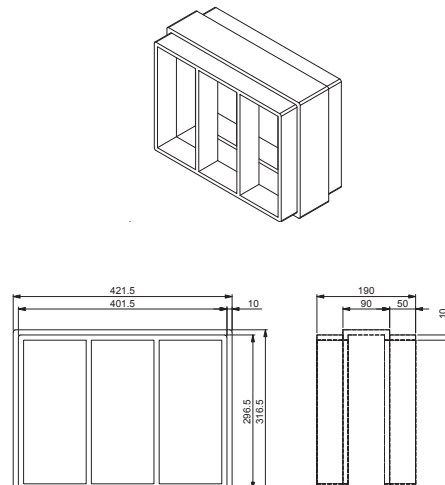
RGSW-8x1



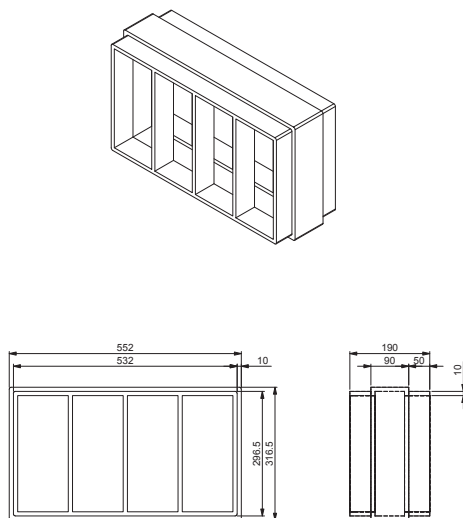
RGSW-8x2



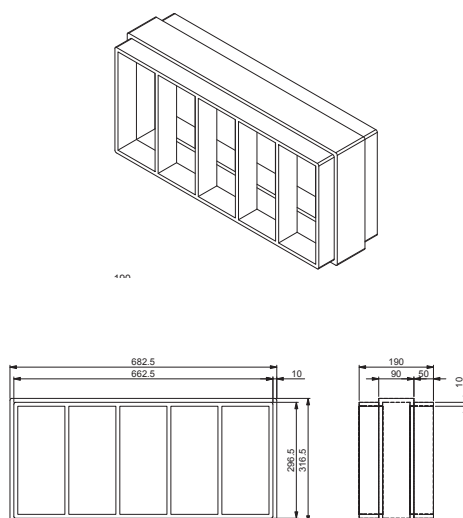
RGSW-8x3



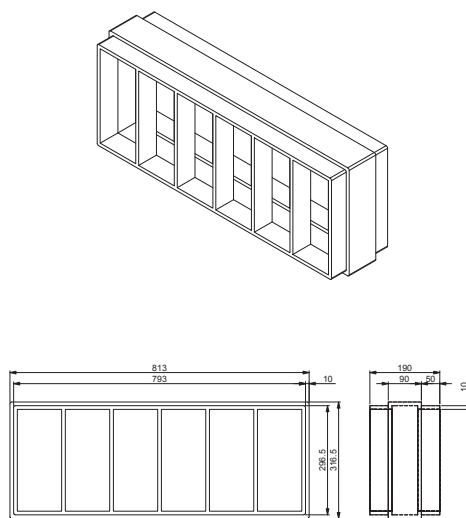
RGSW-8x4



RGSW-8x5



RGSW-8x6



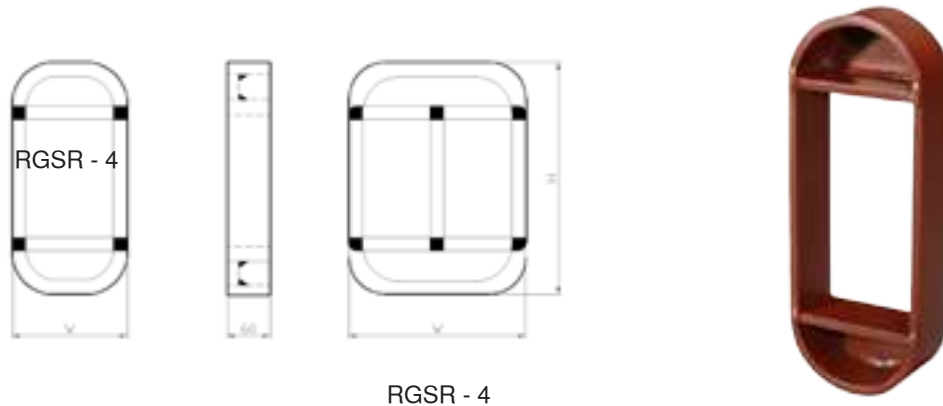
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSW - 8xn	296.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm



RGS Frame Series: RGSR

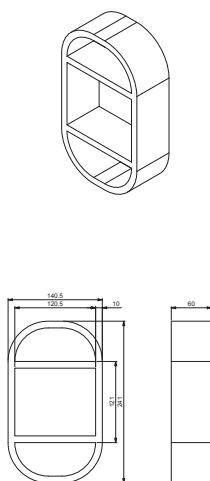


unit : mm

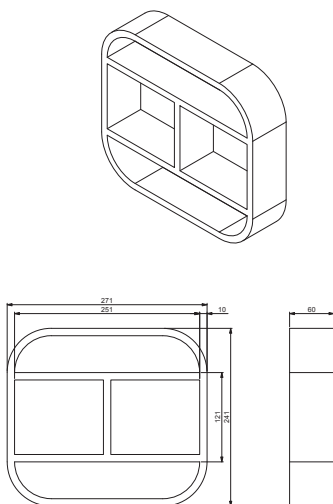
Frame Size	H (Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSR - 2xn	241	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn
RGSR - 4xn	299.5	140.5	271	401.5	532	662.5	793	
RGSR - 6xn	358	140.5	271	401.5	532	662.5	793	
RGSR - 8xn	416.5	140.5	271	401.5	532	662.5	793	

RGS Frame Series: RGSR

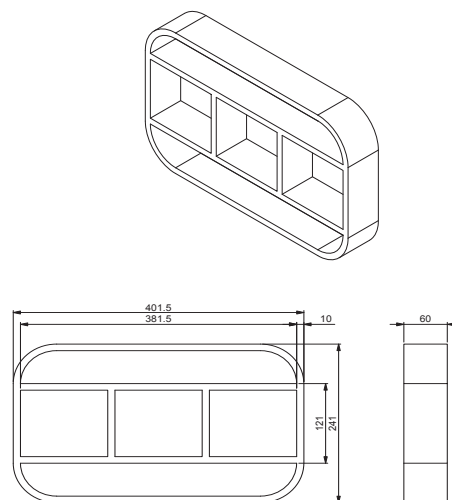
RGSR-2x1



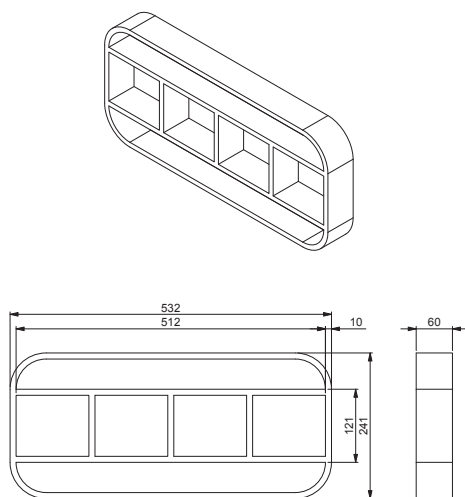
RGSR-2x2



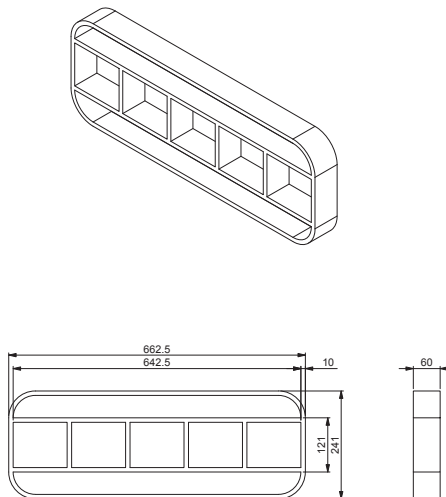
RGSR-2x3



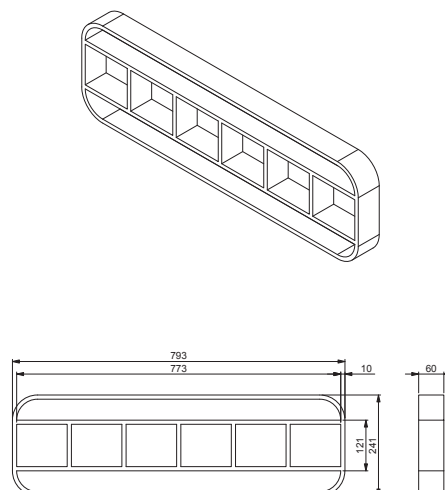
RGSR-2x4



RGSR-2x5



RGSR-2x6



unit : mm

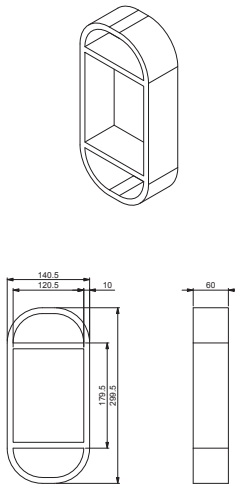
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSR - 2xn	241	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height \pm 1mm Width \pm 0.8mm
- Material thickness : 10mm

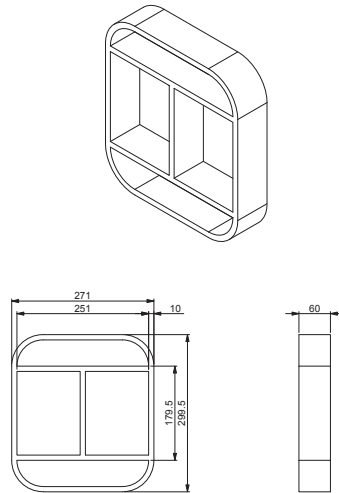


RGS Frame Series: RGSR

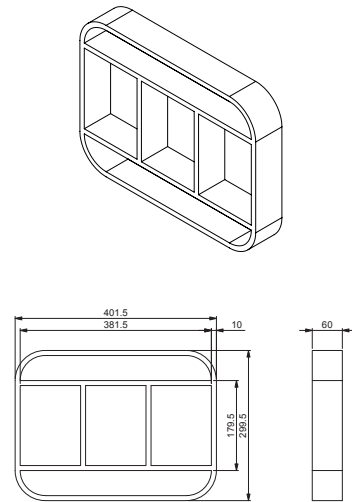
RGSR-4x1



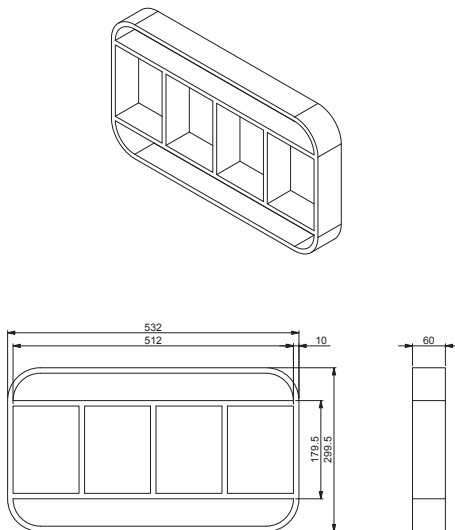
RGSR-4x2



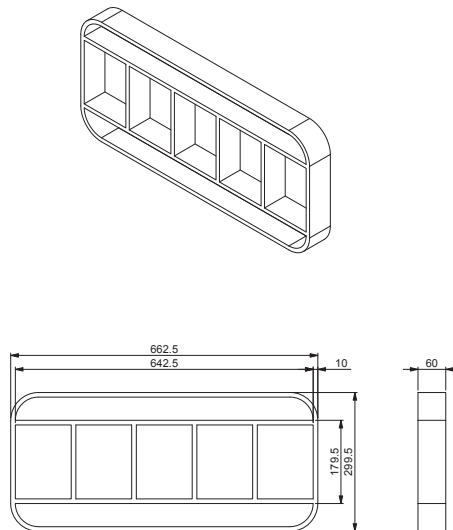
RGSR-4x3



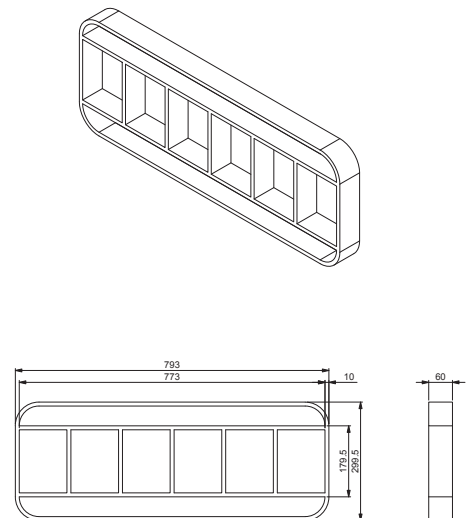
RGSR-4x4



RGSR-4x5



RGSR-4x6



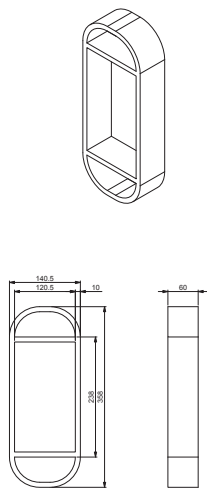
unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSR - 4xn	299.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

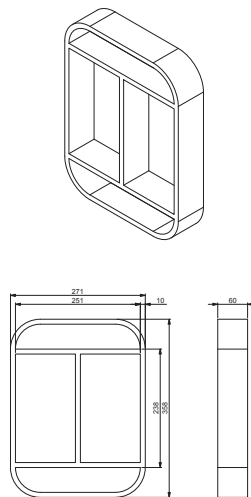
- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

RGS Frame Series: RGSR

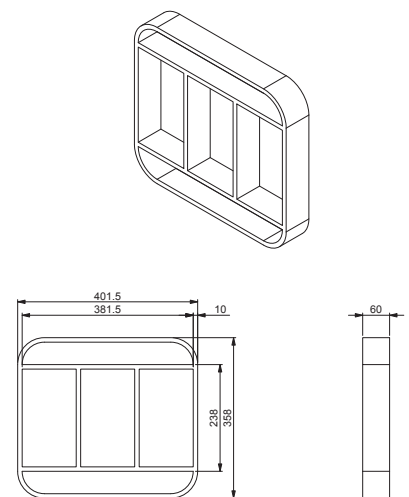
RGSR-6x1



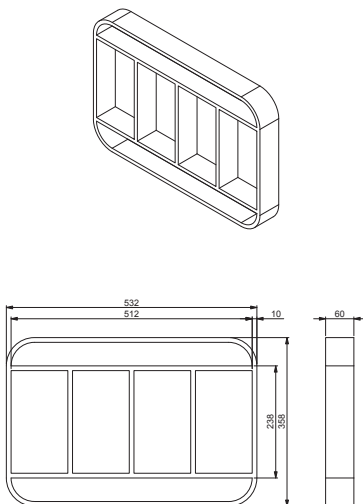
RGSR-6x2



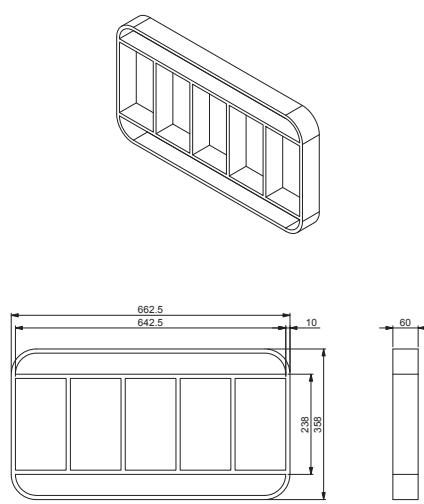
RGSR-6x3



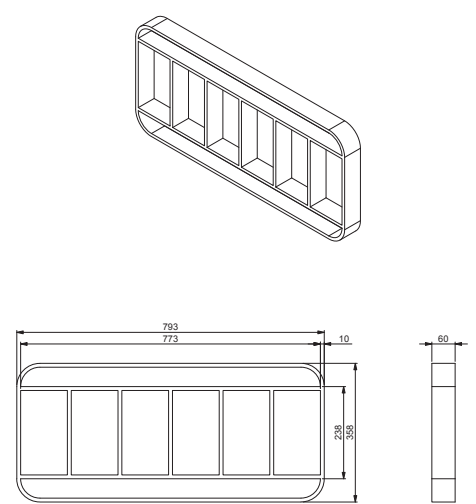
RGSR-6x4



RGSR-6x5



RGSR-6x6



unit : mm

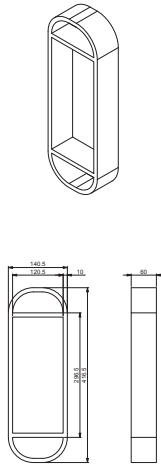
Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSR - 6xn	358	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

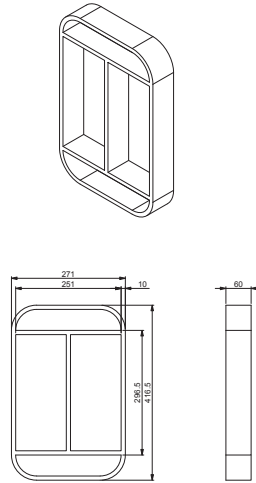


RGS Frame Series: RGSR

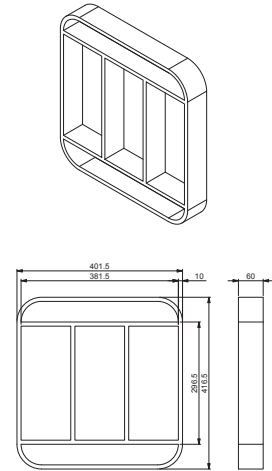
RGSR-8x1



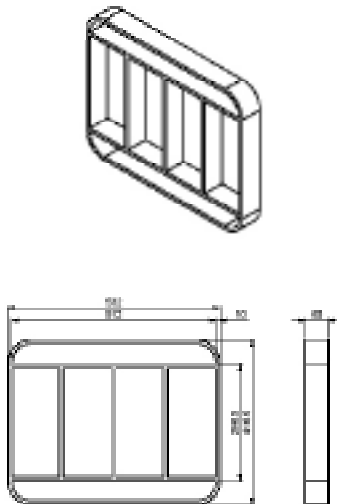
RGSR-8x2



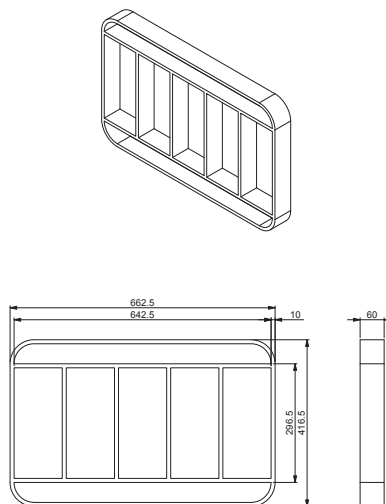
RGSR-8x3



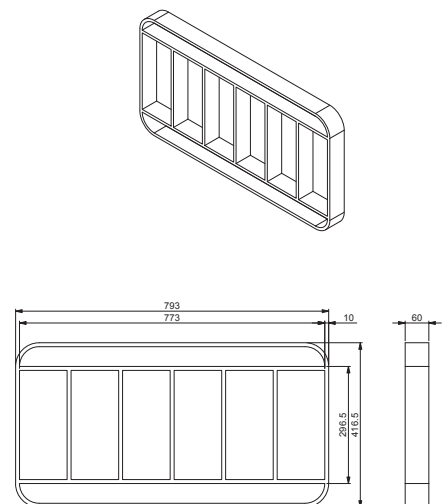
RGSR-8x4



RGSR-8x5



RGSR-8x6



unit : mm

Frame Size	H(Height)	W(Width)						
		n=1	n=2	n=3	n=4	n=5	n=6	n=x
RGSR - 8xn	416.5	140.5	271	401.5	532	662.5	793	w=10+ 130.5xn

- n = Number of frame width Tolerance of single frame : Height ± 1mm Width ± 0.8mm
- Material thickness : 10mm

LB Component

The LB type module installation procedure is simple because the modules themselves compensate for any surprise or last minute changes.

An existing seal can be easily re-opened at a later time for cable or pipe additions and re-configurations.

The LB modules are designed to meet the specific demands in this industry.

They also provide an unmatched flexibility that will save time and reduce costs.

- LB타입 모듈 : 표준규격 이외에도 대응 가능한 유동성 (임의적인 변경에도 용이하게 설치 가능, 추후 변경사항 발생 시에도 용이하게 수정 가능)

The Layered insert blocks type has removable layers for multidiameter modules and a center core. Single module can seal cables or pipes of several different diameters simply by peeling layers away from the module halves until a perfect fit achieved.

Peel away layers to adjust to different cable or pipe diameters.

- 분리형 레이어로 케이블, 파이프의 각각다른 지름에 완벽히 대응



LB Component

Presswedge

This provides an alternative method of sealing the transit. Used in place of the endpacking compression plate and bolt. It can be inserted at the top or bottom of a frame or between row of packing blocks.

- 프레스 웨지 : 엔드패킹 압축 플레이트에 사용 (볼트로 격벽장치 봉합)



Jack

This is makes space for easy insertion of presswedge between the stayplate and the frame

- 잭 : 고정 플레이트와 프레임 사이의 프레스웨지 설치시 공간 확장용 기구



Stayplate

This is placed between each row of blocks to facilitate the installation and increase mechanical anchorage. They are available in galvanized or stainless steel, aluminium or beryllium copper.

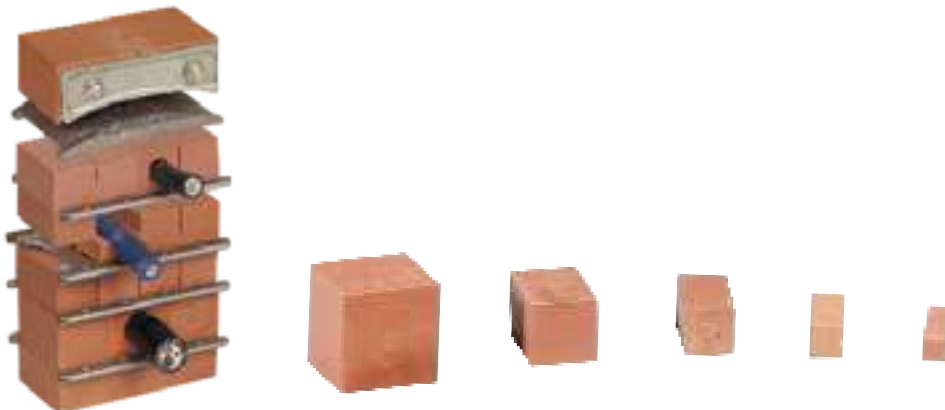
- 고정 플레이트 : 블록 사이에 설치하여 설치용이 및 구조적 안정성 확보



Lubricant

This is used to grease all insert blocks and the presswedge. This ensures easy assembly and correct compression inside the frame.

- 윤활제 : 블록 윤활용





RGP Frame Series: RGP / RGP(O)

RGP / RGP(O) for Round Penetrations

RGP is a round penetration to effectively seal cables and pipes passing through circular hole.

There are four standard sizes that are formed by tightening the compression bolts to be able to expand the seal radially.

The compression bolts and the endplate are made of galvanized steel and stainless steel.

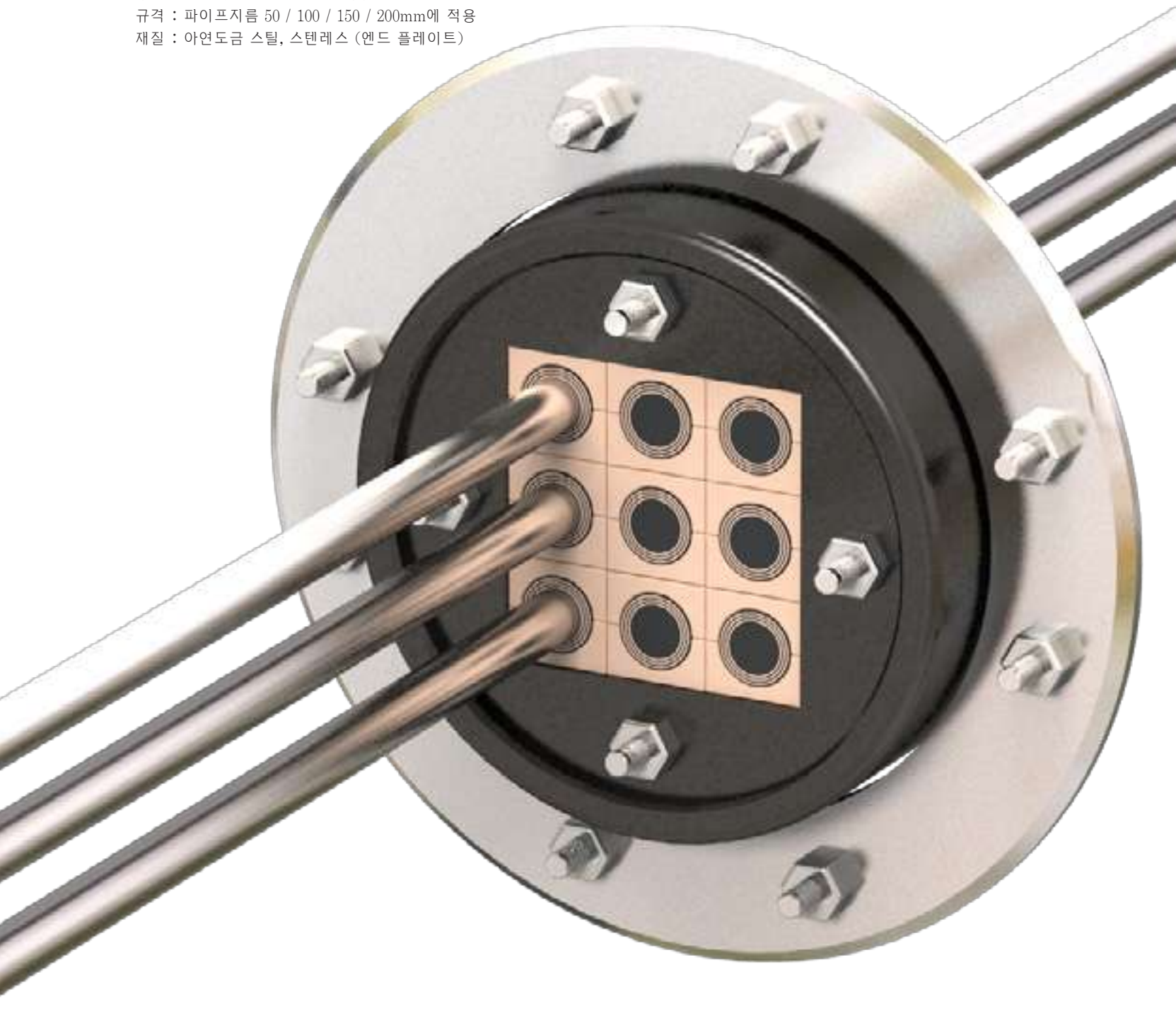
RGP(O) is the open version of RGP available in all sizes for applications where cables and pipes are already in position.

● 원형타입

용도 : 구멍이나 파이프의 관통용접을 위한 원형 인서트블록

규격 : 파이프지름 50 / 100 / 150 / 200mm에 적용

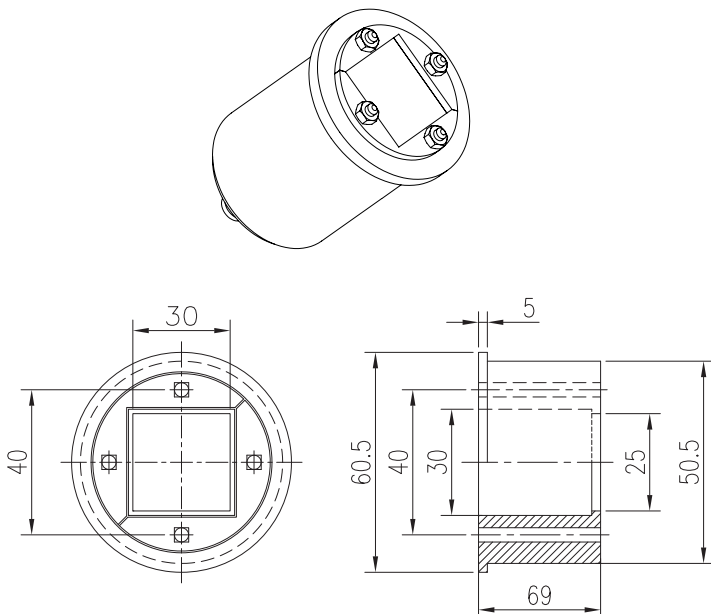
재질 : 아연도금 스틸, 스텐레스 (엔드 플레이트)



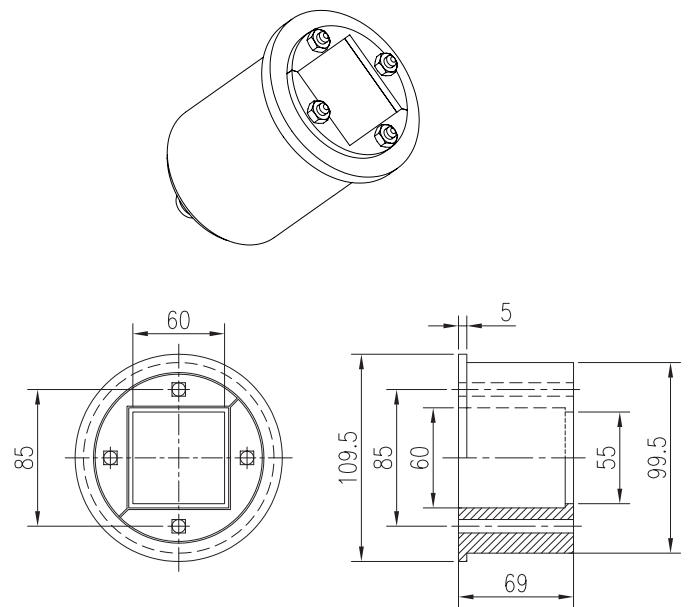


RGP Frame Series: RGP

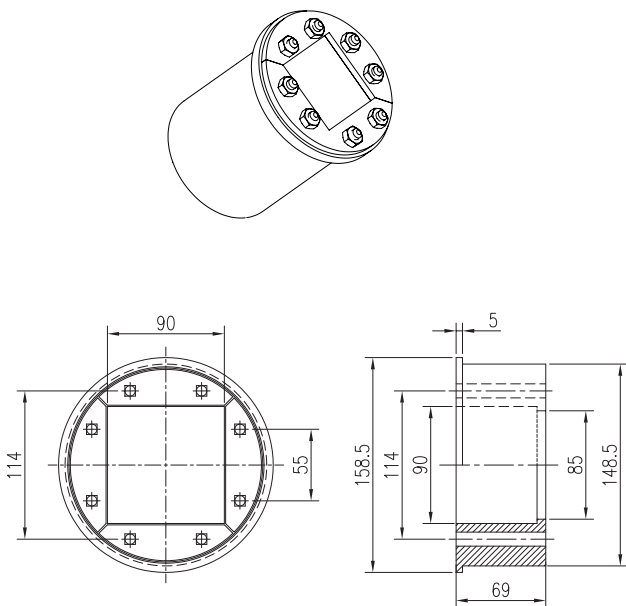
Endpacking RGP-50



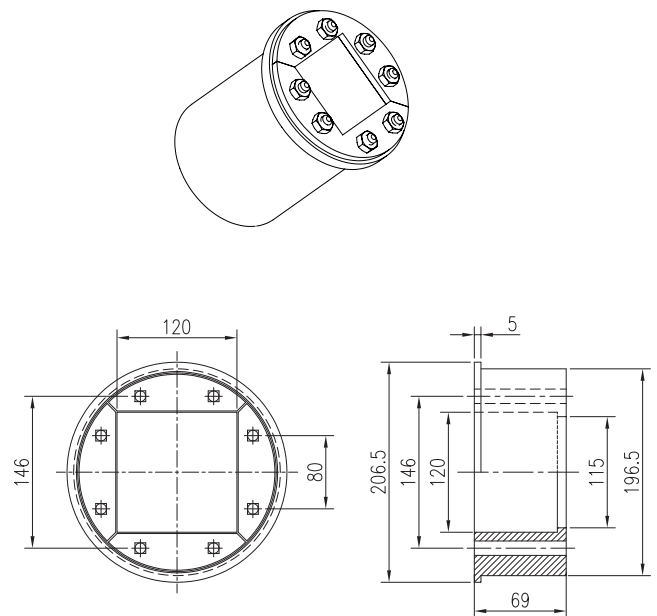
Endpacking RGP-100



Endpacking RGP-150

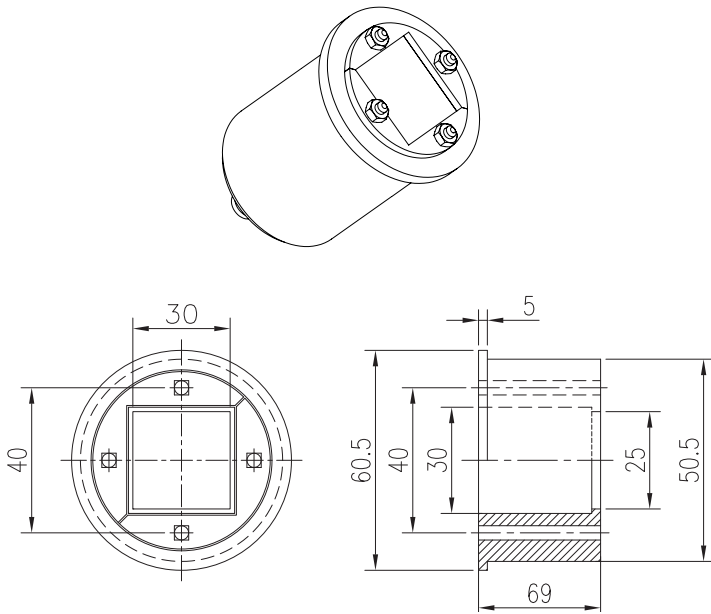


Endpacking RGP-200

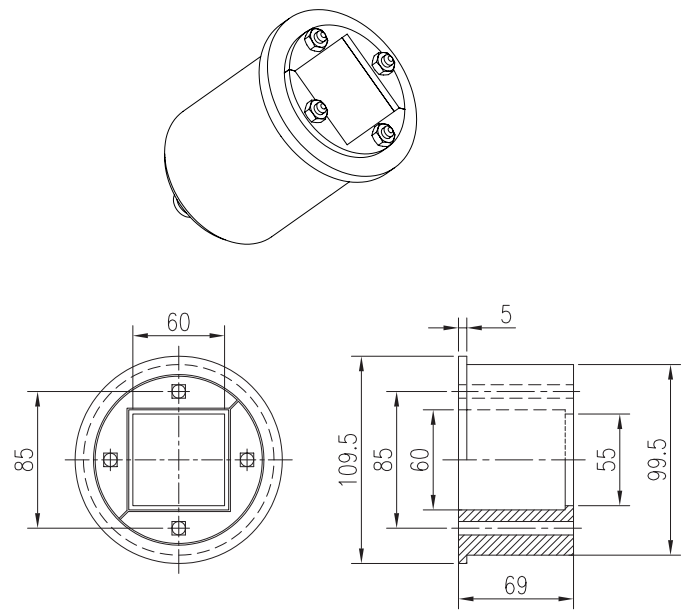


RGP Frame Series: RGP(O)

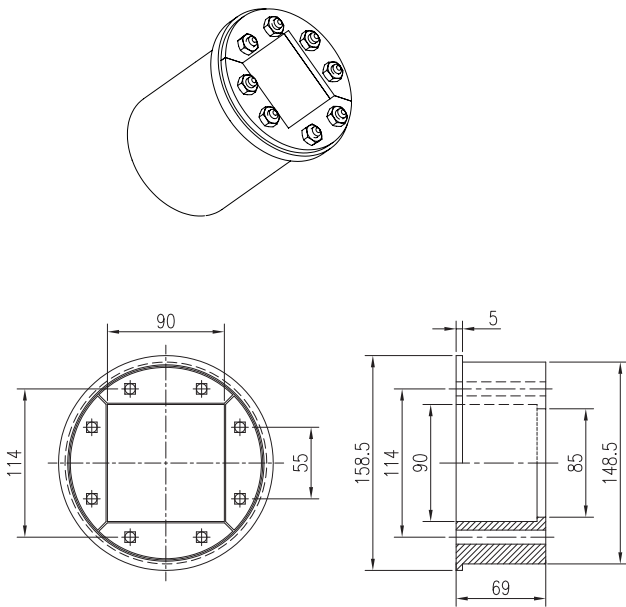
Endpacking RGP(O)-50



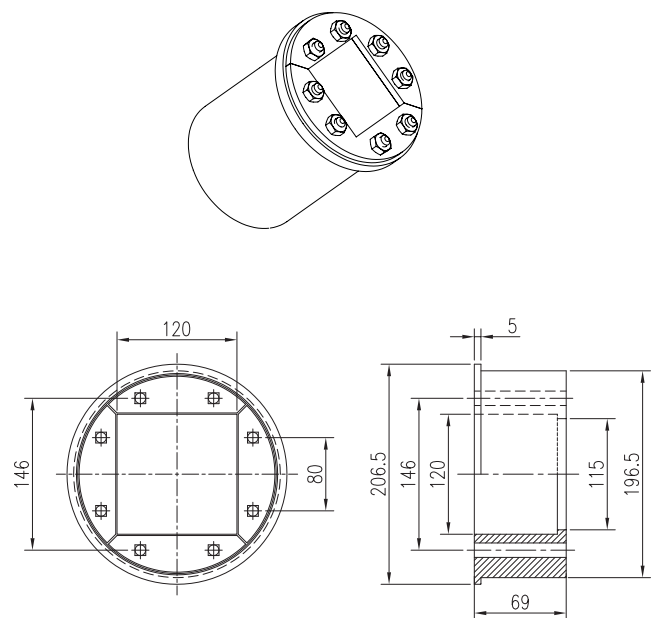
Endpacking RGP(O)-100



Endpacking RGP(O)-150



Endpacking RGP(O)-200

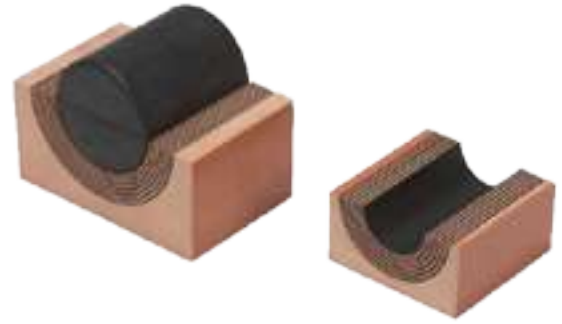


LB Component

Insert Blocks(LB)

LB type Module consists of twin half blocks made out of an EPDM rubber, and those have removable layers. Layered insert blocks are available in 7 basic module sized accommodating an extensive range of cable or pipe sizes from 3.0mm to 99.0mm.

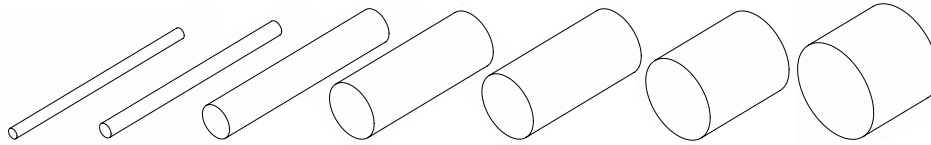
- 인서트 블록
- 재질 : EPDM 고무
- 사용가능케이블(파이프)사이즈 : 3.0mm~99.0mm



Center Core

These solid center cores of elastomer are used to fill void of layered insert blocks or to allow for the addition of cables or pipes at a future date. The layered insert blocks (LB) are available without a solid center cores.

- 센터코어 : 추후 사용 대비



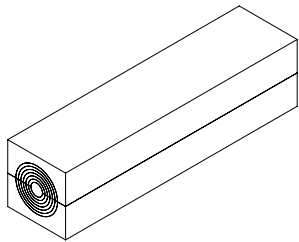
unit : mm

Type No.	Dimension "C"	Application
C-15	3.0Ø	LB-15 Module
C-20	4.0Ø	LB-20 Module
C-30	10.0Ø	LB-30 Module
C-40	22.0Ø	LB-40 Module
C-60	28.0Ø	LB-60 Module
C-90	48.0Ø	LB-90 Module
C-120	69.0Ø	LB-120 Module

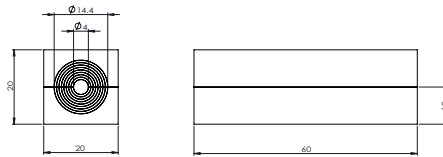
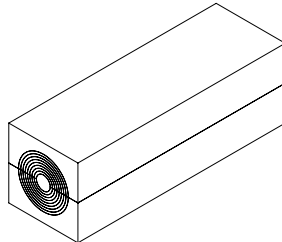


Insert Blocks

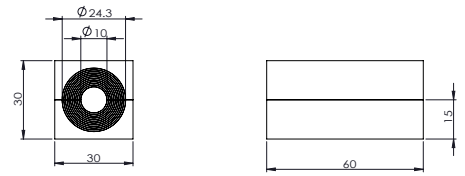
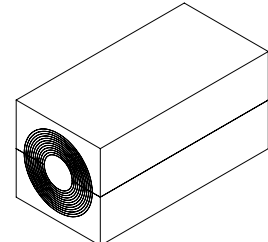
LB15



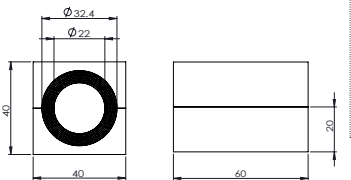
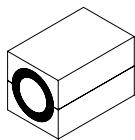
LB20



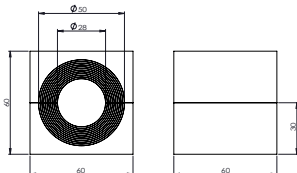
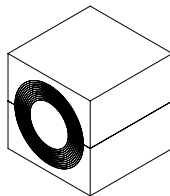
LB30



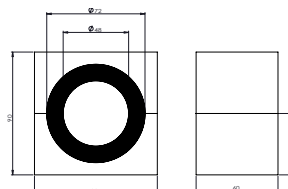
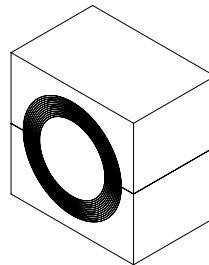
LB40



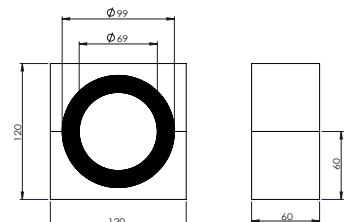
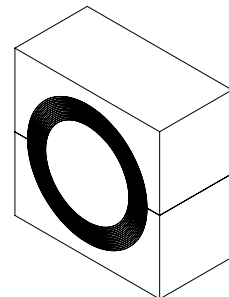
LB60



LB90



LB120



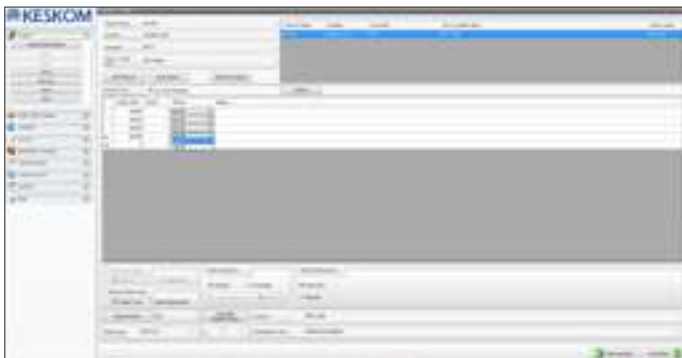
Design Software



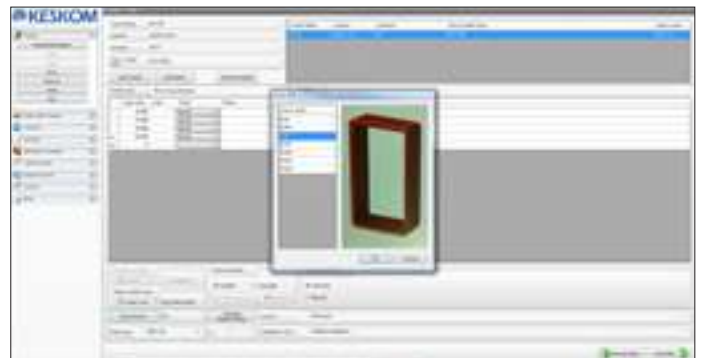
- 1 · Run "Multi Cable Transit".
 - Click "New" to create the new project.
 - Click "Next Step".



- 2 · Fill out the general project information.
 - Click "Next Step".



- 3 · Fill out the detailed project information.
 - Click "Add Transit".
 - Make sure that the transit information has been created.
 - Define "Cable Size" and Select "Block".



- 4 · Select "Frame Type".
 - Select "Frame Size".
 - Click "Calculate Frame Config" to find out the number of frames required.
 - Select "Material".
 - Click "Next Step".

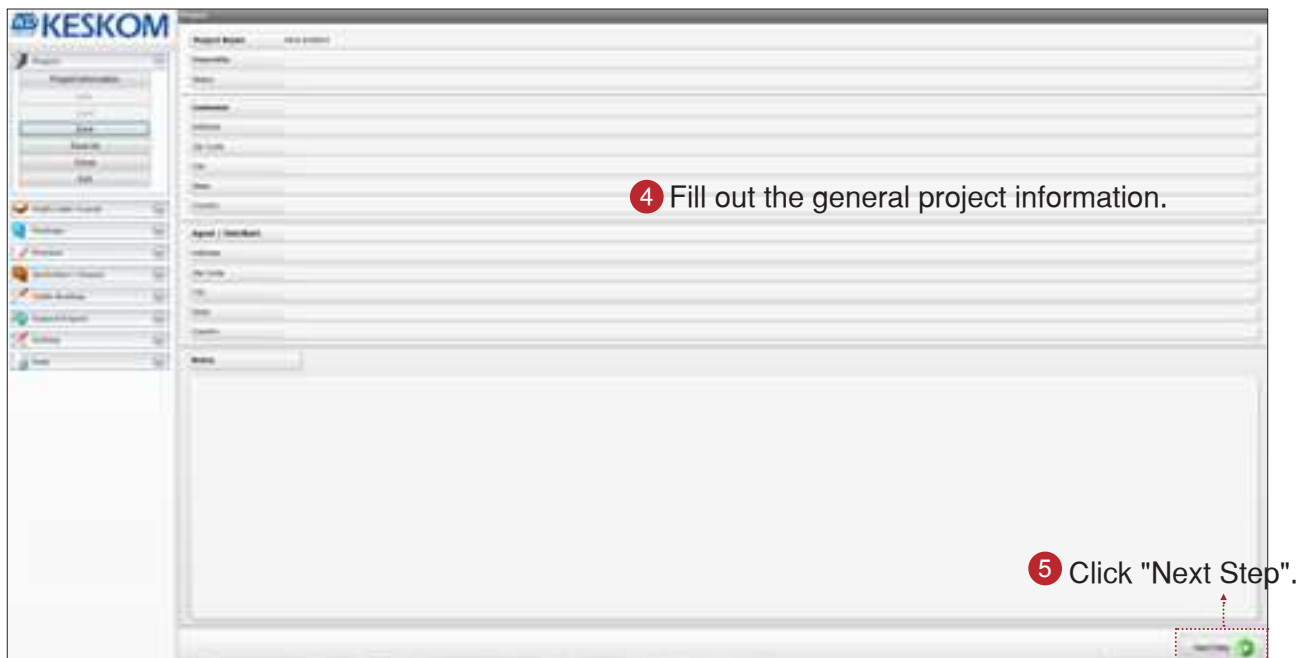


- 5 · Make sure that cables or pipes have been set up correctly.
· Make sure of the number and the type of Multi Cable Transit.
- 6 · View with 3D modeling.
· Click "Next Step".



- 7 · Click "Input" to fill out the additional information.
· Click "Next Step".
· Save the order sheet with right-click of the mouse.
- 8 · Submit the order sheet.

Design Software



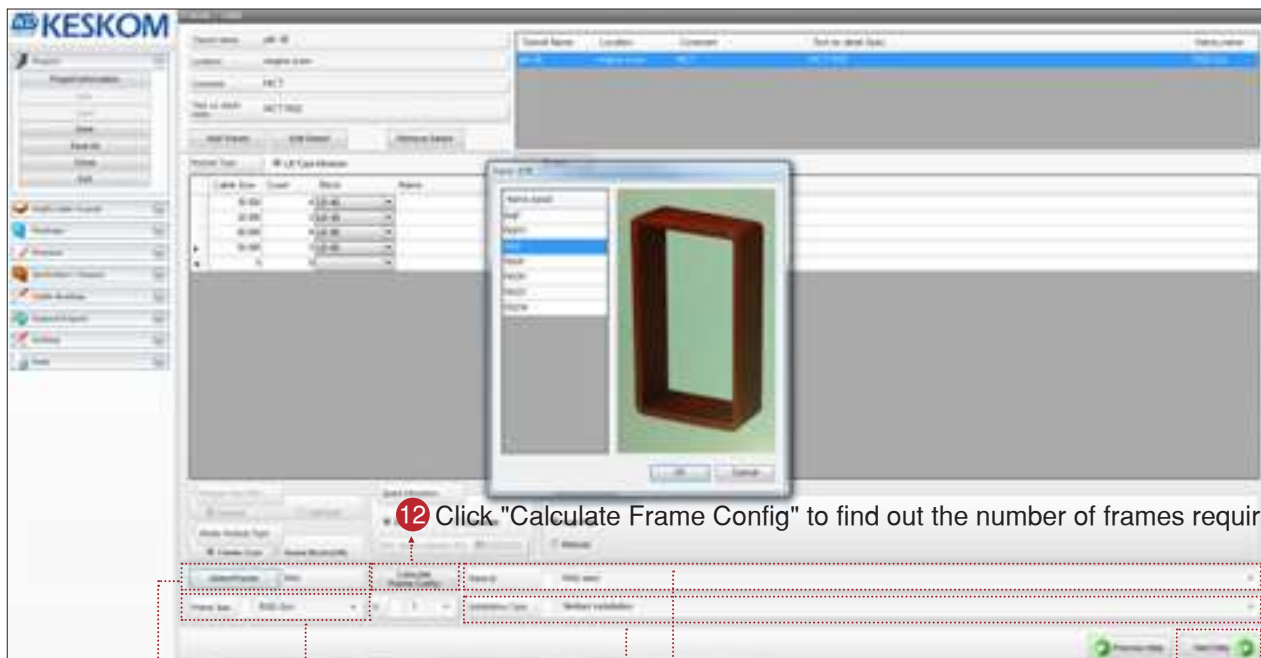
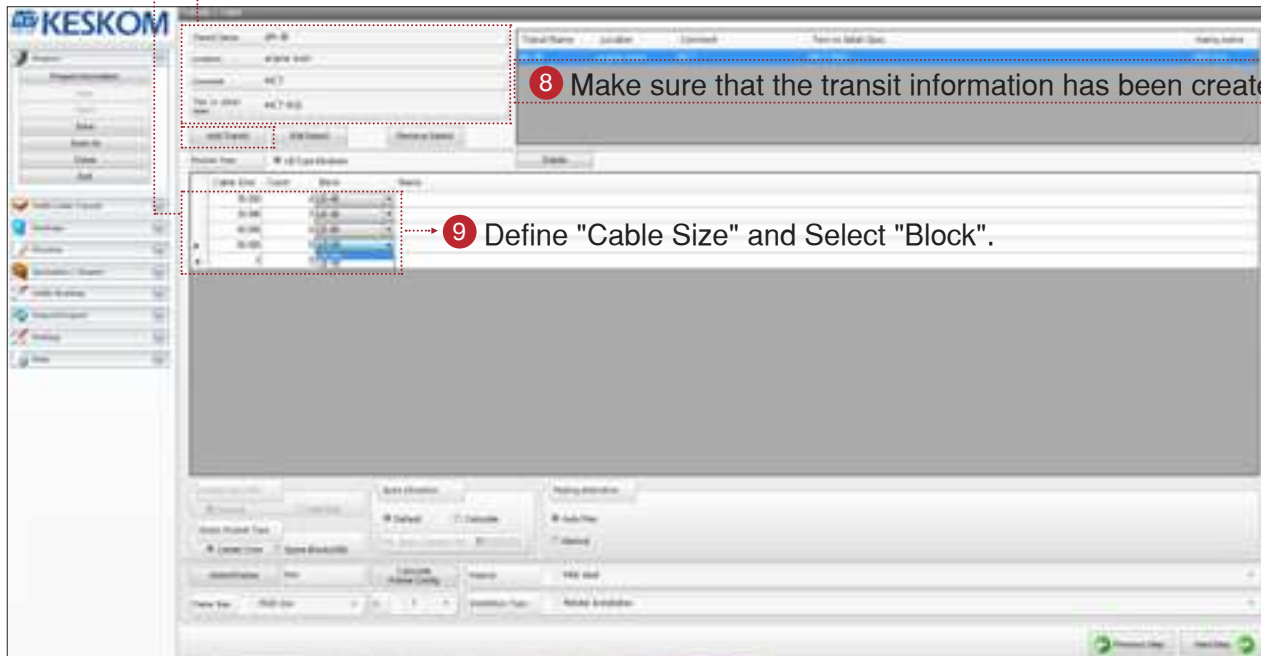


7 Click "Add Transit".

6 Fill out the detailed project information.

8 Make sure that the transit information has been created.

9 Define "Cable Size" and Select "Block".



12 Click "Calculate Frame Config" to find out the number of frames required.

10 Select "Frame Type".

11 Select "Frame Size".

13 Select "Material".

14 Select "Installation Type".

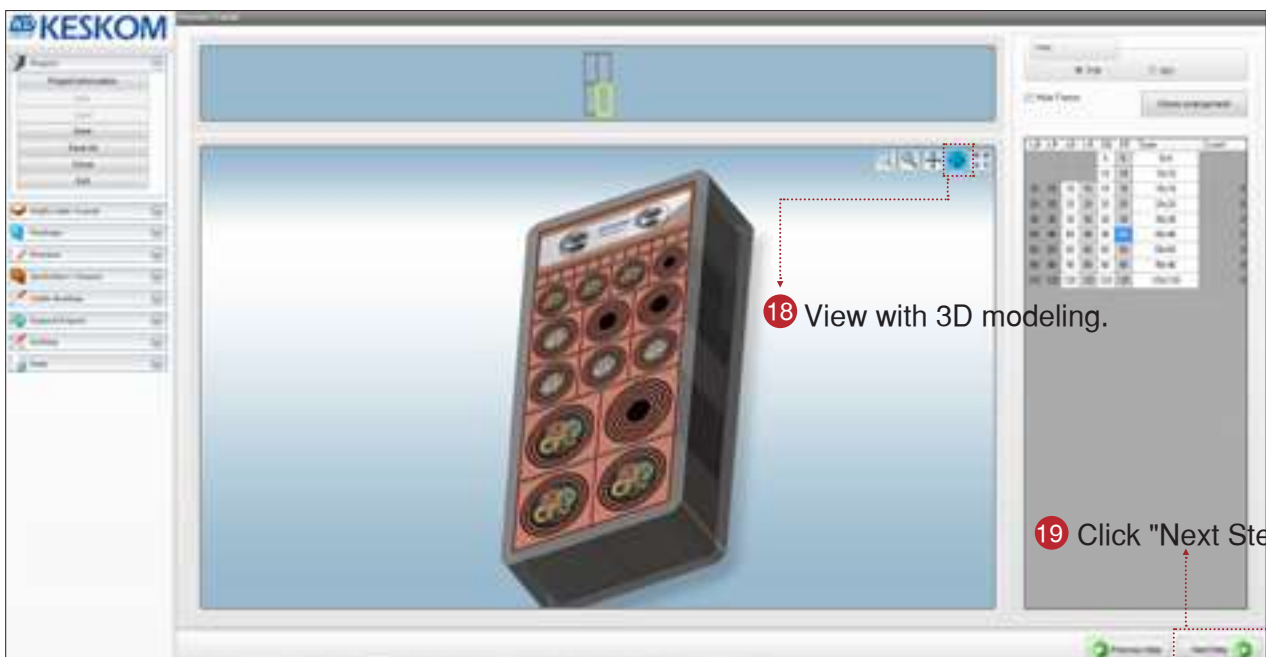
15 Click "Next Step".

Design Software

16 Make sure that cables or pipes have been set up correctly.

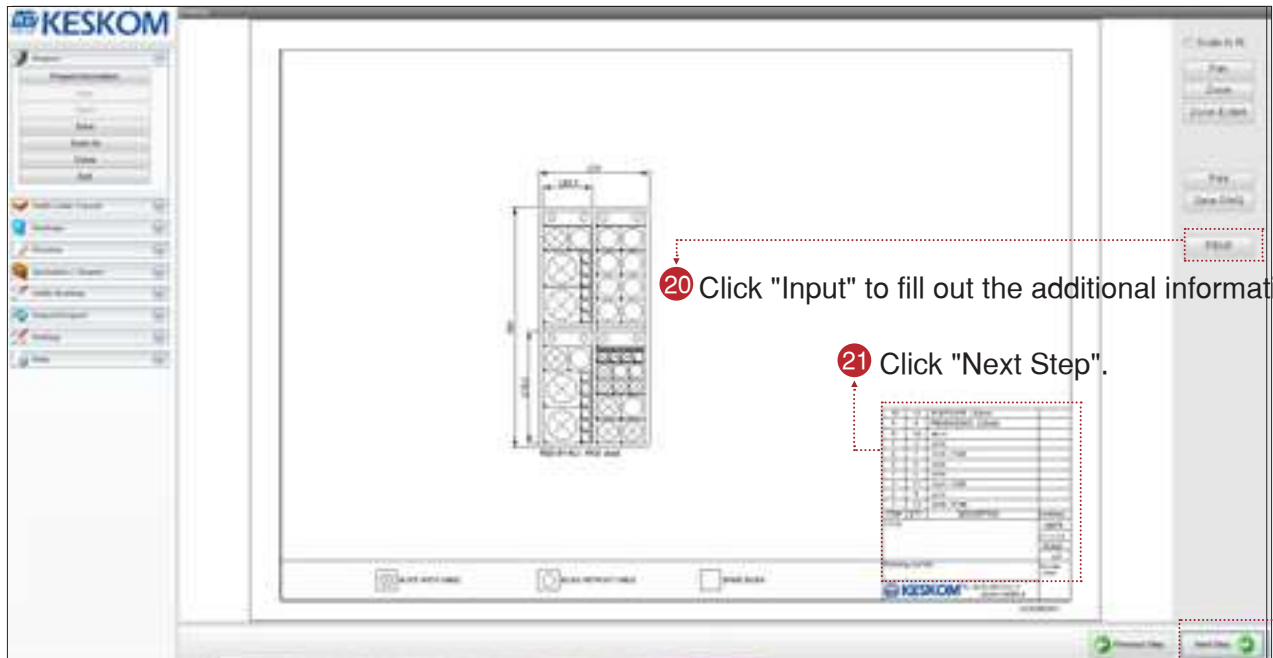


17 Make sure of the number and the type of Multi Cable Transit.



18 View with 3D modeling.

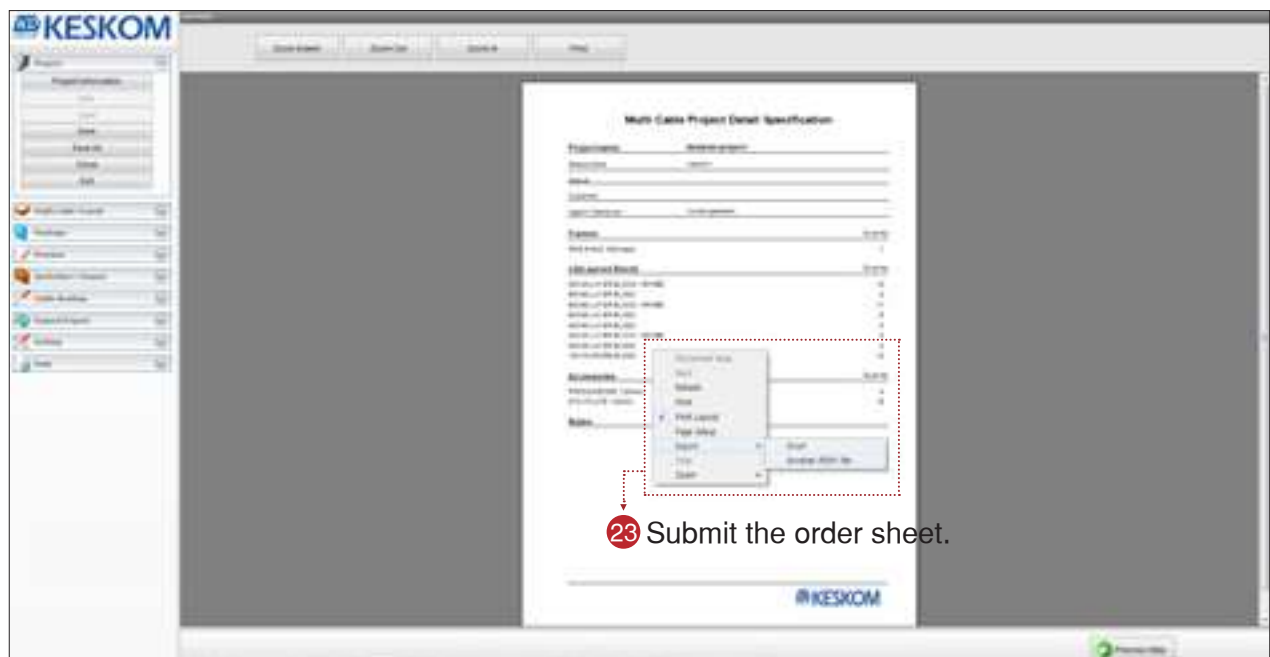
19 Click "Next Step".



20 Click "Input" to fill out the additional information.

21 Click "Next Step".

22 Save the order sheet with right-click of the mouse.



23 Submit the order sheet.



Installation Guide of Multi Cable Transit

RGS Type



1. Lubricate the inside of the frame, stayplates, compression plate and all the insert blocks.

1. 윤활제 도포-프레임, 고정플레이트, 압축플레이트, 인서트블럭



2. Begin packing the frame.

A stayplate is inserted between each layer of inserted blocks.

2. 인서트블럭, 고정플레이트 설치



3. The bolt in the jack is tightened with wrench of 19mm counter clockwise until there is a 32mm space between the plate and frame.

3. 잭을 이용해 프레임, 플레이트 사이를 32mm 까지 확장 (볼트를 반시계 방향으로 회전)



4. Insert the presswedge into the frame.

4. 프레스웨지 삽입



5. The nuts of the presswedge are tightened to compress it and complete all components. Approximately 12mm of thread should protrude on each bolt.

5. 볼트 조이기 (각 나사산이 12mm정도 돌출될때 까지)

Installation Guide of Multi Cable Transit

RGP Type



1. Remove dirt from the sleeve and hole.
Insert the RGP frame into the sleeve / hole.

1. 먼지 제거후, 프레임 삽입



2. Route pipes and cables.

2. 배선



3. Lubricate the inside of the frame and all the insert blocks.

3. 윤활제 도포(프레임, 인서트 블럭)



4. Begin packing the frame from the bottom to the top..

4. 인서트 블럭 설치



5. Slide the two or four endplates together and tighten the nuts 2mm each time, applying equal pressure to both endplates.
Approximately 12mm of thread should protrude on each bolt.

5. 각 볼트 2mm씩 조이기
(나사산이 12mm정도 돌출될때까지)

Installation Guide of Multi Cable Transit

RGP(O) Type



1. Remove dirt from the sleeve and hole.
If pipes and cables are pre-installed, use the RGP(O) frame.

1. 먼지 제거 후 (배선 존재시 RGPO프레임 사용)

2. Route pipes and cables.

2. 프레임 삽입

3. Lubricate the inside of the frame and all the insert blocks.

3. 윤활제 도포(프레임, 인서트 블럭)

4. Begin packing the frame from the bottom to the top.

4. 인서트 블럭 설치

5. Slide the two or four endplates together and tighten the nuts 2mm each time, applying equal pressure to both endplates. Approximately 12mm of thread should protrude on each bolt.

5. 각 볼트 2mm씩 조이기
(나사산이 12mm정도 돌출될때까지)

Manufacturing Procedure





Packing Procedure





1. 방폭구조 기호 등급 표기 예 : Ex d IIB T4 IP44

2. 방폭표기의 의미

Ex	d	II	B	T4	IP44
방폭기기	방폭구조	기기분류	가스등급	온도등급	보호등급
방폭기기	내압 방폭구조	산업용	가스등급B	최고표면온도 100℃ 초과 135℃ 이하	∅ 1mm의 고체와 튀기는 물에 대해 보호

3. 방폭구조의 종류 및 기호

구분	기호
내압방폭구조	Ex d
압력방폭구조	Ex p
안전증방폭구조	Ex e
유입방폭구조	Ex o
본질안전방폭구조	Ex ia, Ex ib
비점화 방폭구조	Ex n
물드 방폭구조	Ex m
충전 방폭구조	Ex q
특수방폭구조	Ex s
특수방진방폭구조	Ex SDP
보통방진방폭구조	Ex DP
방진특수방폭구조	Ex XDP

4. 폭발성 가스의 분류

폭발성 가스의 분류	A	B	C
최대안전틈새범위(내압)	0.9mm 이상	0.5mm초과 0.9mm미만	0.5mm 이하
최소점화전류비 (본질안전)	0.8 초과	0.45 이상 0.8 이하	0.45 미만
적용기기 (내압, 본질안전, 비점화)	IIA	IIB	IIC
대표적 가스	암모니아, 일산화탄소, 벤젠, 아세톤, 에탄올, 메탄올, 프로판	부타디엔, 에틸렌, diethyl ether, 에틸렌옥사이드, 도시가스	아세틸렌, 수소, 유화탄소

5. 기기의 분류

I : 탄광용	II : 공장 및 산업용
---------	---------------

6. 최고표면온도와 온도등급

최고표면온도의 범위(℃)	온도등급
300 초과 450 이하	T1
200 초과 300 이하	T2
135 초과 200 이하	T3
100 초과 135 이하	T4
85 초과 100 이하	T5
85 이하	T6

7. 위험장소별 방폭구조 적용

장소	본질안전		내압	압력	안전증	유입
	ia	ib				
0종 장소	○	-	-	-	-	-
1종 장소	○	○	○	○	△	○
2종 장소	○	○	○	○	○	○
폭연성분진 위험장소	특수방진구조					
가연성분진 위험장소	특수방진구조, 보통방진구조					

* 예전의 국내에서의 발화도 분류

발화점의 범위(℃)	발화도
450 이상	G1
300 이상 450 미만	G2
200 이상 300 미만	G3
135 이상 200 미만	G4
100 이상 135 미만	G5

8. 위험장소의 각 기준별 비교

위험분위기	정상상태에서 지속적 위험분위기	정상상태에서 일시적 위험분위기	이상상태에서 위험분위기
국내, 일본	0종 장소	1종 장소	2종 장소
IEC, 유럽	Zone 0	Zone 1	Zone 2
미국	Division1		Division2

9. IP등급

	첫째숫자(분진)	둘째숫자(물)	기타기호(숫자보다엄격)
0	무방호	무방호	A 손침입 방호
1	∅12.5mm의 고체(혹은 손가락)침입방호	수직으로 떨어지는 물방울	B 손가락침입 방호
2	∅50mm의 고체(손) 침입 방호	수직에서 최대 15° 로 떨어지는 물방울	C 장비침입 방호
3	∅2.5mm의 고체(기구) 침입 방호	수직에서 최대 60° 로 떨어지는 물방울(비)	D 전선침입 방호
4	∅1mm의 고체(전선) 침입 방호	(전방향으로) 튀기는 물	
5	동작에 이상없는 분진침입 방호	(전방향으로) 물분출	H 고정압기구
6	분진침투 없음	(전방향으로)강력한 물분출	M 동작중 물침입에 이상없음
7	-	잠시동안 침수 (사용자 요구)	S 미동작중 물침입에 이상없음
8	-	연속적인 잠수(사용자요구)	W 추가된 날씨조건 하에서 사용가능

TECHNICAL INFORMATION

Explosion Protection Classes

1. Division into Zones

To make it easier to select appropriate electrical equipment to design proper electrical installations, explosion-endangered areas are divided into zones. Information and specifications for division into zones. Information and specifications for this division zones are contained in IEC 60079-10 and in national standards.

An overview of the division into zones the assignment of devices (device category as EC directive 94/9/EC) for the zones concerned is shown in the table.

Gases, vapours, mists	Dusts	Definition (94/9/EC) Explosive atmosphere is present :
Zone 0 → category 1G	Zone 20 → category 1D	continuously or a long time or frequently
Zone 0 → category 2G	Zone 20 → category 2D	occasionally
Zone 0 → category 3G	Zone 20 → category 3D	seldom and for a short time

G=gases, D=dust

If doubts exist regarding the division into zones, then within the entire explosion - endangered area the scope of the protective measures should be chosen in accordance with the highest possible of occurrence of a dangerous explosive atmosphere in the given case. In such cases, it is advisable to seek assistance from expert organizations.

In zones 0 and 1, only electrical equipment for which a type test certificate from a recognized test organization exists may be used. In zone 0, however, only equipment that has been expressly approved for this zone be used. In zone 2, the equipment approved for use in zones 0 and 1 may also be used. Furthermore, in zone 2, electrical equipment may be used which meets the basic safety requirements of directive 94/9 EC and for which a declaration of conformity from the manufacturer exists

Zone 0

explosive gas atmosphere
= continuously or
for long periods

Zone 0 covers areas, in which an explosive gas atmosphere is present continuously or for long periods. This usually applies to the inside of containers or apparatus (vaporizers, reactors etc.,) if requirements of Zone 0 are met.

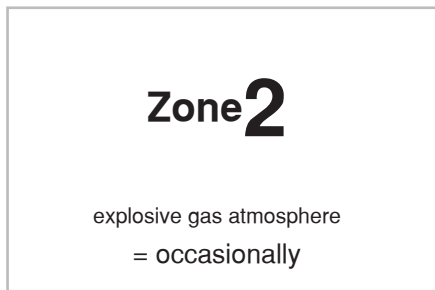
Zone 1

explosive gas atmosphere
= occasionally

Zone 1 covers areas, in which an explosive gas atmosphere can be expected to be present occasionally

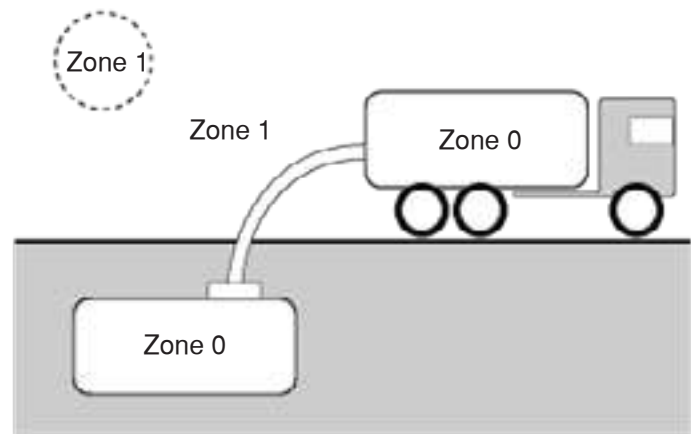
This can apply to areas surrounding Zone 0 areas surrounding charging doors areas surrounding fitting and draining facilities areas, where fragile apparatus, glass, ceramic or similar tubes are installed areas surrounding insufficiently tight cable glands, e.g. on pumps or valves, the inside of equipment such a vaporizers, reactors.

2. Example of zone classification



Zone 1 covers areas, in which an explosive gas atmosphere can only be expected very occasionally and if it does occur it will exist a short period only

This applies to areas surrounding zone 0 and 1 areas around flanged connections with customary flat gaskets, when using pipes in closed areas. Rooms, where flammable materials are being distributed in pipes with welded or brazed connections are not hazardous areas.



3. Explosion Groups and temperature Classes

It would be uneconomical, and sometimes even impossible, to always design all items of explosion-proof electrical equipment in accordance with maximum requirements, regardless to the intended type of use. Therefore, division of the items of equipment into groups and temperature classes is used in accordance with the characteristics of the explosive for which the equipment is intended.

First of all, a distinction is drawn two groups of equipment items:

- Group : I Electrical equipment for firedamp - endangered pits.
- Group : II Electrical equipment for all other explosion - endangered areas.

For electrical equipment of group II, a further subdivision takes place into explosion groups and temperature classes. An overview of the gap width limits and minimum ignition currents for the various explosion groups is shown in the following table:

Explosion group	Gap width limit	Minimum ignition current ratio relative to methane
II A	> 0.9mm	> 0.8
II B	0.5mm to 0.9mm	0.45 to 0.8
II C	< 0.5mm	< 0.45

From explosion group A to C, the degree of danger posed by the increases. The requirements to electrical equipment for these explosion groups increase accordingly. Therefore, information must, if necessary, be shown on the items of electrical equipment, indicating which explosion group they are designed for. Electrical equipment for C may also be used for all other explosion groups.

4. Temperature Classes

The ignition temperature of a combustible gas or liquid is the lowest temperature of a heated surface at which ignition of the gas/air or vapour/air mixture occurs. It is determined in a precisely defined experimental set-up (IEC 60079-4) and, in practice, represents the lowest temperature at which a hot surface can ignite the explosive atmosphere concerned.

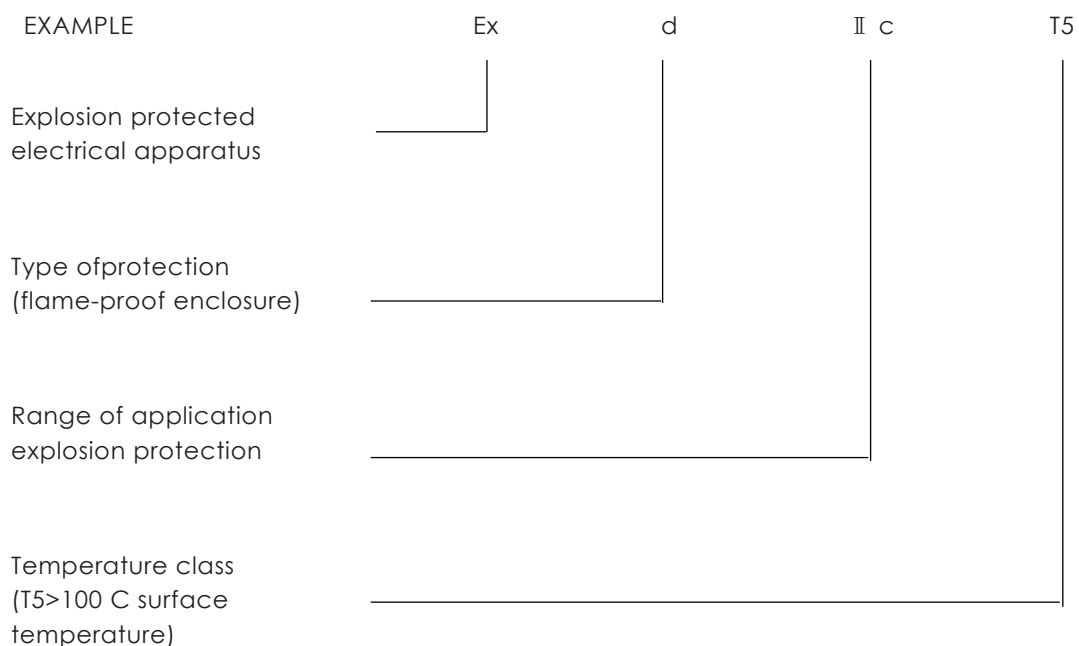
The ignition temperature makes it possible to divide combustible gases and vapours into temperature classes according to their ignitability. The maximum surface temperature of the gas/air or vapour/air mixture in which it is used. Naturally, items of equipment which correspond to a higher temperature-class (e.g. T5) are also permissible for uses in which a lower temperature class (e.g. T2 or T3) is stipulated.

Temperature Class	Highest permissible surface temperature of the equipment	Ignition temperatures of the combustible substances
T1	450 °C	> 450 °C
T2	300 °C	> 300 °C
T3	200 °C	> 200 °C
T4	135 °C	> 135 °C
T5	100 °C	> 100 °C
T6	85 °C	> 85 °C




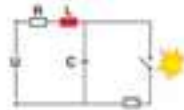

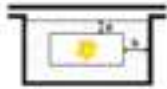

5. Types of Ignition protection

In areas where, in spite of primary measures for explosion protection, the occurrence of dangerous explosive atmospheres must be expected, only explosion-proof equipment may be used. According to the construction rules stated in the series of standards (IEC 60079-0). Explosion-proof electrical equipment can be constructed with various types of ignition protection. The particular type of ignition protection used by the manufacturer for a particular device depends mainly on the nature and function of the device. In this connection, it must be noted that the ignition protection type "n" is applicable only in zone 2. The following table gives an overview of the ignition protection types covered by standards, and describes the basic principle and the usual application cases. In addition to the normal data (manufacturer, type, serial No. electrical data), the data relating to explosion protection must be included in the marking.

6. Identification mark of the apparatus



7. Types of protection

Types of protection to IEC or European Standard	Basis principle	Schematic	Applications
Flameproof Enclosure d IEC60079-1	A Type of protection in which the parts, which can ignite an explosive atmosphere are placed in an enclosure, which can withstand the pressure developed during an internal explosion mixture and which prevents the transmission of the explosion to the explosive atmosphere outside the enclosure.		Switchgear, control and indicating equipment, control boards, motors, transformers, light fittings and other spark-producing parts.
Increased Safety e IEC60079-7	A type of protection in which measures are applied so as to prevent with a higher degree of security the possibility of excessive temperatures and of the occurrence of excessive temperatures and of the external parts of electrical apparatus which does not produce them in normal service.		Terminal and connection boxes control boxes housing EX-modules (of a different type of protection) squirrel cage motors light fittings
Pressurized Apparatus p IEC60079-3	A type of protection in which the entry of surrounding atmosphere into the enclosure of the electrical apparatus is prevented by maintaining inside the said enclosure a protective gas (air inert or other suitable gas) at a higher pressure than that of the surrounding atmosphere. The over pressure is maintained either with or without continuous flow of the protective gas.		As above, but especially for large equipment and complete rooms
Intrinsic Safety i IEC60079-11	A type of protection in which the electrical apparatus contains intrinsically safe circuits, which are incapable of causing an explosion in the surrounding atmosphere. A circuit or part of a circuit is intrinsically safe, when no spark or any thermal effect in this circuit, produced in the test conditions prescribed in the standard (which include normal operation and specific conditions) is capable of causing ignition.		Measurement and control equipment
Oil immersion o IEC60079-6	A type of protection in which the electrical apparatus or parts of the electrical apparatus are immersed in oil in such a way that an explosive atmosphere, which may be above the oil or outside the enclosure cannot be ignited.		transformers (only used rarely now)
Powder Filling q IEC60073-5A	A Type of protection in which the parts, which can ignite an explosive atmosphere are placed in an enclosure, which can withstand the pressure developed during an internal explosion mixture and which prevents the transmission of the explosion to the explosive atmosphere outside the enclosure.		Transformers capacitors heater strip connection boxes, electronic assemblies
Moulding m (in preparation) IEC60079-18	A type of protection in which the parts which can ignite an explosive atmosphere are enclosed in a resin sufficiently resistant to environmental influences in such a way that this explosive atmosphere cannot be ignited by either sparking or heating, which may occur within the encapsulation.	 explosive atmosphere	only small capacity switchgear control gear, indicating equipment, sensors
Non sparking n IEC60079-15	Electrical equipment is not able to ignite a surrounding explosive atmosphere (in the case of normal operation and under defined abnormal operating conditions).	Zone 2 The ignition types cover several ignition protection methods.	All items of electrical equipment for zone 2; less suitable for switchgear and switching - installations.

8. Classification of the fluids per explosion groups according to IEC 79-1

Group	Products
	Methane (fire damp).
	Acetone, Industrial methane, Butyl alcohol, Ethyl alcohol, Ethyl aceane, Methanol, Butane Proane, Hexane, Ammonia, Blast furnace gas, carbon monoxide, Pentane, Heptane, Iso-octane Decane, Benzene, Xylene, Xylene, Cyclohexane, Ethyl Methyl cetone, methyl Acetae, n-propyl Acetate n-Butyl acetate, Amyl acetate, methylene, methylene chloride, Isobutanol, Amyl alcohol, Ethyl nitrite
II	B, Ethylene, Butadiene 1.3. Diethyl ether, Ethylene, Town gas, Coke oven gas
III	C, Hydrogene, Carbone disulphide CS2, Acetylene H2, Ethyl nitrate

9. Classification of the fluids per self ignition temperature class

Temperature Class	Products				
T1 (450 °C)	Ethyl acetate Methyl acetate Acetique(Acide) Acetone Acetonitrile Acide acétique Acide cyanhydrique Acrylonitrile Ammoniac aniline Benzene Benzyle(Chlorure) Bromoethane Bromomethane	Butylmethylcetone Carbone(oxyde) Chlorobenzene n-Chlorobutane Chloroethane Chloromethane Chloropropane Benzyl chlorure Methylen chlorure Vinyl chlorure (or monochloroethylene) m and p-Cresols O-Cresol	Cyclopropane Diacetone alcool commerciale Diacetone alcool pure Dichlorobenzene 1-2-Dichloroethylene Dichloropropane Ethane Ethyle(Acelate) Ethemethylcetone methyl Formiate Hydrogene Isobutene Mesitylene	(or trimethylbenzene) Methane Methanol Methyl(Acetate) Methyl(Formiate) Methylene(Chlorure) Methylstyrene Monochlorobenzene Monochloroethylene (or vinyl chlorure) Naphtalene Nitrobenzene Carbone oxyde Phenol	Propane Propene(or Propylene) Propylene(or propene) Propylmethylcetone Pytidine Styrene monomere Toluidine Trimethylbenzene (or mesitylene) Vinyl(Chlorure) m-Xylene o-Xylene p-Xylene
T2 (300 °C)	Amyl acetate Butyl i-acetate Butyl n-acetate Propyl acetate Vinyl acetate Acelyacetate (or 2-4 pentanedione) Acelyl Acetylene Alcohol a,ylique primaire(or pentanol 1) Alcohol amylique secon-daïre(or pentanol 2) Allyre(chlorure) Amyl(Acetate) Butadiene 1.3 n-Butane Butanol normal	Butene Butyl(i-acetate) Butyl(n-acetate) Chlorydrique(Ethylene) Chloroethanol(or Ethylene chlorhydrique) Acetyl chlorur Allyl chorure Cumene Cyclohexanol Cyclohexanone Cyclohexene Cymene 1-1-Dichloroethylene Diethylamine Dimethylamine Dimethylaniline Dimethylformamide Epichlorhydrine(or	propane, 1 chloro 2,3 epoxy Epoxyethane (ro oxyde dethylene) Epoxypropane Ethanol Ethylanmine Ethylbenzene Ethy(Formiate) Ethy(Methacrylate) Ethy(Methylacrylate) Ethylene Ethylene chlorhydrine (or Chloroethanol) Ethylene(Oxyde) (or epoxyethane) ethyl Formiate Gaz oil Isobutanol(or Alcohol	isobutylique) Isobutylique(Alcohol) Isooctane Ethyl methacrylate (or Ethyl methacrylate) Methyl methacrylate (or methyl methacrylate) Ethyl methacrylate (or elhyl methacrylate) Methylamine Methyl(Methacrylate) Methyl(Methylacrylate) Nitroethane Nitromethane 1-Nitropropane 2-Nitropropane n-Octane Ethylene oxyde	(or epoxyethane) Paraformaldehyde 2,4 Pentanedione (or acetyiacelone) Pentanol 1(or Alcohol amylique secondaire) Pentanol 1(or Alcohol amylique primaire) Pentanol 2(or Alcohol amylique secindaïre) Pentanol 1 chloro 2,3 epxy(epichlorhydrine) Propanol n-Propylamine Proyle(Acelae) Trioxanne Vinyie(Acetate)
T3 (200 °C)	Acroleine Alcohol tetrahydro furfurique Adehyde crotonique Benzol diluuant n-Bromobutane Butylcarbitol	(or Bulyldiglycol) Butylldglycol (or Butylcarbitol) n-Butylaldehyde Cyclohexane Nettoyage essence (or solvant)	Essences speciales Terebenthin essence Ethoxyethanol Ethylcyclobutane Ethylcyclohexane Ethylcyclopentane Ethylmercaplan	Fuel oil n 1(or kerosene) n-Heptane n-Hexane Hydrogene sulfure Solvant(or nettoyage essence)	Solvant paraffnique (essences speciales) Tetrafluoroethylene Tetrahydrofuranne Tetrahydrofurfurylique (Alcool) White spirits
T4 (135 C)	Acetaldehyde (or aldehyde acétique) Aldehyde aceliq	Acetique(Aldehyde) Benzaldehyde Dibutylether	(pr ether butylique) Diethylether (or ether ethyllique)	Dioxanne Ether ethylique (or diethylether)	Ethylique(Ether) Ethylmethyl ether Trimethylamoe
T5 (100 C)	Carbone(Sulfure)				
T6 (85 C)	Ethy(Nitrite) ethyl Nitrite				

According to the gas or vapour subdivision

The table below indicates the equipment groups which can be used depending on the gas or vapour subdivision
A distinction is made between two groups of electrical

equipment :

Group I : electrical equipment intended for underground work in mines with explosive atmospheres.

Group II : electrical equipment designed for surface work.

Gas-vapour subdivision	Equipment groups which can be used		
	Increased Safety e	Increased Safety e	Associated Protection Modes d and e
A	II	II A, II B, II C	II A, II B, II C
B	II	II B, II C	II B, II C
C	II	II C	II C

Equipment selection vapour subdivision

- | | |
|--|--|
| · Equipment for use in zone 0
Protection mode
- ia Intrinsic safety | Equipment for use in zone 1
Protection mode
-d Flameproof enclosure |
| · Equipment for use in zone 2
-electrical equipment for zone 0 or zone 1
-equipment with specific protection mode n (IEC 79-5) | -p Pressurized
-q Powder filled
-o Oil immersion
-e Intrinsic safety
-ib Intrinsic safety
-m Encapsulated |

Selection as a function of the equipment group

- Protection modes e,m,o,p and q are marked "Group " and may be used in all subgroups A,B,C.
- Protection modes d and l are marked "Group A, B or C" and must not be used in subgroups higher than marked.
B must not be used in C but can be used in A

10. Standards and Protection Modes

Ex symbol	CENELEC Standards European Cat. Nos	IEC Standards	Protection Modes
-	EN50014	60079-0	General rules
Ex o	EN50015	60079-6	Immersion in oil
Ex p	EN50016	60079-3	Internal overpressure
Ex q	EN50017	60079-5	Powder filling
Ex d	EN50018	60079-1	Flameproof enclosure
Ex e	EN50019	60079-7	Increased safety
Ex i	EN50020	60079-11	Inherent safety
Ex n	EN50021	60079-15	Non sparking
Ex m	EN50028	60079-18	Encapsulation
-	EN50033	-	Cap lamps(mines)
-	EN50039	-	Inherent safety systems
-	EN50050	-	Electrostatic spraying equipment
-	EN50053	-	Manual electrostatic spray guns



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KUKDONGELECOM

128, DASAN-RO, SAHA-GU, BUSAN,
KOREA

TEL: +82-51-266-0050 FAX: +82-51-265-0985

KESKOM

ROOM 15/16, NO 110, SEOBUSAN T-PLEX,
3153-1, DAEJEO2-DONG, GANGSEO-GU,
BUSAN, KOREA

TEL: +82-51-245-5111 FAX: +82-51-261-0030

KUKDONGELECOM - DALIAN

#49, GUSHAN STREET,
DAGUSHAN DEVELOPMENT ZONE, DALIAN,
CHINA

TEL: +86-411-3921-8000 FAX: +86-411-3921-8008

www.kdkorea.net