

On land





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Highest demands from the beginning

MCT Brattberg's module system for cable and pipe transits has led the market for over half a century. Together with independent test institutes, we have developed testing methods and specifications that will guarantee seals that can withstand the most extreme situations that can occur on land and at sea.

Ever since receiving our first patent in 1952 we have led development and continually launch new products. We now have a flexible range of products suitable for a variety of situations, tested and approved by various test institutes the world over.



Where valuable assets are at risk

MCT Brattberg protects against fire, water, gas, smoke, pressure, shock, chemicals, EMC, damaging insects, cold, and human error.

Happily it is very seldom that our products are put to the test once they are installed, but when an accident does occur they are invaluable and are a guarantee that damage to property, the environment and people will be reduced to the absolute minimum or to none at all.

All buildings and plant require their own individual safety solutions. MCT Brattberg products are therefore developed to carry out various safety functions in every conceivable environment. Sometimes it is sufficient to have complete protection against fire. In other more demanding situations it is, for example, high pressure and extreme explosion which need to be contained. A Brattberg seal also provides sound insulation and can withstand continuous vibration. Our special EMC transits give special protection against electromagnetic disturbances and static electricity.

All our products are produced under strict quality control. Incoming raw materials must be accompanied by a certificate and careful delivery control is maintained.



Extremely high demands are made in nuclear power stations. A transit used here must withstand the most extreme conditions.

In some buildings a fire must not be allowed to spread, e.g. in hospitals and high-rise buildings.



Hardly any other industry has such a high concentration of combustible materials than the petrochemical industry, which accepts only the very highest quality transits.

In military buildings housing sensitive electronic equipment a transit must be capable of withstanding both high explosion and electromagnetic disturbances. Our EMP transits can deal with both of these problems.



Tested, developed and certified

We have always had and still have the ambition: to be the market's best choice as regards pipe and cable transits.

As early as 1983 our quality system was brought in line with the extreme demands applying to the nuclear power industry. MCT Brattberg is approved and classified by, among others,

BSI QA and agreements with EN ISO 9001:1994. Approval means that BSI QA makes regular quality inspections of our manufacturing plant.

Our products are tested and certified by a long list of customers, laboratories and certification organisations.

Tested by:

*Aero Naval Lab. Inc. USA - Airo United Kingdom - AISH & Co United Kingdom
Central Building Res. Institute United Kingdom - Central Building Res. Institute India
Dantest Denmark - Dayton Brown USA - EMTECH Sweden - IBMB Germany
International Research & Development United Kingdom - LCIE France
Lab. National Dessais France - Loss Prevention Council United Kingdom
National Defence Research Institute Sweden - RAPRA United Kingdom
Saab Avionics Sweden - SINTEF Norway - Southwest Research USA
Swedish National Testing Institute Sweden - Swiss Testing Service Switzerland
TNO Netherlands - ULC Canada - Warrington United Kingdom*

Certified by:

*BRE United Kingdom - Bundesamt für Zivilschutz Germany
ETA Danmark A/S Denmark - Institut für Bautechnik Germany
SINTEF Norway - SITAC Sweden - Swedish Rescue Services Agency Sweden*

Please consult MCT Brattberg for latest updated certificates and approvals.





MCT Brattberg, the ingenious original

MCT Brattberg is based on an idea that is as simple as it is ingenious. The product consists of two components - a frame and packing blocks. The efficient seal is achieved when the packing blocks are pressed together around cables and pipes in the frame with the aid of a compression plate.

The heart of the system is a rubber material called Lycron, from which the insert blocks are made. It is extremely resistant to fire but MCT Brattberg is much more than a fire and explosion barrier. In addition to extreme heat and enormous pressure changes, the transits withstand smoke, extreme temperature changes, vibration, sound, damaging insects, chemicals and the effects of ageing.

The original standard block, together with the newly developed, flexible AddBlock, creates even better opportunities for fast, simple and safe installation. The U-block simplifies and improves certain types of installation and is a complement to both the other block types.

Reliability, simplicity and flexibility are three ingredients that make MCT Brattberg the first choice when specification demands are high.



Combination opportunities create flexibility

All insert blocks in the MCT Brattberg range are based on the same idea. The standard block can freely be combined with AddBlocks and U-blocks since their outer dimensions are the same. Flexibility is unlimited and simplifies both stock-keeping and installation. Seals become just as effective irrespective of the combination employed.

Standard blocks are the traditional method used. For many electricians this is synonymous with "a Brattberg". This method is often the first choice in new buildings where cable dimensions are known and when no changes are expected during installation.

The standard block is available for cable dimensions between 4 and 100 mm in diameter. Other dimensions can be supplied to special order. Unused space is filled with filler blocks.

Sealing with AddBlocks is an effective method when the exact cable

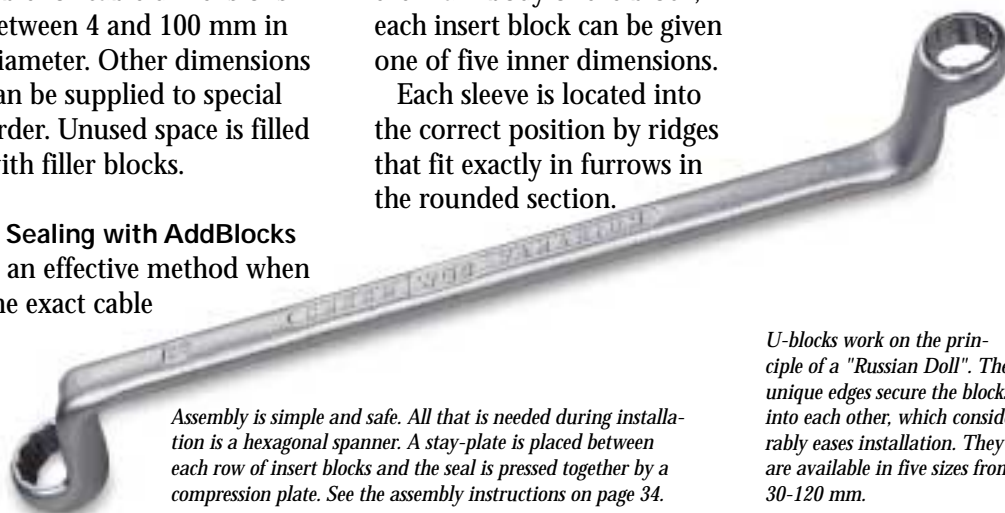
dimensions are not known in advance. This could be repair work or extra cable installation where documentation is not complete.

By using only 11 different AddBlocks it is possible to seal 66 different cable dimensions. Each AddBlock has 4 parts that can be torn off and, by pressing them into the main body of the block, each insert block can be given one of five inner dimensions.

Each sleeve is located into the correct position by ridges that fit exactly in furrows in the rounded section.

This avoids "telescoping" and the seal is guaranteed as safe as in a Standard block.

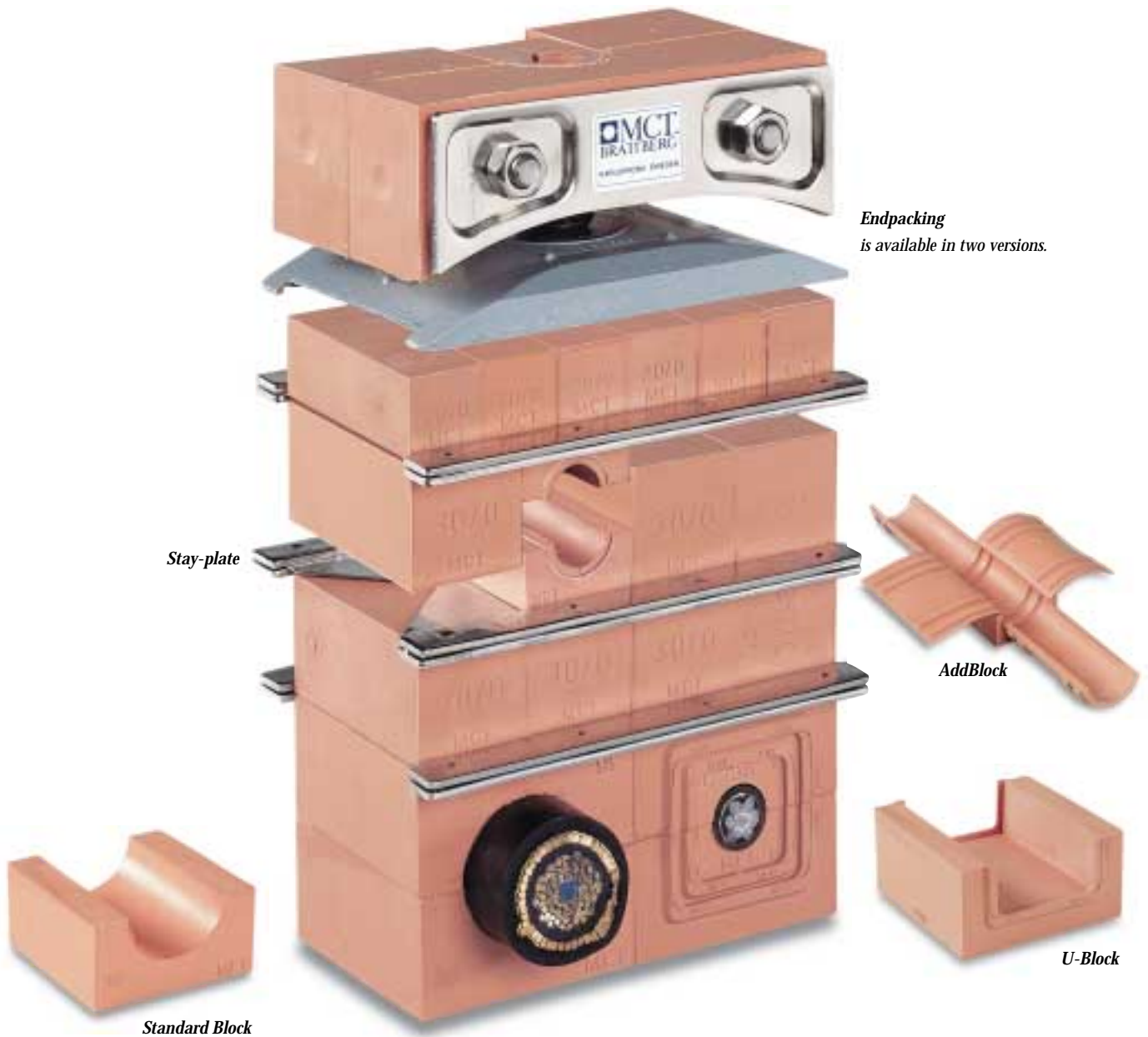
Sealing with U-blocks is used as a complement to both Standard blocks and AddBlocks. With U-blocks one can change the outer dimension of the block. For example it is possible using U-blocks to centre a small cable beside a large one or to centre a cable in the round RGP frame.



Assembly is simple and safe. All that is needed during installation is a hexagonal spanner. A stay-plate is placed between each row of insert blocks and the seal is pressed together by a compression plate. See the assembly instructions on page 34.

U-blocks work on the principle of a "Russian Doll". The unique edges secure the blocks into each other, which considerably eases installation. They are available in five sizes from 30-120 mm.





Stay-plate

Endpacking is available in two versions.

AddBlock

Standard Block

U-Block

All blocks are made from Lycron, a halogen-free polymer, specially developed by MCT Brattberg. All Lycron parts are supplied pre-lubricated to make installation easy.

Special materials and fine tolerances

Very high demands are made on blocks used in cable transits. If the fire resisting classification is to be retained, the material must not only be inflammable. It should in principle be as resistant to heat as the bulk-head itself. It must not melt or harden and become brittle. Nor must it emit poisonous or corrosive gasses or smoke when heated. The material must also be resistant to chemicals and gasses and must not age noticeably for several decades.

The halogen-free Lycron material was introduced in 1986. It is an exclusive material specially developed by MCT-Brattberg to meet very particular specifications.

Lycron is a synthetic polymer consisting of 21 different ingredients. We are not willing to disclose what these are or in what proportions they are used, but we will gladly share our test results and the experiences of users.

Because Lycron is free from halogen means it does not emit any corrosive gasses when subjected to heat.

It also has an extremely low smoke index, is incombustible and resists explosions, smoke, temperature changes, ageing and radioactivity. Not even rats or other rodents find the material appetising. The blocks are manufactured by injection moulding, which is a more complex method than extrusion but is the only alternative if a high degree of quality is required.



Exact measurements and perfect fit facilitate installation work and are a guarantee for the integrity of the transit.

Special products for special uses

MCT Brattberg manufactures several different special products. Transits that are subjected to extremely high pressure. Transits that must screen electrical pulses and interference, electronic sabotage and static electricity.

The E series of frames and other components provides the same effective protection as MCT Brattberg's standard system, but they also provide protection against electro-magnetic pulses and static electricity. A hardened metal plate hinders disturbances from passing the transit and act as an extended wall screen.

All dimensions are exact as with other MCT Brattberg products.

Please contact us if you would like more information about our EMC seals and our other special products.



Products that give protection against EMC.





Product- programme



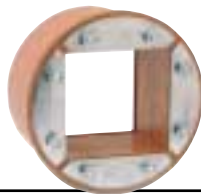
RGB/RGG
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Standard Blocks
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RGB/RGG

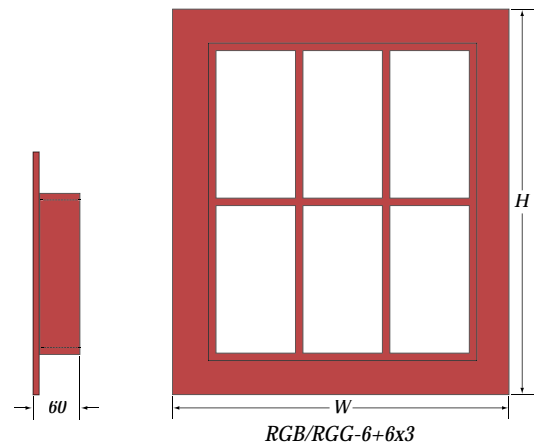
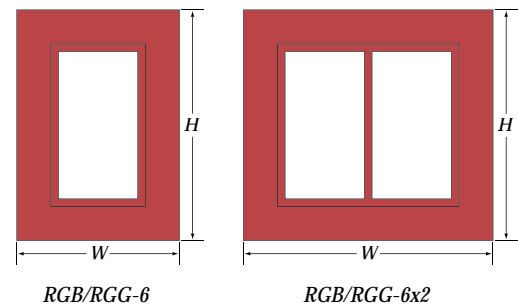
RGBO/RGGO WITH REMOVABLE END

RGB is MCT Brattbergs standard frame for embedment or built-in. RGB comes in four different sizes, in varying height and designates RGB-2, RGB-4, RGB-6 and RGB-8. The width dimension is always the same, 120 mm, as well as the depth 60 mm. The frame profiles width are 60 mm and the thickness of the material is 6 mm. For installations where cables already are in place the RGBO frame with openable gable is used. More information about combination frames can be found on page 18.

RGG is a standard frame designed for plaster or light concrete walls. It consists of two parts: a steel frame and a counter frame that both holds the insulation in place and protects the edges of the wall board. Both frames are pre-bored. RGG has the same dimensions as RGB. The counter frame is available in three different depths to fit different wall thickness, see table 17. For installations where the cable has already been drawn, frame type RGGO with openable ends is used. More information about combination frames can be found on page 18.



		Size in mm							
FRAME SIZE	H	W (width) Combination frames							
	(height)	x 1	x 2	x 3	x 4	x 5	x 6	x n	
RGB/RGG-2	221	240.5	371	501.5	632	762.5	893	W = 110+	
RGB/RGG-4	279.5	- - -	- - -	- - -	- - -	- - -	- - -	130.5 x n	
RGB/RGG-6	338	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-8	396.5	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-2+2	332	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-2+4	390.5	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-2+6	449	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-2+8	507.5	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-4+4	449	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-4+6	507.5	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-4+8	566	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-6+6	566	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-6+8	624.5	- - -	- - -	- - -	- - -	- - -	- - -		
RGB/RGG-8+8	683	- - -	- - -	- - -	- - -	- - -	- - -		



n = number of frames in width.
 Tolerances single frame: 3.5 mm.
 Thickness of material 6 mm except for internal horizontal and vertical walls in combination frames such as 10 mm.



RGG

Counter frame

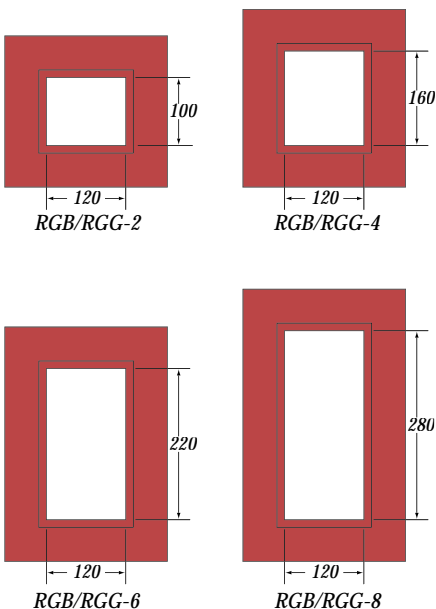
Weight in kilograms

MATERIAL	FRAME SIZE	W (width) Combination frames						
		x 1	x 2	x 3	x 4	x 5	x 6	
STEEL	RGB/RGG-2	3.1	5.0	6.9	8.8	10.7	12.6	
	RGB/RGG-4	3.8	5.9	8.1	10.2	12.4	14.6	
	RGB/RGG-6	4.4	6.8	9.2	11.5	13.8	16.3	
	RGB/RGG-8	5.0	7.7	10.4	13.1	15.8	18.5	
	SS1312	RGB/RGG-2+2	5.0	7.9	10.9	13.9	16.8	19.8
	SS EN 10025-S235JRG2	RGB/RGG-2+4	5.6	9.0	12.4	15.7	19.1	22.4
		RGB/RGG-2+6	6.2	9.9	13.6	17.3	21.0	24.7
	DIN RST 37-2	RGB/RGG-2+8	6.9	11.0	15.1	19.2	23.3	27.4
	ASTMA36	RGB/RGG-4+4	6.2	9.9	13.6	17.3	21.0	24.7
	BS 4360 gr. 40	RGB/RGG-4+6	6.9	11.0	15.1	19.2	23.3	27.4
		RGB/RGG-4+8	7.4	11.8	16.2	20.6	25.0	29.4
	NS 17100	RGB/RGG-6+6	7.4	11.8	16.2	20.6	25.0	29.4
		RGB/RGG-6+8	8.1	13.0	17.9	22.7	27.6	32.4
		RGB/RGG-8+8	8.9	14.2	19.5	24.9	30.2	35.5
STAINLESS STEEL	RGB/RGG-2	3.2	5.1	7.1	9.0	11.0	12.9	
	RGB/RGG-4	3.9	6.1	8.3	10.5	12.7	14.9	
	RGB/RGG-6	4.5	6.9	9.4	11.8	14.2	16.7	
	RGB/RGG-8	5.2	7.9	10.7	13.5	16.2	19.0	
	SS2348	RGB/RGG-2+2	5.1	8.1	11.2	14.2	17.2	20.3
	DIN 1,4404	RGB/RGG-2+4	5.8	9.2	12.7	16.1	19.6	23.0
		RGB/RGG-2+6	6.3	10.1	13.9	17.8	21.6	25.4
	ASTM/316 L	RGB/RGG-2+8	7.1	11.3	15.5	19.7	23.9	28.1
	Aisi 316 L	RGB/RGG-4+4	6.3	10.1	13.9	17.8	21.6	25.4
	BS 970 gr. 316 S11	RGB/RGG-4+6	7.1	11.3	15.5	19.7	23.9	28.1
		RGB/RGG-4+8	7.6	12.1	16.6	21.1	25.6	30.1
	NS 14450	RGB/RGG-6+6	7.6	12.1	16.6	21.1	25.6	30.1
		RGB/RGG-6+8	8.4	13.3	18.3	23.3	28.3	33.3
		RGB/RGG-8+8	9.1	14.6	20.0	25.5	31.0	36.4
ALUMINIUM	RGB/RGG-2	1.1	1.8	2.5	3.1	3.8	4.4	
	RGB/RGG-4	1.4	2.1	2.9	3.6	4.4	5.1	
	RGB/RGG-6	1.6	2.4	3.2	4.1	4.9	5.7	
	RGB/RGG-8	1.8	2.7	3.7	4.6	5.6	6.5	
	SS4212	RGB/RGG-2+2	1.8	2.8	3.9	4.9	5.9	7.0
	DIN ALMG SI 1	RGB/RGG-2+4	2.0	3.2	4.4	5.5	6.7	7.9
		RGB/RGG-2+6	2.2	3.5	4.8	6.1	7.4	8.7
	A 6082	RGB/RGG-2+8	2.4	3.9	5.3	6.7	8.2	9.6
	BS H30/6082 TF	RGB/RGG-4+4	2.2	3.5	4.8	6.1	7.4	8.7
		RGB/RGG-4+6	2.4	3.9	5.3	6.7	8.2	9.6
	NS 17305	RGB/RGG-4+8	2.6	4.2	5.7	7.2	8.8	10.3
		RGB/RGG-6+6	2.6	4.2	5.7	7.2	8.8	10.3
		RGB/RGG-6+8	2.9	4.6	6.3	8.0	9.7	11.4
		RGB/RGG-8+8	3.2	5.0	6.9	8.7	10.6	12.5

Weight chart in kilograms

Wall thickness (mm)		
Counter frame/type	Min	Max
1	80	110
2	110	150
3	150	190

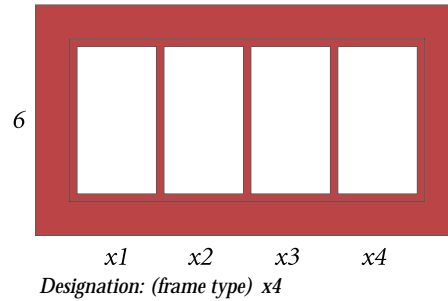
Standard frames in four different sizes: 2, 4, 6 and 8 which mark different heights. All have the same width. See below.



Multiple Frames

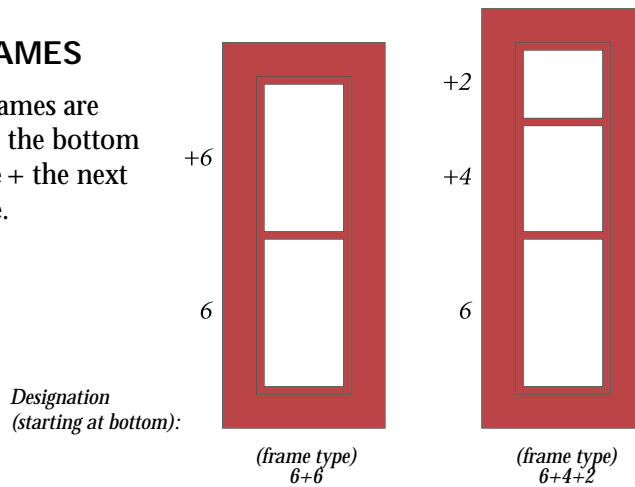
HORIZONTAL MULTIPLE FRAMES

Horizontal multiple frames are described by listing the frame type and size x the desired number of horizontal openings.



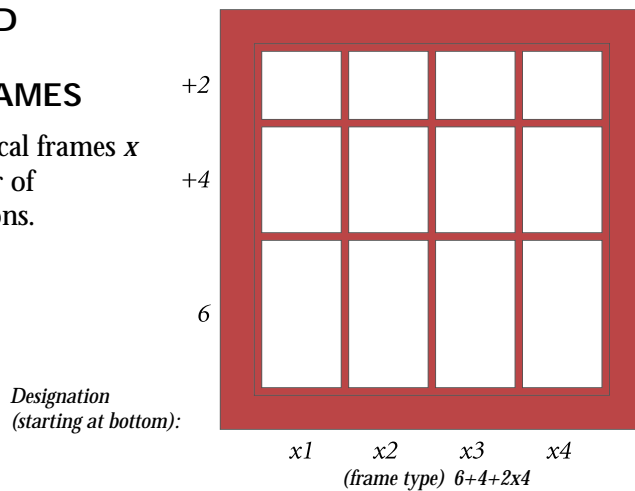
VERTICAL MULTIPLE FRAMES

Vertical multiple frames are described by listing the bottom frame type and size $+$ the next frame type and size.



VERTICAL AND HORIZONTAL MULTIPLE FRAMES

List the entire vertical frames x the desired number of horizontal repetitions.



NOTE: All multiple frame designations must be preceded by the frame type.

Components

STAY PLATE

A Stay Plate is inserted between every row of blocks to ease installation and increase the mechanical stability of the transit.

Material:
Galvanised or stainless steel.
Aluminium or brass.



COMPRESSION PLATE

The compression plate is assembled above the last row of insert blocks. The compression bolt on the plate is tightened to seal the transit and provide space for the STG endpacking.

Material:
SMC composite.



STG ENDPACKING

This is assembled between the compression plate and the upper edge of the frame to complete the transit and seal it tight.

Material:
Lycron with galvanised or stainless fittings.



PTG PRESSWEDGE

This can be used instead of an STG endpacking and compression plate. It is positioned anywhere in the frame.

Material:
Lycron with galvanised or stainless steel fittings.



ENDPACKING PULLER FOR STG.

Used for removal of STG.1 Endpacking.



Weights in kilograms			
STG	PTG	COMPRESSION PLATE	STAY PLATE
0.6	0.82	0.24	0.13

RGP – RGPO

RGP is a Lycron frame for assembly in round holes or tubes. It is available in seven sizes (see table) and is packed with standard MCT insert blocks. The metal parts are galvanised or stainless steel.

RGPO is a Lycron frame with open sides intended for installation in holes where cables have already been drawn. This is also available in seven sizes.



The RGP plug is a seal for installing in holes or pipes.



RGPO is an openable RGP frame.

Dimensions in mm		
FRAME SIZE	PACKING AREA	DEPTH AND DIAMETER
RGP 50/L60		
RGP 50/L30		
RGP 70		
RGP 100		
RGP 150		
RGP 200		
RGP 300		

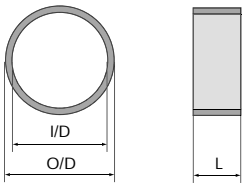
Weight in kilograms						
RGP 50/L30	RGP 50/L60	RGP 70	RGP 100	RGP 150	RGP 200	RGP 300
0.11	0.25	0.4	0.7	1.8	3.0	7.4

Frames/Sleeves

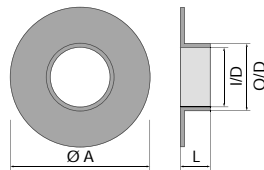
Round frames, Sleeves for welding or casting into walls.
For more information about RGP and Sleeves please request the special brochure.



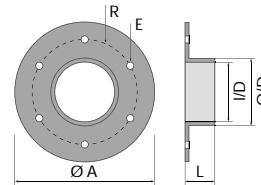
TYPE S WITHOUT FLANGE



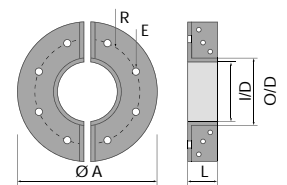
TYPE SFR WITH ROUND FLANGE



TYPE SFRB WITH ROUND FLANGE AND PRE DRILLED HOLES



TYPE SFRBO (OPENABLE) WITH ROUND FLANGE AND PRE DRILLED HOLES



Type S without flange				
Type/size	O/D mm	I/D mm	L mm	Weight kg
S 50/L30	63	51 ¹⁾	35	0.3
S 50/L60	63	51 ¹⁾	70	0.6
S 70	83	71 ¹⁾	70	0.8
S 100	114	102 ¹⁾	70	1.1
S 150	164	152 ¹⁾	82	1.9
S 200	214	202 ¹⁾	82	2.5
S 300	316	302 ²⁾	85	4.5

¹⁾0-0.3 mm
²⁾0-0.5 mm

Type SFR with round flange					
Type/size	O/D mm	I/D mm	L mm	A mm	Weight kg
SFR 50/L60	63	51 ¹⁾	73	145	1.2
SFR 70	83	71 ¹⁾	74	185	2.1
SFR 100	114	102 ¹⁾	74	215	2.7
SFR 150	164	152 ¹⁾	86	264	4.0
SFR 200	214	202 ¹⁾	86	315	5.1
SFR 300	316	302 ²⁾	89	398	7.3

¹⁾0-0.3 mm
²⁾0-0.5 mm

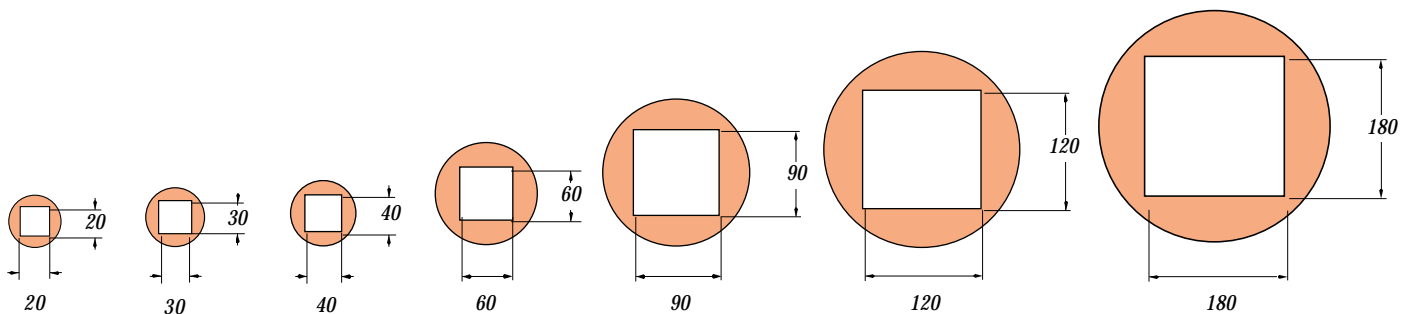
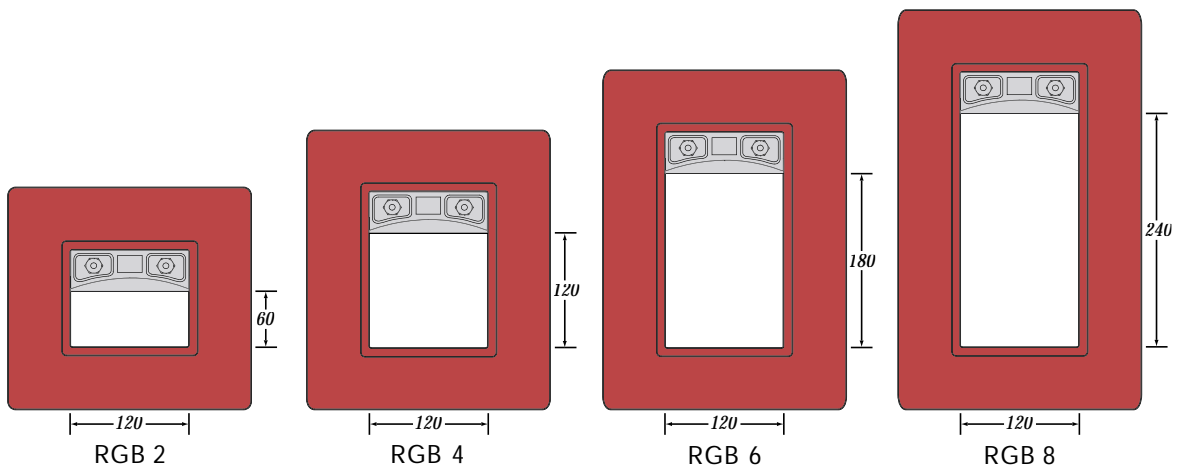
Type SFRB and SFRBO (open) with round flange								
Type/size	O/D mm	I/D mm	L mm	A mm	R mm	E mm	Qty of holes	Weight kg
SFRB (O) 50/L60	63	51 ¹⁾	73	145	52.5	9	4	1.2
SFRB (O) 70	83	71 ¹⁾	74	185	68.0	9	4	2.1
SFRB (O) 100	114	102 ¹⁾	74	215	82.0	9	4	2.7
SFRB (O) 150	164	152 ¹⁾	86	264	108.0	11	6	4.0
SFRB (O) 200	214	202 ¹⁾	86	315	132.0	11	6	5.1
SFRB (O) 300	316	302 ²⁾	89	398	179.0	11	12	7.3

¹⁾0-0.3 mm
²⁾0-0.5 mm

Planning the packing space

The space in the frame that can be used for the installation of cables/pipes is called the packing space. In RGB/RGG frames the upper 40 mm of space is always taken up by the Endpacking. In RGP frames no compression plate or final seal is required to hold the insert blocks in place.

The packing space then consists of the whole of the frame's inner space. Tables that will help you determine which blocks you will need can be found, for standard blocks, on page 24 and for AddBlocks on page 26.



RGP 50/L60

RGP 50/L30

RGP 70

RGP 100

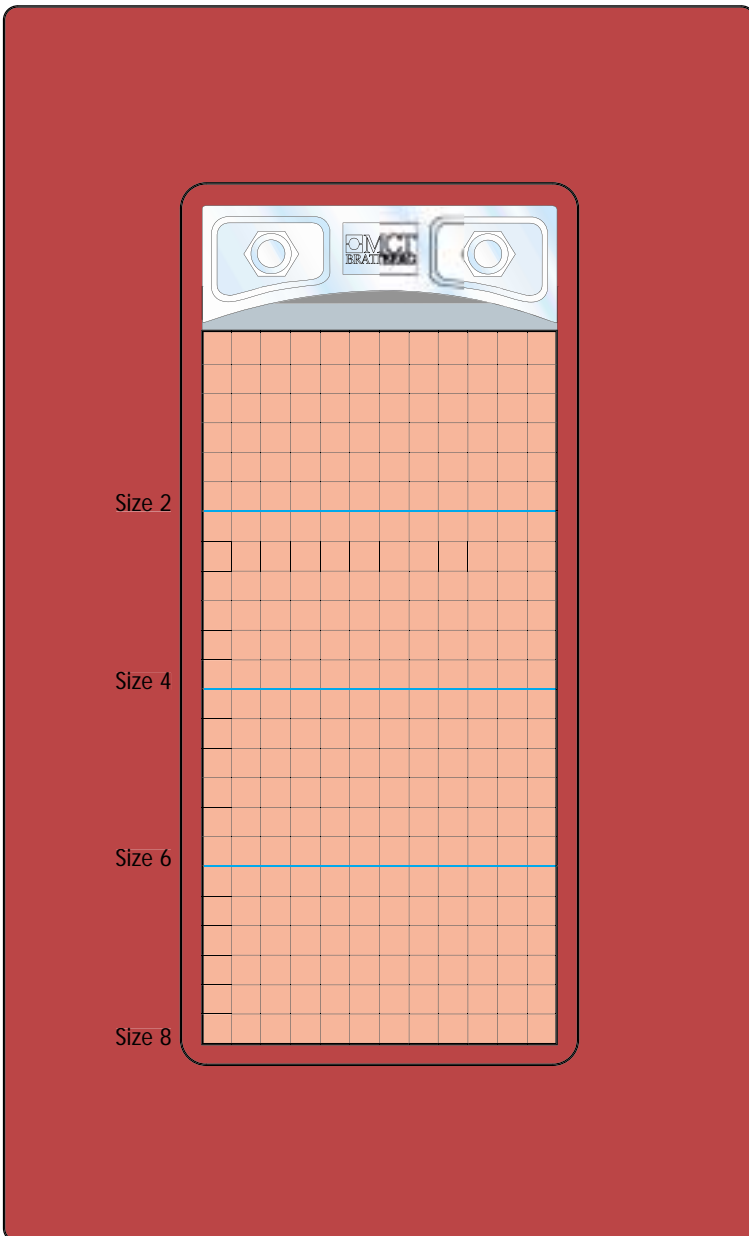
RGP 150

RGP 200

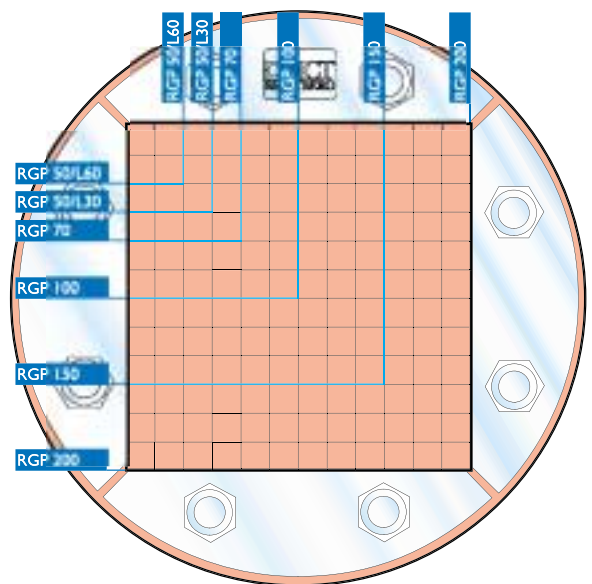
RGP 300

RGB maximum number of cables and pipes							
Frame sizes	Block sizes						
	15	20	30	40	60	90	120
Maximum number of cables and pipes							
RGB 2	32	18	8	3	2	-	-
RGB 4	64	36	16	9	4	1	1
RGB 6	96	54	24	12	6	2	1
RGB 8	128	72	32	18	8	2	2

RGP maximum number of cables and pipes							
Frame sizes	Block sizes						
	15	20	30	40	60	90	120
Maximum number of cables and pipes							
RGP 50/L30	4	1	1	-	-	-	-
RGP 50/L60	1	1	-	-	-	-	-
RGP 70	4	4	1	1	-	-	-
RGP 100	16	9	4	1	1	-	-
RGP 150	36	16	9	4	1	1	-
RGP 200	64	36	16	9	4	1	1



A couple of examples of pack plans (RG Plan) are shown here. RGB to the left and RGP below. The largest cables are placed at the bottom.



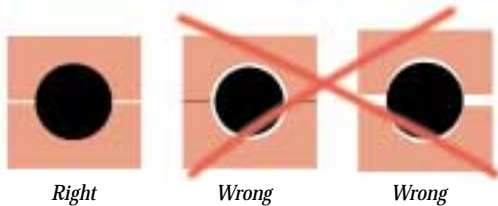
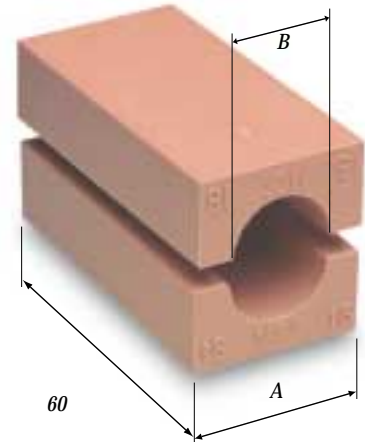
Combination frame width compared with width of cable sizes						
Cabletype	Frame-size	Cable size width in mm				
		150	200	300	400	600
Signal	6	6 x 2	6 x 3	6 x 4	6 x 5	
Power	4	4 x 2	4 x 3	4 x 4	4 x 5	
Comb.	6	6 x 2	6 x 3	6 x 4	6 x 5	

Standard Insert Blocks

Our range of blocks accommodates cables between 4 and 100 mm in diameter. It is important that the insert block is the right size, with respect to the cable, to ensure a proper seal.

Measure the cable diameters carefully and choose insert blocks accordingly. With the sizing chart on next page you can choose the correct size of insert blocks.

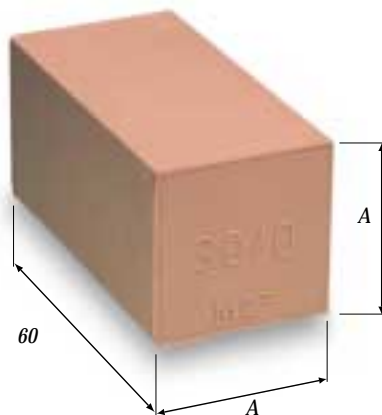
Blocks are referred to by their width (A) and hole diameter (B). Thus a block with a width of 15 mm and a hole diameter of 4 mm is referred to as 15/4. This designation is moulded into the block.



Spare blocks

The space that is not used in the frame is filled with solid spare blocks, which can be replaced at a later date with transits for new cables.

Spare blocks are denoted A/0. A = width/height, 0 = solid. A spare block with width and height 15 mm is denoted as 15/0. The length measurement of all spare blocks is 60 mm.



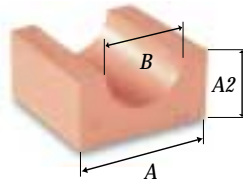
SIZE	
Width (A) = Height (A)	
5 x 5 Supplied only in rows of 24	24 x 5/0
10 x 10 Supplied only in rows of 12	12 x 10/0
15 x 15	15/0
20 x 20	20/0
30 x 30	30/0
40 x 40	40/0
60 x 60	60/0
90 x 90	90/0
120 x 120	120/0
180 x 180	180/0

Size in mm

CABLE DIAM.	A				B
	15	20	30	40	
3.5-4.5	15/4	20/4			4
4.5-5.5	15/5	20/5			5
5.5-6.5	15/6	20/6			6
6.5-7.5	15/7	20/7			7
7.5-8.5	15/8	20/8			8
8.5-9.5	15/9	20/9			9
9.5-10.5		20/10			10
10.5-11.5		20/11			11
11.5-12.5		20/12	30/12		12
12.5-13.5		20/13	30/13		13
13.5-14.5		20/14	30/14		14
14.5-15.5		20/15	30/15		15
15.5-16.5		20/16	30/16		16
16.5-17.5			30/17		17
17.5-18.5			30/18		18
18.5-19.5			30/19		19
19.5-20.5			30/20		20
20.5-21.5			30/21		21
21.5-22.5			30/22	40/22	22
22.5-23.5			30/23	40/22	23
23.5-24.5			30/24	40/24	24

CABLE DIAM.	A			B
	40	60	90	
25.5-27.5	40/26			26
27.5-29.5	40/28			28
29.5-31.5	40/30			30
31.5-33.5	40/32	60/32		32
33.5-35.5	40/34	60/34		34
35.5-37.5		60/36		36
37.5-39.5		60/38		38
39.5-41.5		60/40		40
41.5-43.5		60/42		42
43.5-45.5		60/44		44
45.5-47.5		60/46		46
47.5-49.5		60/48		48
49.5-51.5		60/50	90/50	50
51.5-53.5		60/52	90/52	52
53.5-55.5		60/54	90/54	54

CABLE DIAM.	A		B
	90	120	
55.5-57.5	90/56		56
57.5-59.5	90/58		58
59.5-61.5	90/60		60
61.5-63.5	90/62		62
63.5-65.5	90/64		64
65.5-67.5	90/66		66
67.5-69.5	90/68		68
69.5-71.5	90/70		70
71.5-73.5		120/72	72
73.5-75.5		120/74	74
75.5-77.5		120/76	76
77.5-79.5		120/78	78
79.5-81.5		120/80	80
81.5-83.5		120/82	82
83.5-85.5		120/84	84
85.5-87.5		120/86	86
87.5-89.5		120/88	88
89.5-91.5		120/90	90
91.5-93.5		120/92	92
93.5-95.5		120/94	94
95.5-97.5		120/96	96
97.5-99.5		120/98	98
99.5-101.5		120/100	100



Blocks are referred to by their width (A) and hole diameter (B). Thus a module with a width of 15 mm and a hole diameter of 4 mm is referred to as 15/4.

Weight in grams per half

BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT
24 x 5/0	58	20/12	13	30/24	21	60/50	77	120/78	462
12 x 10/0	113	20/13	12	40/22	57	60/52	59	120/80	448
20/0	38	20/14	11	40/24	54	60/54	61	120/82	437
30/0	84	20/15	10	40/26	50	90/50	287	120/84	425
40/0	150	20/16	9	40/28	47	90/52	279	120/86	415
60/0	338	30/12	36	40/30	42	90/54	273	120/88	403
90/0	766	30/13	36	40/32	37	90/56	262	120/90	385
120/0	1374	30/14	35	40/34	32	90/58	255	120/92	368
180/0	2990	30/15	34	60/32	131	90/60	243	120/94	360
20/4	18	30/16	33	60/34	127	90/62	239	120/96	351
20/5	18	30/17	31	60/36	122	90/64	229	120/98	332
20/6	17	30/18	30	60/38	116	90/66	220	120/100	313
20/7	17	30/19	28	60/40	110	90/68	211	120/108	243
20/8	16	30/20	27	60/42	104	90/70	204	180/114	1003
20/9	15	30/21	25	60/44	98	120/72	494	180/140	785
20/10	14	30/22	24	60/46	91	120/74	485	180/168	475
20/11	13	30/23	22	60/48	84	120/76	472		

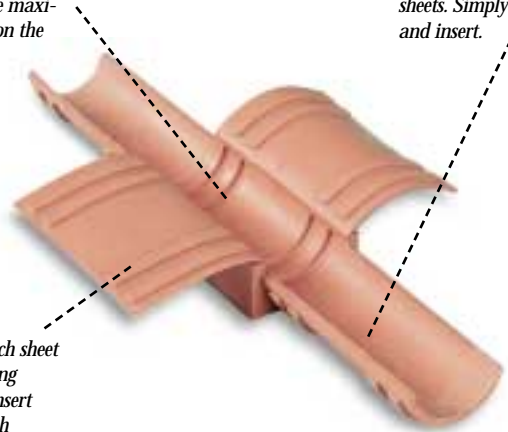
AddBlock

There are eleven different sizes of AddBlock. By tearing off the wing-like inserts, which are of varying thickness, and inserting them in the main block it is possible to accommodate 66 different cable and pipe dimensions, from 3.5 mm to 69.5 mm. The inserts are fitted with a locating ridge that fits exactly into furrows in the main block. These stop the block from "telescoping".

A seal using AddBlocks is as secure and tight as one using standard blocks. Both types can be combined in a transit, which makes the MCT Brattberg seal system very flexible.

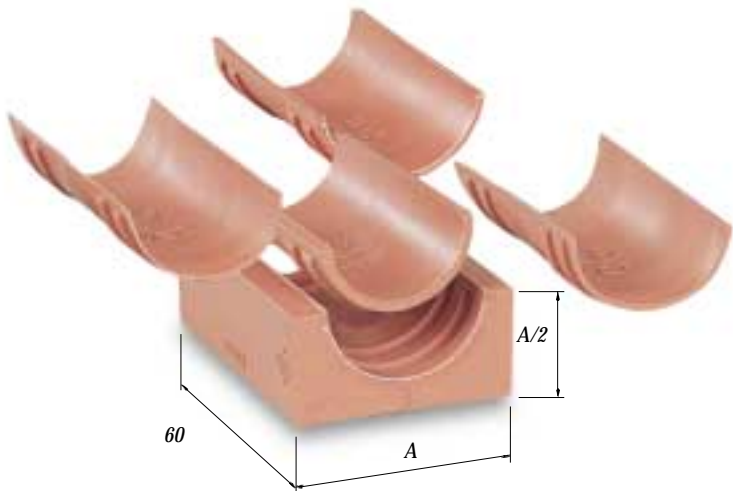
The AddBlocks basic dimension is given at bottom slot center, and that's the maximum cable dimension the block is designed for.

Dimensions are also clearly marked on the four insert sheets. Simply select, tear off and insert.



On the bottom of each sheet you'll find four locking devices to keep the insert in place, making each AddBlock thoroughly secure.

Eleven blocks and 66 dimensions



AddBlocks are all the same length as standard blocks, 60 mm. The width of standard blocks (A measurement, see table) are 20, 30, 40, 60 or 90 mm.

WEIGHT PER HALF (G)	ADDBLOCK DIMENSION	CABLE OR PIPE DIMENSION
23	20/4 - 8	3.5 - 8.5
23	20/9 - 13	8.5 - 13.5
45	30/14 - 18	13.5 - 18.5
43	30/19 - 23	18.5 - 23.5
71	40/24 - 28	23.5 - 28.5
62	40/29 - 33	28.5 - 33.5
150	60/34 - 38	33.5 - 38.5
136	60/39 - 43	38.5 - 43.5
128	60/44 - 48	43.5 - 49.5
348	90/50 - 58	49.5 - 59.5
318	90/60 - 68	59.5 - 69.5

Plugs and sleeves

P20/8

Plug, diameter 8 mm. Fits in AddBlock 20/4-8

P20/8

Plug, diameter 8 mm. With wrap-around casing
W-20-8/13 it fits in AddBlock 20/9-13

P30/18

Plug, diameter 18 mm. Fits in AddBlock 30/14-18

P30/18

Plug, diameter 18 mm. With wrap-around casing
W-30-18/23 it fits in AddBlock 30/19-23

P40/28

Plug, diameter 28 mm. Fits in AddBlock 40/24-28

P40/28

Plug, diameter 28 mm. With wrap-around casing
W-40-28/33 it fits in AddBlock 40/29-33

P60/38

Plug, diameter 38 mm. Fits in AddBlock 60/34-38

P60/38

Plug, diameter 38 mm. With wrap-around casing
W-60-38/43 it fits in AddBlock 60/39-43

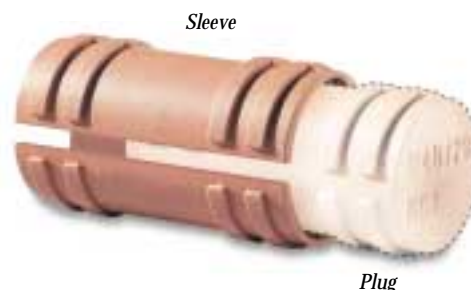
With additional casing

W-60-43/48 it fits AddBlock 60/44-48

Plugs are used mainly as a preparation for future cable drawing where they, together with AddBlocks form a spacer. When the cables are eventually drawn the plugs are removed and AddBlocks are reused.

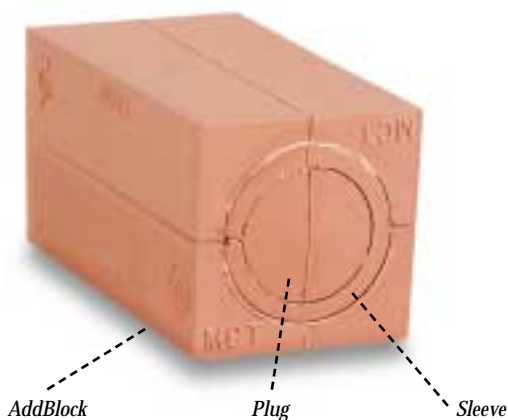


Plug



Sleeve

Plug



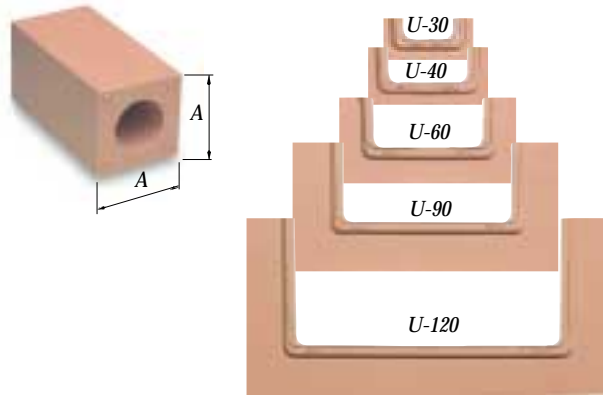
In the table you see which plug, or combination of plug and wrap-around casing, to use when turning an AddBlock into a spare block.

ADDBLOCK	PLUG	SLEEVE
20/4 - 8	P 20/8	
20/9 - 13	P 20/8 +	W 20/8-13
30/14 - 18	P 30/18	
30/19 - 23	P 30/18 +	W 30/18-23
40/24 - 28	P 40-28	
40/29 - 33	P 40-28 +	W 40/28-33
60/34 - 38	P 60/38	
60/39 - 43	P 60/38 +	W 60/38-43
60/44 - 48	P 60/38 +	W 60/38-43 and W 60/43-48

U Blocks

Using U-blocks the outer measurement (A-measurement) can be changed on both Standard blocks and AddBlocks. The edges lock the blocks into each other; considerably simplifying assembly.

U-blocks are available in five sizes: a standard 20/4 block can, for example, be transformed into the following sizes: 30/4, 40/4, 60/4, 90/4 and 120/4.

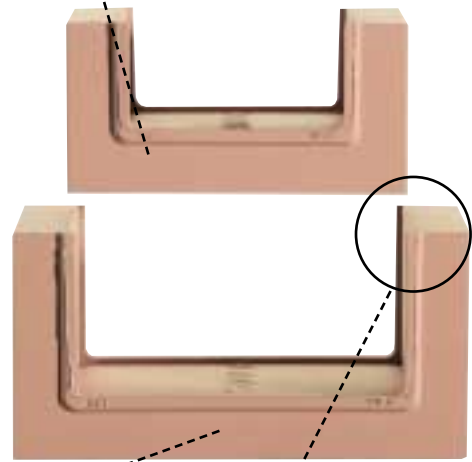


These spacer blocks can be built with U blocks

Standard Spacer block	Possible new dimensions	Use the following blocks
20/0	30/0	U-30 and 20/0
	40/0	U-40, U-30 and 20/0
	60/0	U-60, U-40, U-30 and 20/0
	90/0	U-90, U-60, U-40, U-30 and 20/0
	120/0	U-120, U-90, U-60, U-40, U-30 and 20/0
30/0	40/0	U-40 and 30/0
	60/0	U-60, U-40 and 30/0
	90/0	U-90, U-60, U-40 and 30/0
	120/0	U-120, U-90, U-60, U-40 and 30/0
40/0	60/0	U-60 and 40/0
	90/0	U-90, U-60 and 40/0
	120/0	U-120, U-90, U-60 and 40/0
60/0	90/0	U-90 and 60/0
	120/0	U-120, U-90 and 60/0
90/0	120/0	U-120 and 90/0

U-Blocks are pre-lubricated, saving valuable time.

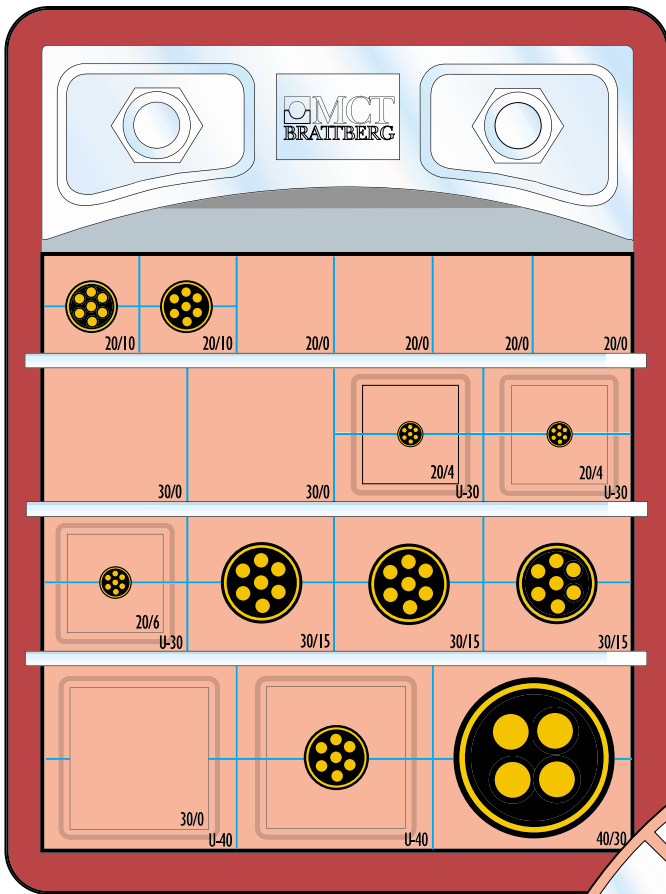
U-Blocks function according to the "Russian doll" principle.



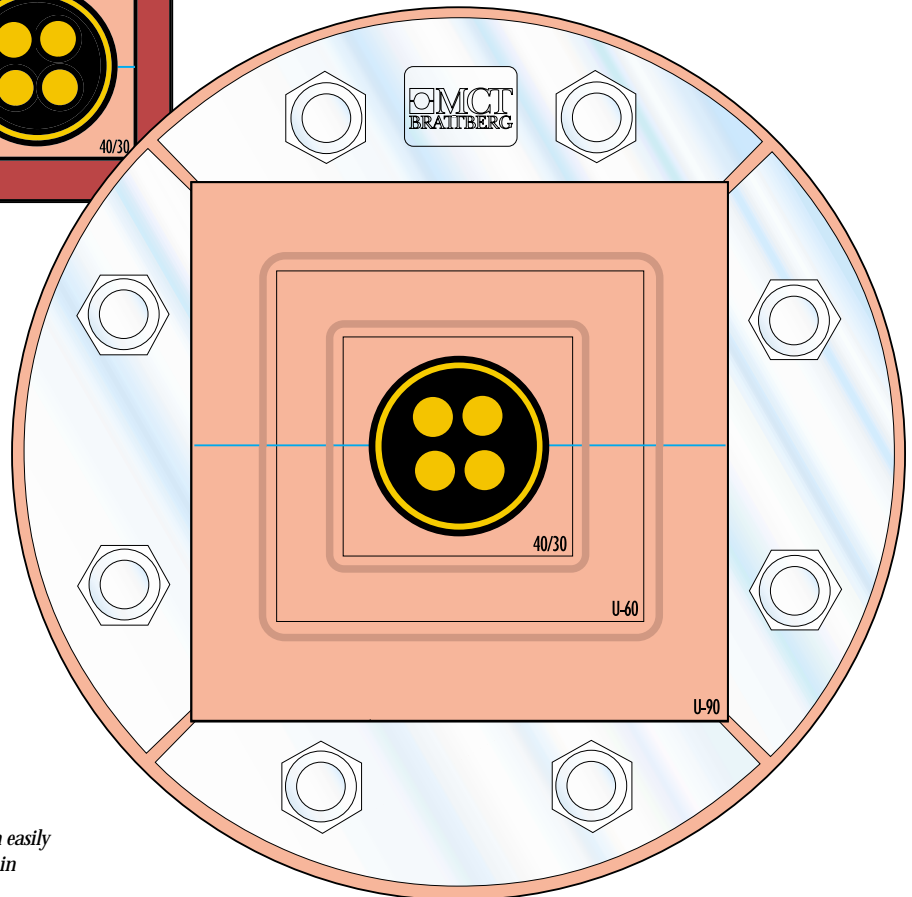
U-Blocks are made of Lycron, the same halogen free material used in all other MCT Brattberg blocks.

The edges lock the blocks into each other, considerably simplifying assembly.

This is how U blocks are used



Regardless of cable diameter, you can retain the outer measurement of the block in any row.



With U-Blocks, you can easily center the cable or pipe in your RGP installation.



Assembling

A transit must be properly assembled if it is to be approved according to classification norms. The installer and person responsible must understand how the parts are assembled and how important it is that assembly instructions are followed correctly.



In order to simplify assembly and installation we have made the sequence simple, logical and in stages. No special tools are required and all sealing blocks are pre-lubricated.

Built-in

RGB/RGG/RGP

RGB frames can be cast directly into concrete walls or floors (figures 1 and 2). Alternatively the frames can be cast into a loose section that is built in later. When the demands for fire safety are extremely high, frames can be mounted back-to-back (fig. 3). Such an installation can also be pressure tested.

For there to be sufficient space for the stay plate and compression plate there must be 5 mm of clearance between the frame's inside and the cast hole (fig. 7). MCT Brattberg's expanded polystyrene casting form simplifies fixing when casting and provides the necessary clearance (fig. 6).

RGB and RGBO frames can also be bolted in place with the aid of, for example, expansion bolts. These frames can be ordered with pre-drilled holes or be drilled before installation. Lycron sealing strip is used between the frame and the wall to provide a gas tight seal. There are two ways of bolting the frames in position, see figs. 4 and 5. Where practically possible, fig. 4 should always be employed.



MCT Brattberg's expanded polystyrene casting form.

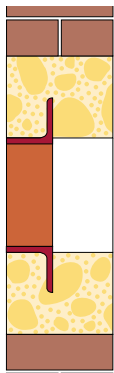


Fig. 1

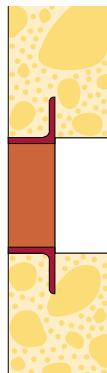


Fig. 2

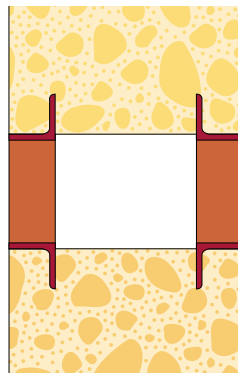


Fig. 3

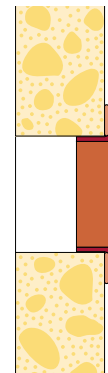


Fig. 4

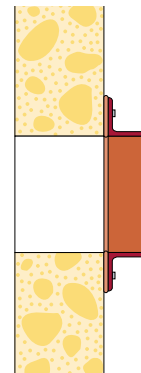


Fig. 5

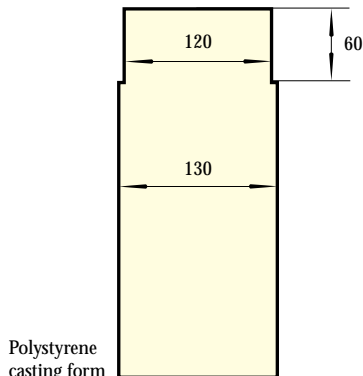


Fig. 6

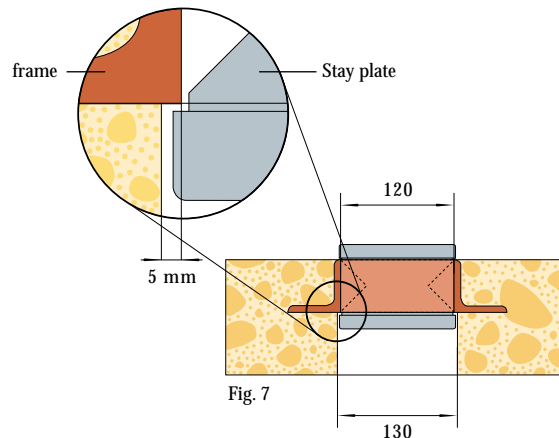


Fig. 7

RGG frames and the flanges of the counter frame are screwed into the wall (figs. 8 and 9). A Lycron sealing strip should be used between the wall and the flange to provide a gas tight seal. The galvanised counter frame is available with three different standard depths, which are suitable for the most common wall thicknesses (see page 17).

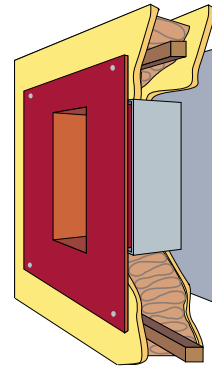


Fig. 8

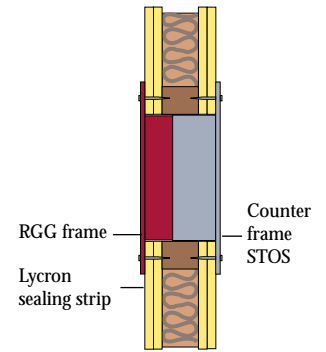


Fig. 9

RGP frames are installed on one side of the wall when normal demands are made for fire safety (120 min), see fig. 10. When the safety demands are particularly high two RGP frames are installed back-to-back (fig. 11).

RGP can be installed in drilled or cast holes, or in a pipe that is cast in. Casting is made easier if MCT Brattberg casting forms are used, see picture on the right.



MCT Brattberg's casting form.

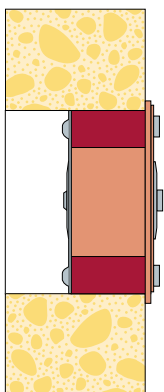


Fig. 10

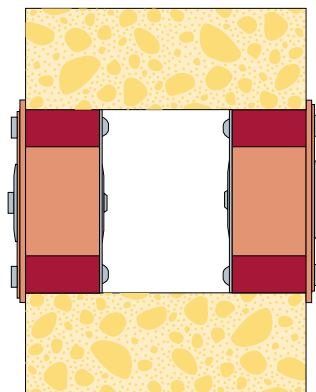


Fig. 11

Assembly and installation instructions



1 Measure the opening to ensure that its size conforms with tolerance standards $120,5 \text{ mm} \pm 0,5$.



2 Make sure the frame is clean and lubricate the inside of the frame. Then pull cables through, placing the largest at the bottom.



3 Begin packing. A stayplate is inserted between each layer of insert blocks.

PRESSURE APPLICATIONS

Make sure the frame is clean and lubricate the inside of the frame thoroughly. Lubricate all Lycron parts carefully with the MCT Brattberg lubricant.

Place the compression plate in the centre so that the rubber can come up between the compression plate and the frame on both sides of the plate.

The seal may not be pressurized within 48 hours of installation. This allows for the settlement of the system (based on a 20°C ambient temperature). NOTE. The lower the temperature, the longer the needed settlement time.

Certified pressure 2 bar (29.4 psi), test pressure 5 bar.

NOTE. For pressurized applications, all components must be replaced with new material after removal and refitting.

STG END PACKING



4 Insert the compression plate in the frame before the last row of blocks.



5-6 Insert the last row of blocks. Tighten the bolt until there is 32 mm between the top of the plate and the inside of the frame.



7 Insert endpacking STG with the tongue around the compression bolt. Tighten the nuts on the endpacking to compress and complete the seal. Approximately 12 mm of thread should protrude on each bolt.

PTG PRESSURE WEDGE



4 Insert the last two stayplates in the frame before the last row of blocks.



5 Fit first the PTG presswedge at top of the frame. Insert then the last row of blocks.

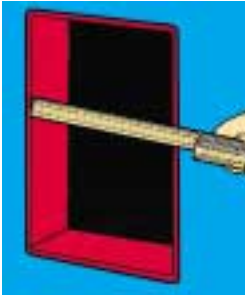


6 Tighten the nuts until about 12 mm of thread protrudes on each bolt.

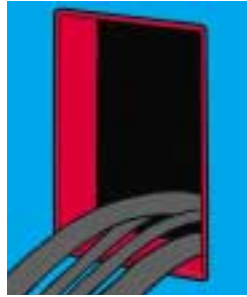


7 The PTG Presswedge can also be placed like this.

AddBlock



Measure the opening to ensure that its size conforms with tolerance standards $120,5 \text{ mm} \pm 0,5$.



Select a suitable block for the largest cable in the row.



Tear off attached sheet to fit the dimension selected.

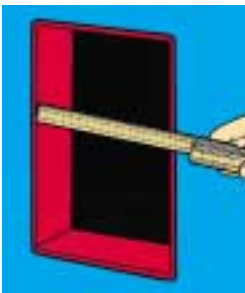


Place sheet into centre slot and affix it with the unique locking device.

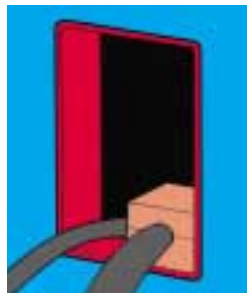


Tear off superfluous sheets.

U-Block



Measure the opening to ensure that its size conforms with tolerance standards $120,5 \text{ mm} \pm 0,5$.



Select a suitable block for the largest cable in the row.



Select a suitable standard-Block or AddBlock for the small cable. Then create a base using U-Blocks. The external measurements should be the same as the previous block.



Start packing the frame.



Insert stayplates between each row of insert blocks.

Plug

PREPARED
FOR FUTURE
INSTALLATIONS.



Choose an AddBlock suitable for the cable diameter.



The centre plug is a snug fit for any pre-selected AddBlock since its diameter is adjustable - all thanks to the wraparound casing.



Place the plug in the AddBlock and make sure the locking devices secure it in place.

Horizontal installation



1 Measure the opening to ensure that its size conforms with tolerance standards $120,5 \text{ mm} \pm 0,5$.

3 In horizontal installations, gravity makes it necessary to use the stayplates to hold the insert blocks in place. Therefore, place the stayplates in the frame first, dividing up the rows of cables according to your RG-plan. Also insert the compression plate at this stage.



4 Insert the outer blocks first (A, B, C etc.). Then insert the remaining blocks. Note. The block A should be turned 90°, as shown in the picture.

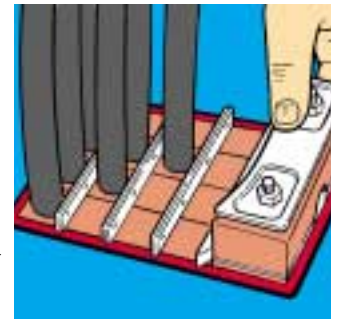


2 Make sure the frame is clean, then lubricate the inside and pull the cables through, placing the largest farthest from the compression plate.

5 Pack the last row, then tighten the bolt on the compression plate counter-clockwise until there is 32 mm of space between the top of the plate and the frame or enough to fit the endpacking tongue around the bolt.



6 Insert endpacking STG with the tongue around the compression bolt. Tighten the nuts on the endpacking to compress and complete the seal. Approximately 12 mm of thread should protrude on each bolt.



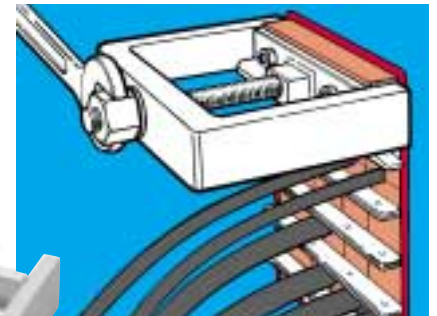
Disassembling

STG

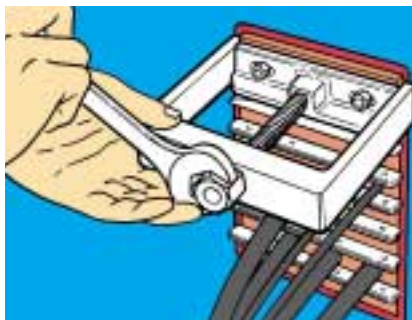
1 Remove the nuts and the hardware from the face of the endpacking.



2 Attach the endpacking puller to the bolts with the nuts.



3 Tighten the bolt on the puller and the endpacking slides out.



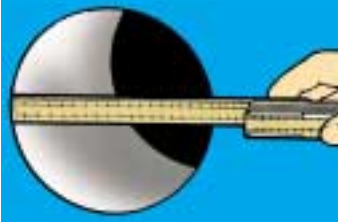
4 Remove the endpacking.



RGP installation

1

Measure the opening and check that the measurements agree with the tolerances. Hole tolerances are equivalent to the frame's outer diameter +2 mm, -0 mm.



2

Insert the RGP frame in the opening. No lubricant should be applied to the hole or to the outside of the frame.



4

Begin packing.



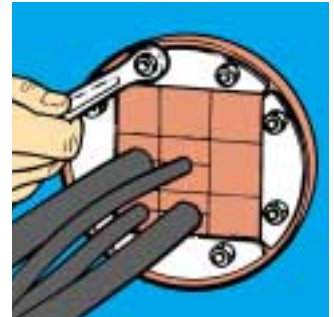
3

Position the frame correctly in the opening. Check that the frame is clean and feed the cables through, place the largest at the bottom.



5

Tighten the nuts until approx. 12 mm of free screw thread is visible.



PRESSURE TIGHT INSTALLATION

The contact surfaces between RGP plugs and the frame must be completely clean when RGP is installed. No lubrication shall be used on these surfaces.

All sealing blocks shall be lubricated well with MCT Brattberg's lubricant.

The transit should not be pressure tested for at least 48 hours after installation. This is to ensure that pressure is evened out inside the transit. At temperatures lower than +20°C this time should be extended.

Type approval pressure 2 bar (29.4 psi), test pressure 5 bar.

N.B. Once an installation has been subjected to pressure all components must be replaced with new materials.

RG Plan

It is simple to determine the correct frame size by using this RG plan.

The figures in margins of 2, 4, 6 and 8 represent the available packing space for RG frames 2, 4, 6 and 8.

It is not necessary to show stay plates, compression plates or endpackings since sufficient space for these is already reserved in the tables. The RG plan can be ordered at no extra cost.

In order to order the correct dimensions for insert blocks see pages 24-28.



STG

Compression plate

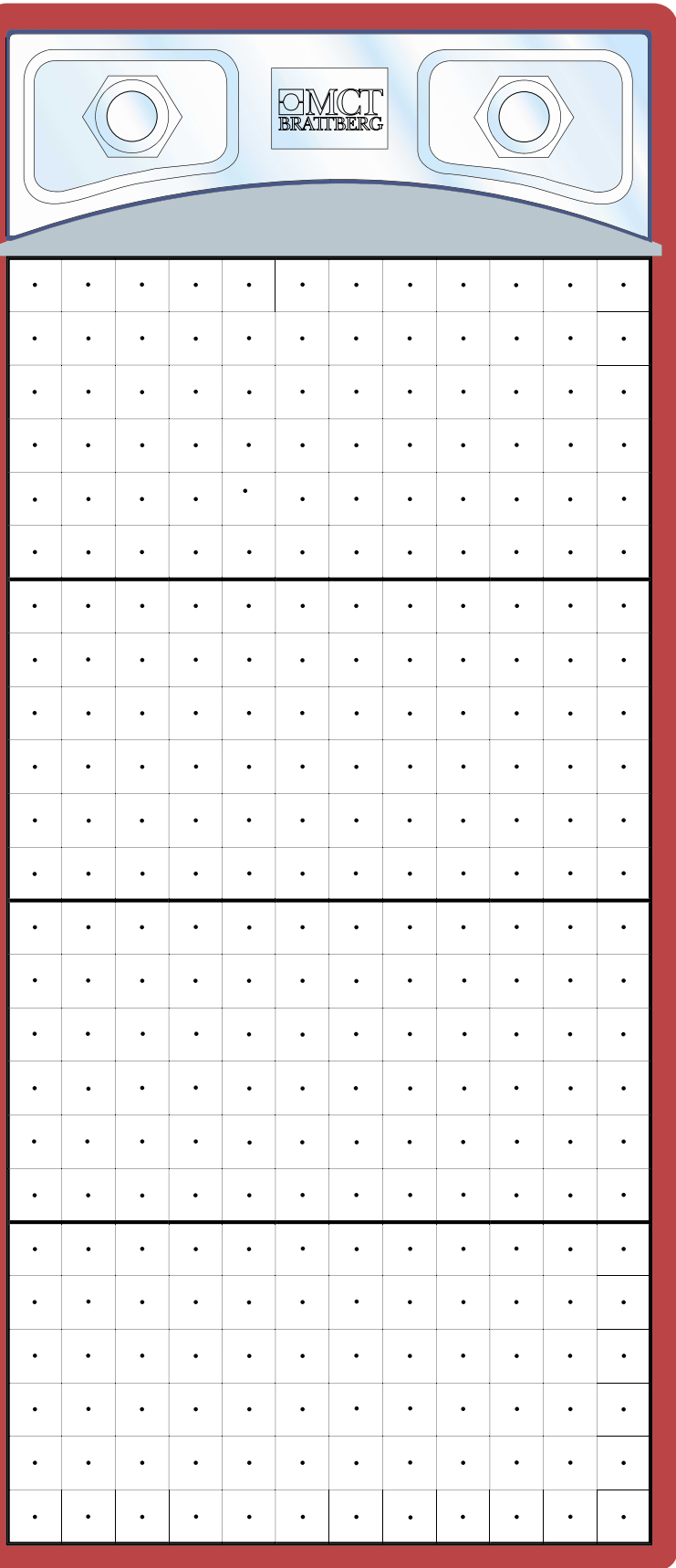
PTG

Stay plate

Lubricant

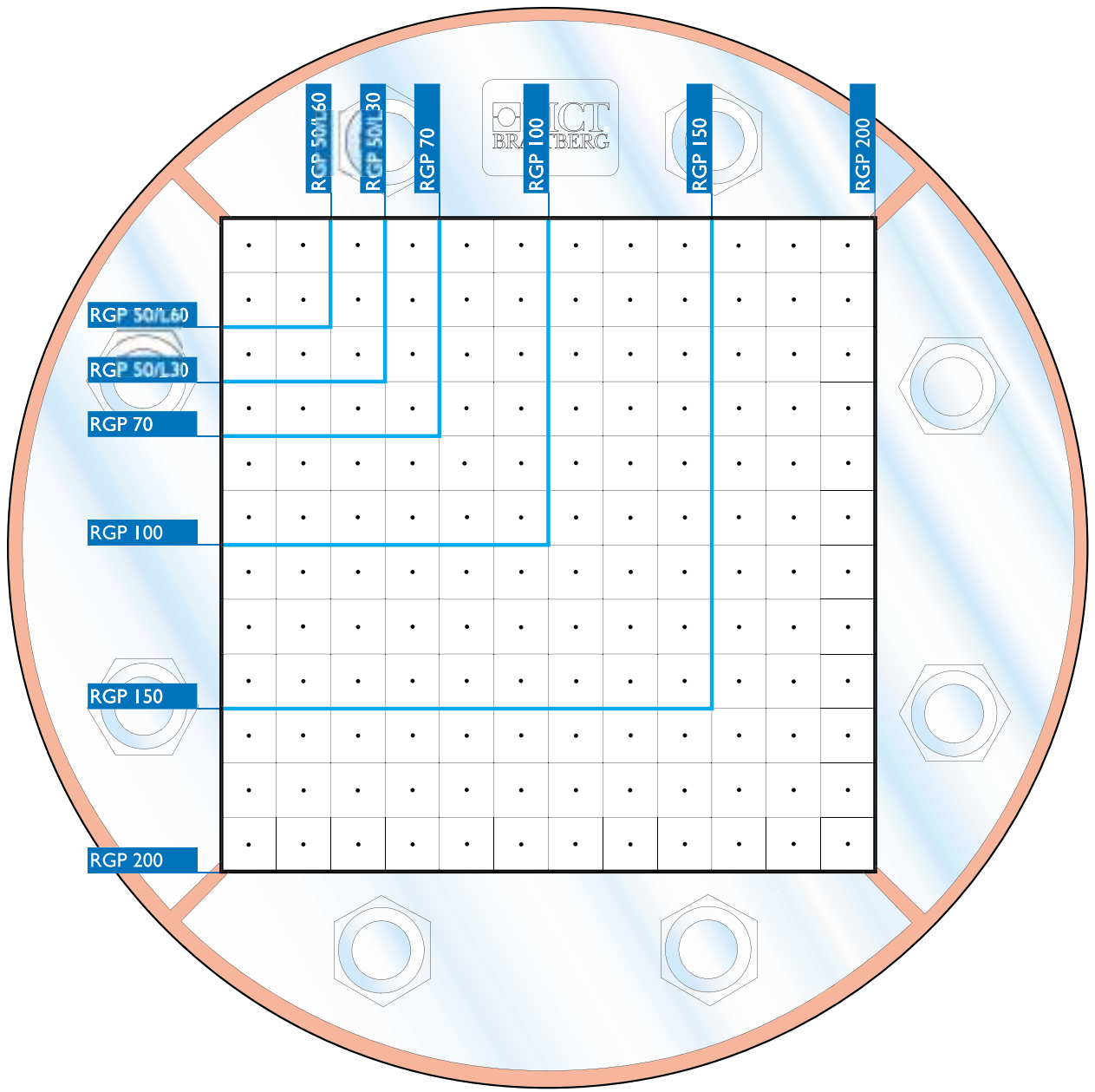
Packing blocks

End packing
alternative
pressure wedge



RGP

Insert blocks





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Please contact MCT Brattberg for details of your nearest distributor.