On Land

Putting safety first

MCT BRATTBERG

Safety above all

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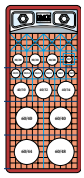
Productprogramme

RGB and RGG

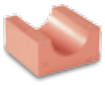
Multiple Frames

Components / Accessories

RGP



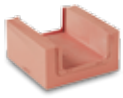
Planning



Standard Blocks

AddBlocks

Plugs

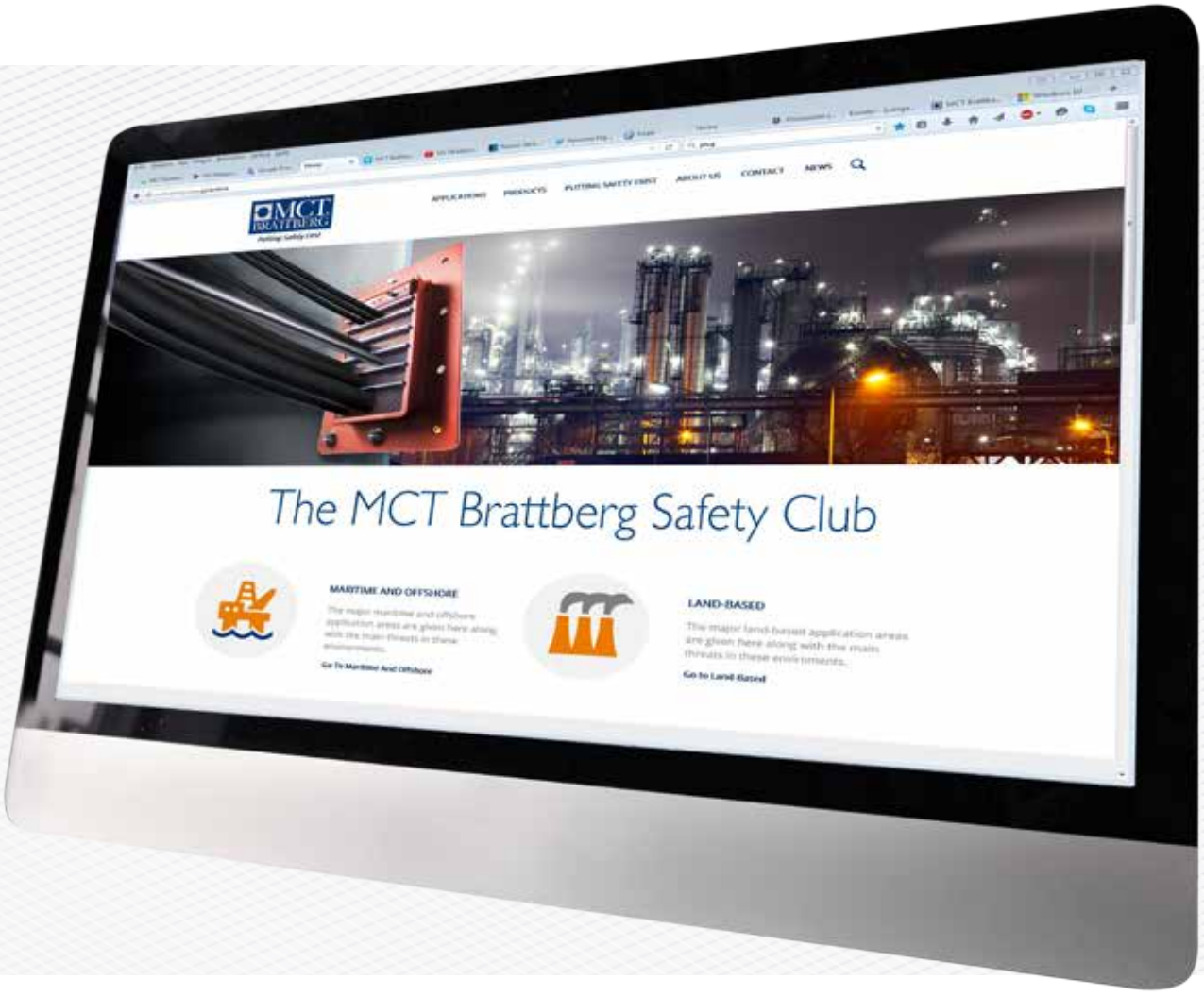


U-Blocks

Installation

The MCT Brattberg

Safety Club



This club is located on our website at: **www.mctbrattberg.com**. First click on the menu header *Putting safety first* and then *The MCT Safety Club*. Its content primarily present information that will help those who install our cable and transit to do it correctly in order to achieve a high standard of safety.

The first time you visit the club you will be required to register. After that you can log in when you want and download material,see installation films or access various online training modules.

Tested, approved and

certified

Since the early 1950s, when we first started specializing in fireproof and pressure-sealed transits, quality testing and classification has been essential.

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 FranceLab. National Dessais France - Loss Prevention Council United KingdomNational 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:

Bundesamt für Zivilschutz Germany
ETA Danmark A/S Denmark - Institut für Bautechnik Germany
SINTEF Norway - SP Sweden - Swedish Rescue Services Agency Sweden

Please consult MCT Brattberg for latest updated certificates and approvals.

In 1986 our sealing method and quality system was adapted to meet the rigid requirements of the offshore industry.

Today MCT Brattberg is assessed and certified by DNV, in accordance with the Quality and Environment Management system standard EN ISO 9001 and 14001, for the design, manufacture and supply of fire barrier and sealed transit systems associated with cable and pipe routes in building and marine environments.

As a direct result of this achievement, quality and environmental assessments are carried out by DNV twice annually.

MCT Brattberg also holds quality certificates and approvals from a wide variety of classification institutions and customers.

The original

cable transit

Based on the simple but clever idea of a frame with insert blocks and an end seal, the MCT Brattberg is the original transit system.

The MCT Brattberg was patented in the early 1950s. When oil rigs and nuclear power stations demanded cable and pipe installations with proven safety records, the MCT Brattberg system became a worldwide solution. And we´ve been improving it ever since. Comprehensive documentation shows that its resistance to fire, water, gas and pressure meets the latest safety requirements.

The industry standard

Our own experience has shown that for a standard frame used for maritime applications, an internal width of 120.5 mm ±0.5 mm, a depth of 60 mm and wall thickness of 10 mm are optimal window sizes for maintaining structural strength and for fitting insert blocks. The welded corners are rounded for added strength. Both single and multiple transits frames are available.

The dimensions of the various frames have become the industry standard simply because these types of frames were first to be introduced and have proved successful over time.

Built in flexibility

The comprehensive range of frames, inserts blocks and other components of our transits provides remarkable application flexibility.

In addition, our product range covers insulation collars and special solutions for EMC transits, SR cable and pipe seals, deck and bulkhead glands.

Special products for

special uses

MCT Brattberg manufactures a number of special products. High pressure secure cable transits, transits for wave guides and blocks with built-in protection against electromagnetic pulse due to lightning or nuclear blast.

High pressure seals

is an example of our special products. Several types of high pressure seals are available. Often these have been designed in collaboration with a customer. They are used, for example, in the supporting legs of oil rigs or in submarines. An example is the RGPH seal, which has been tested up to 100 bar.

The E-series frames

and components provide the same protection as the standard MCT Brattberg system but with added, built-in protection against electromagnetic pulses caused by lightning or nuclear blast.

They also give protection against interference, electronic sabotage and static electricity.

All dimensions are exactly the same as for the other MCT Brattberg components.

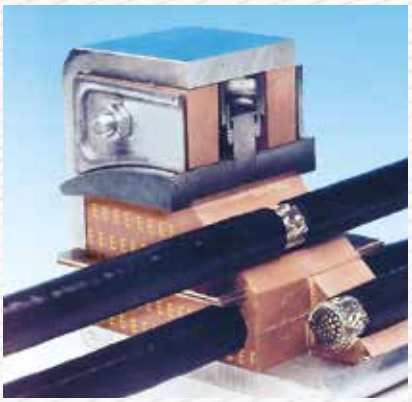
The E-series are aproved for Grounding and Bonding.

ATEX and IECEx certified transits

In explosion hazardous environments, it´s important to have Ex equipment. MCT Brattberg has a specific program for this areas with products that are tested and certified according to the ATEX directive 94/9/EC and the international IECEx. All dimensions are exactly the same as for the other MCT Brattberg components.

For special products please consult MCT Brattberg.

RGPH tested to 100 bar.



EMC products for Grounding and Bonding.

Products to protect against explosions.

RGB and RGG

RGBO AND RGGO WITH REMOVABLE END

RGB is MCT Brattbergs standard frame for casting into concrete. 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.

RGG frame type is bolted onto a concrete wall or floor or a plaster board wall. It is manufactured from a 60x60x6 mm angle bar.

RGGO frames are of the same type as the RGG frames but with one of the ends removable which enables installation where cables already have been pulled.

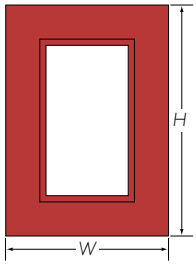
RGB

RGBO

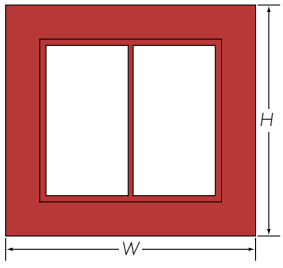
Size chart in mm

Size in mm									
		H	W (width) Combination frames						
	FRAME SIZE	(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	- „ -	- „ -	- „ -	- „ -	- „ -	- „ -	

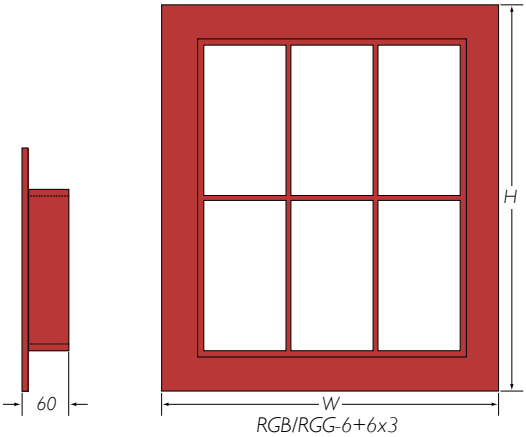
n = number of frames in width.
Tolerances single frame: 3.5 mm.
Thickness of material 6 mm except for internal horizontal and vertical walls in combination frames such as 10 mm.



RGB/RGG-6



RGB/RGG-6x2



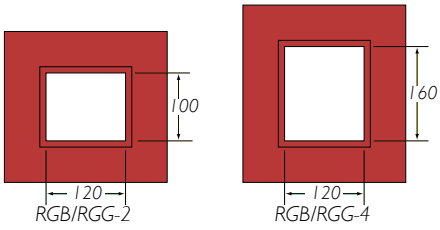
RGB/RGG-6+6x3

Information about combination frames can be found on page 11.

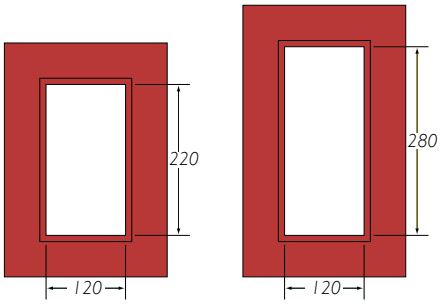
RGG

RGGO

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



RGB/RGG-2 RGB/RGG-4



RGB/RGG-6 RGB/RGG-8

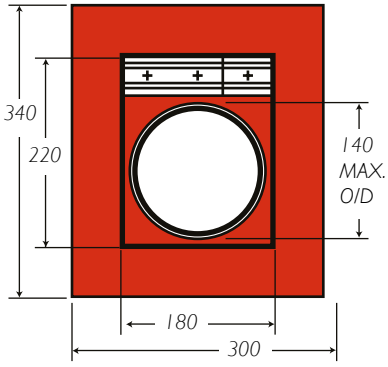
Weight chart in kilograms

Weight in kilograms

MATERIAL	FRAME SIZE	W (width) Combination frames x 1	x 2	x 3	x 4	x 5	x 6
STEEL SS EN 10025-S235JRG2 DIN RST 37-2 BS 4360 gr. 40 NS 17100	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
	RGB/RGG-2+2	5.0	7.9	10.9	13.9	16.8	19.8
	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
	RGB/RGG-2+8	6.9	11.0	15.1	19.2	23.3	27.4
	RGB/RGG-4+4	6.2	9.9	13.6	17.3	21.,0	24.7
	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
	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 DIN 1,4404 ASTM/316 L AiSi 316 L BS 970 gr. 316 S11 NS 14450	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
	RGB/RGG-2+2	5.1	8.1	11.2	14.2	17.2	20.3
	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
	RGB/RGG-2+8	7.1	11.3	15.5	19.7	23.9	28.1
	RGB/RGG-4+4	6.3	10.1	13.9	17.8	21.6	25.4
	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
	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 EN AW6082 DIN ALMG SI 1 A 6082 BS H30/6082 TF NS 17305	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
	RGB/RGG-2+2	1.8	2.8	3.9	4.9	5.9	7.0
	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
	RGB/RGG-2+8	2.4	3.9	5.3	6.7	8.2	9.6
	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
	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

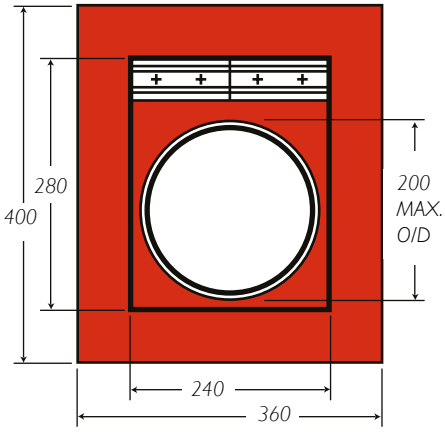
RGB and RGBO, RGG and RGGO

PIPE TRANSITS



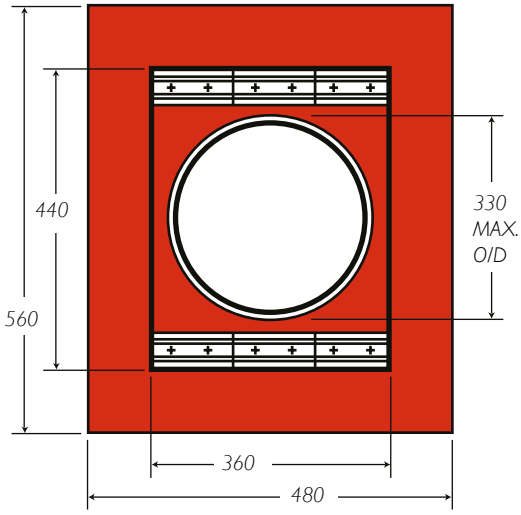
Transit
RGB/RGG-180
RGBO/RGGO-180

Compression
PTG 60 + 120



Transit
RGB/RGG-240
RGBO/RGGO-240

Compression
2 x PTG - 120

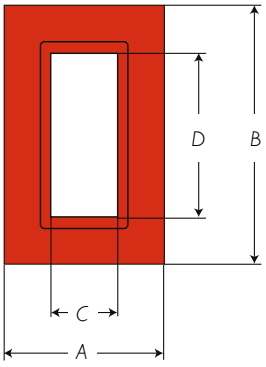


Transit
RGB/RGG-360
RGBO/RGGO-360

Compression
6 x PTG - 120

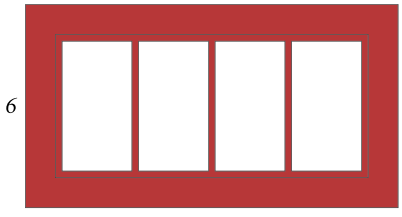
RGB and RGG-1, 3, 5 & 7

EXTRA SMALL WIDTH

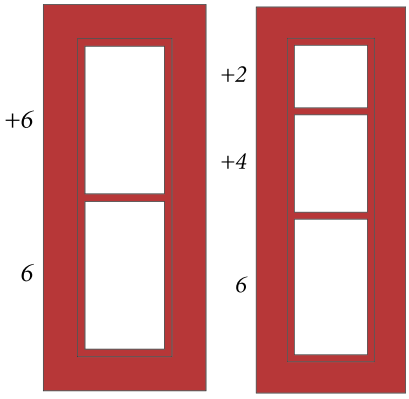


Frames size	Dimensions			
	A	B	C	D
RGB/RGG-1	180	221	60	100
RGB/RGG-3	180	279,5	60	160
RGB/RGG-5	180	338	60	220
RGB/RGG-7	180	396,5	60	280

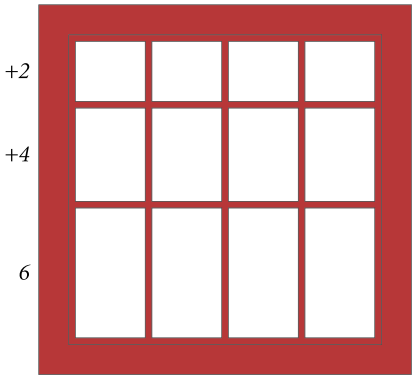
Multiple Frames



Designation: (frame type) 6x4



(frame type) 6+6
(frame type) 6+4+2
Designation (starting at bottom):



(frame type) 6+4+2x4
Designation (starting at bottom):
NOTE: All multiple frame designations must be preceded by the frame type

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.

Components

STAYPLATE

To be placed between each row of blocks. Stayplates simplyfies installation, increases stability and anchores blocks within the frame. Plates come in galvanized or stainless steel, and aluminium.

STG-ENDPACKING

Installed between compression plate and the top of the frame, completing the seal. Made of Lycron with galvanized or stainless steel fittings.

COMPRESSION PLATE

Usually assembled above top row of blocks. The plate bolt is tightened to compress blocks around cables, while providing room for STG endpacking. Comes in GRP, glassfibre reinforced polyester.

PTG-PRESSWEDGE

Can be used as an alternative to compression plate and STG. Can also be placed anywhere in the frame. Made of Lycron, with stainless steel fittings.
Must always be installed in combination with a stayplate.

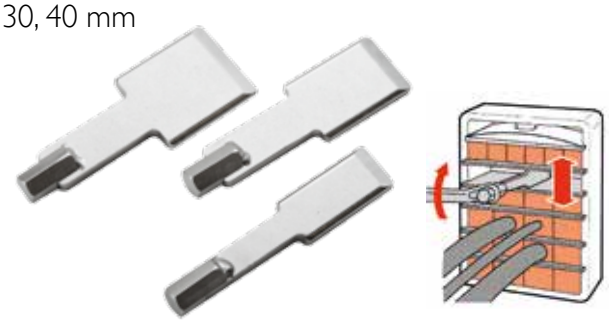
LUBRICANT 30g

For easier insallation and must be used with pressure-tight installation,

Weight in kilograms			
STG	PTG	COMPRESSION PLATE	STAYPLATE
0,6	0,82	0,24	0,13

Accessories

SPACER TOOL
Simplifies insertion of last row of blocks.
20, 30, 40 mm



PACKING TOOL
Compresses insert block to hold cable/pipes during partial installations.

BLOCK SELECTOR
For cable/pipe measurement.

STD insert

AddBlock

END PACKER PULLER
For re-entry into system.

QUICK RELEASE SPANNER
For Compression Plate Installation.

RING SPANNER.
For end packer & RGP installation.

CABLE SEPARATOR
Support cables during installation.

BLANKING PLATE
Seals frame prior to block installation.

More information about our tools, see our website, mctbrattberg.com

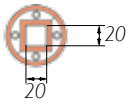
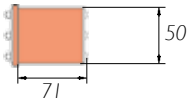
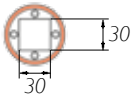
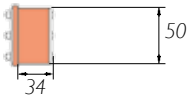
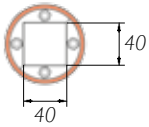
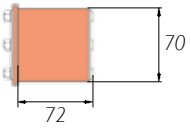
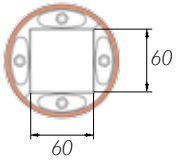
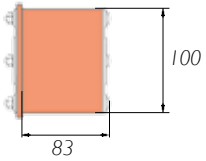
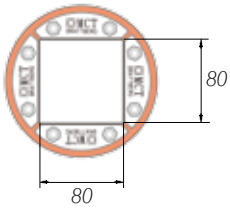
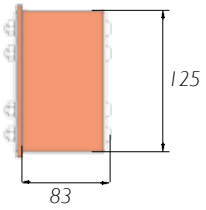
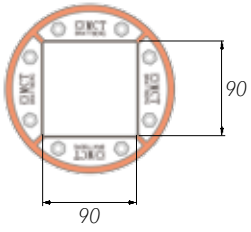
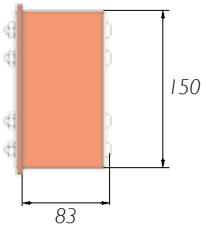
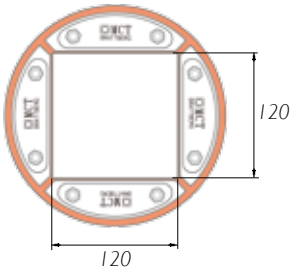
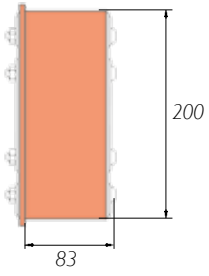
RGP and RGPO

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

RGPO is a Lycron frame with open sides intended for installation in holes where cables have already been installed. 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 125		
RGP 150		
RGP 200		

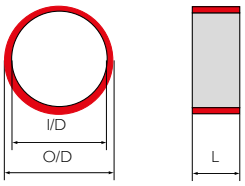
Weight in kilograms						
RGP 50/L60	RGP 50/L30	RGP 70	RGP100	RGP125	RGP150	RGP 200
0.25	0.11	0.4	0.7	1.0	1.8	3.0

Sleeves for RGP Frames

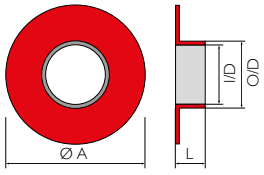
MCT Brattberg standard sleeves are available in seven sizes, for welding or bolting to the structure.

The standard materials are mild steel, stainless steel and aluminium. SFRB is also available in an open version (SFRBO).

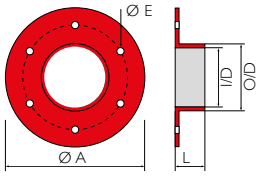
TYPE S WITHOUT FLANGE



TYPE SFR WITH ROUND FLANGE



TYPE SFRB WITH ROUND FLANGE AND PRE DRILLED HOLES



Type S without flange				
Type/Dimension	O/D mm	I/D mm	L mm	Weight kg
S 50/L30	63	51	35	0.3
S 50/L60	63	51	70	0.6
S 70	83	71	70	0.8
S 100	114	102	82	1.3
S 125	139	127	82	1,6
S 150	164	152	82	1.9
S 200	214	202	82	2.6

Type SFR and SFRB with round flange						
Type/Dimension	O/D mm	I/D mm	L mm	A mm	E mm	Weight kg
SFR/SFRB 50/L30	63	51	38	145	9	0,9
SFR/SFRB 50/L60	63	51	73	145	9	1.2
SFR/SFRB 70	83	71	74	185	9	2.1
SFR/SFRB 100	114	102	86	215	9	2.9
SFR/SFRB 125	140	127	86	240	9	4.2
SFR/SFRB 150	164	152	86	264	11	4.0
SFR/SFRB 200	214	202	86	315	11	5.1

Drilled holes see page 31

Planning the packing space

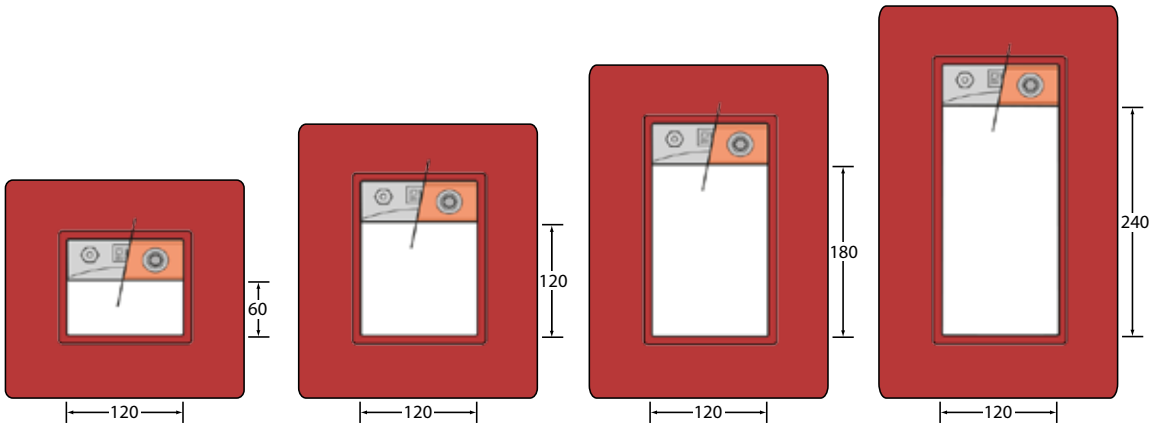
The space in the frame that can be used for the installation of cables/pipes is called the packing space. In RGB and RGG frames the upper 40 mm of space is always taken up by the Endpacking.

In RGP frames no compression plate or final seal is required to hold the insert blocks in place.

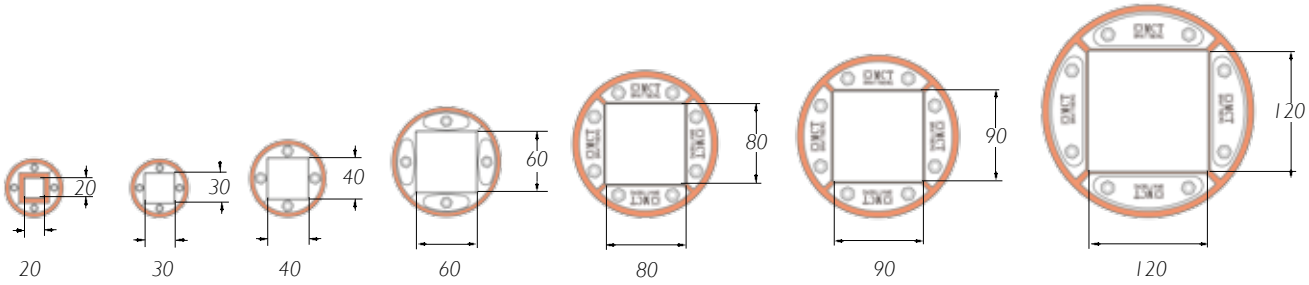
The packing space then consists of the whole of the frame's inner space. Tables that will help you determine which blocks you will need can be found, for standard blocks, on page 21 and for AddBlocks on page 22.

RGB

RGP



RGB/RGG-2 RGB/RGG-4 RGB/RGG-6 RGB/RGG-8



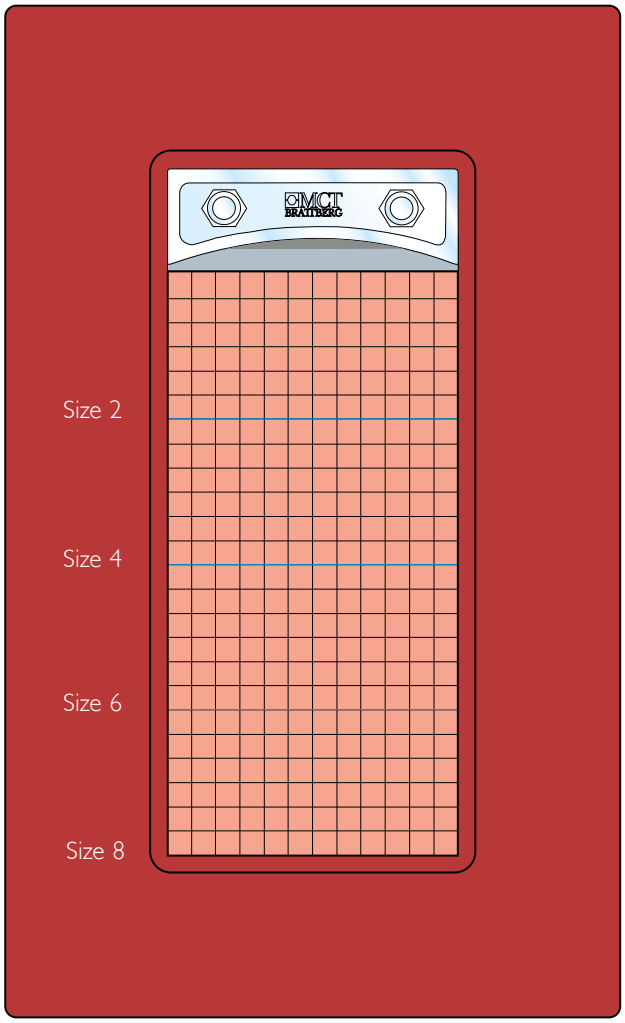
RGP 50/L60 RGP 50/L30 RGP 70 RGP 100 RGP 125 RGP 150 RGP 200

RGB maximum number of cables and pipes

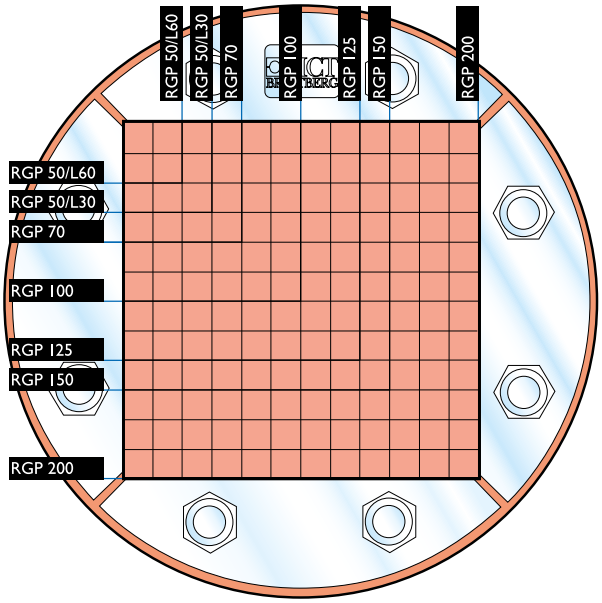
Frame sizes	Block sizes 15	20	30	40	60	90	120
	Maximum number of cables and pipes						
RGB/RGG-2	32	18	8	3	2	-	-
RGB/RGG-4	64	36	16	9	4	1	1
RGB/RGG-6	96	54	24	12	6	2	1
RGB/RGG-8	128	72	32	18	8	2	2

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 125	25	16	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 tray

Cable type	Frame size	Cable tray width in mm 150	200	300	400	600
Signal		6	6x2	6x3	6x4	6x5
Power		4	4x2	4x3	4x4	4x5
Combi-nation		6	6x2	6x3	6x4	6x5

Packing Plan

RGB, RGG and RGP

The correct frame size can be determined by using this plan.
The notes to the right side of the plan represent the available packing space for Frame sizes 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 notes to the left side of the plan Represent the available packing space for the different RGP frames.

Dimensions of Standard insert blocks, Add-blocks, Plugs and U-blocks, see pages 20-24.

STG

Compression plate

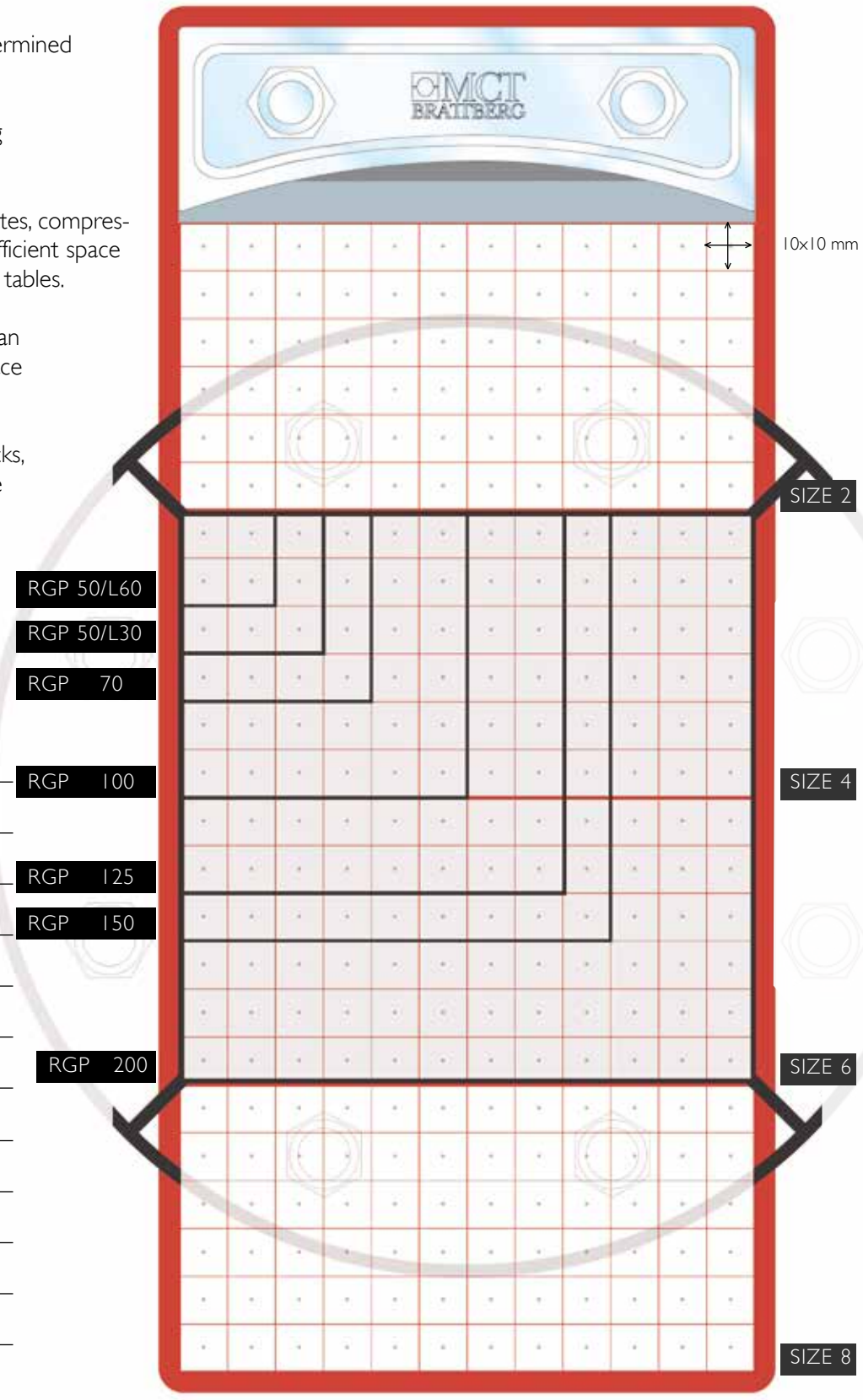
PTG Allen

PTG Hex

Stayplate

Lubricant

Blocks



Design Manager Software

MCT Brattberg - WinRG Plan Transit

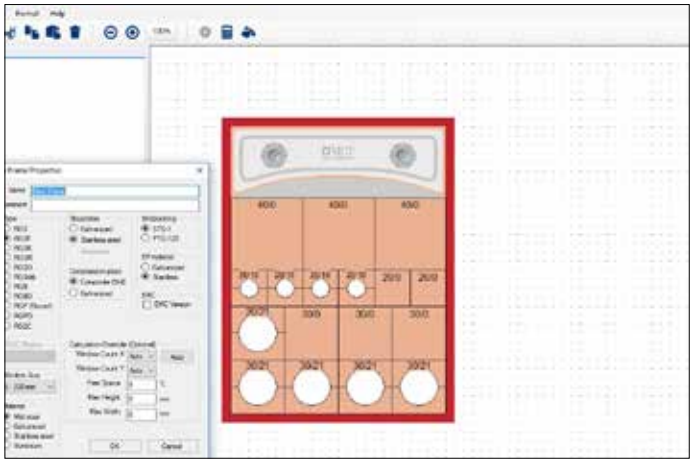
Configure cable/pipe penetrations quickly and easily with MCT Brattberg Cable Transit Planning Software. Simply input the transit requirements and software automatically configures the seal, along with all necessary components, blank blocks, stayplates and compression systems -at the touch of a button. Faster and simpler than time-consuming manual methods, it´s the perfect solution for busy engineers/designers.

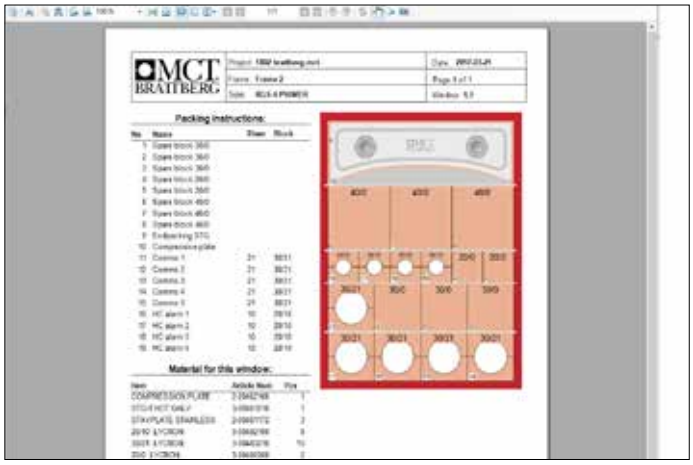
The software includes a wealth of project-specific information ready to use in your designs:

- Frame/item name/location
- Cable name(s) with type and diameter
- Block type
- Compression type
- Spare Capacity

Select from the available options to adapt on existing project, or to create an entirely new design.

The indispensable software is available from MCT Brattberg free of charge. Registered users can also receive regular product upgrades to ensure that your designs are always up to date.



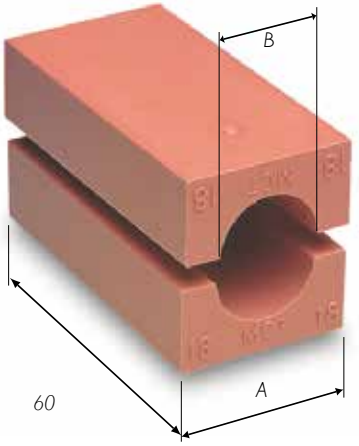


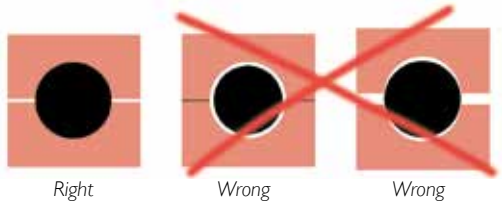
Standard Insert Blocks

Our range of blocks accomodates cables beween 3,5 -101,5 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.

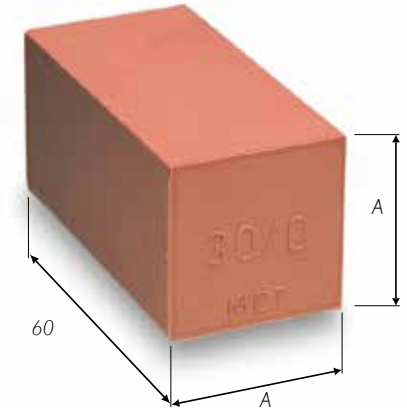




Spare blocks

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.



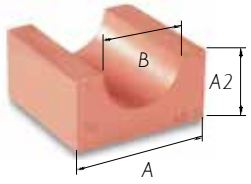
BLOCK SIZE Width (A) = Height (A)	BLOCK DESIGNATION
5 x 5 Only in strips of 24 pcs	24 x 5/0
10 x 10 Only in strips of 12 pcs	12 x 10/0
15 x 15	15/0
20 x 20	20/0
30 x 30	30/0
40 x 40	40/0
60 x 60	60/0
90 x 30	90 x 30/0

Other block sizes can be manufactured on request.

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			30/15		15
15.5-16.5			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
24.5-25.5				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



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.

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

Other block sizes can be manufactured on request.

Weight in grams per half

BLOCK	WEIGHT
24 x 5/0	58
12 x 10/0	113
15/0	20
20/0	38
30/0	84
40/0	150
60/0	338
90x30/0	279
15/4	10
15/5	10
15/6	10
15/7	10
15/8	9
15/9	8
20/4	18
20/5	18

BLOCK	WEIGHT
20/6	17
20/7	17
20/8	16
20/9	15
20/10	14
20/11	13
20/12	13
20/13	12
20/14	11
30/12	36
30/13	36
30/14	35
30/15	34
30/16	33
30/17	31
30/18	30

BLOCK	WEIGHT
30/19	28
30/20	27
30/21	25
30/22	24
30/23	22
30/24	21
40/22	57
40/24	54
40/26	50
40/28	47
40/30	42
40/32	37
40/34	32
60/32	131
60/34	127
60/36	122
60/38	116
60/40	110

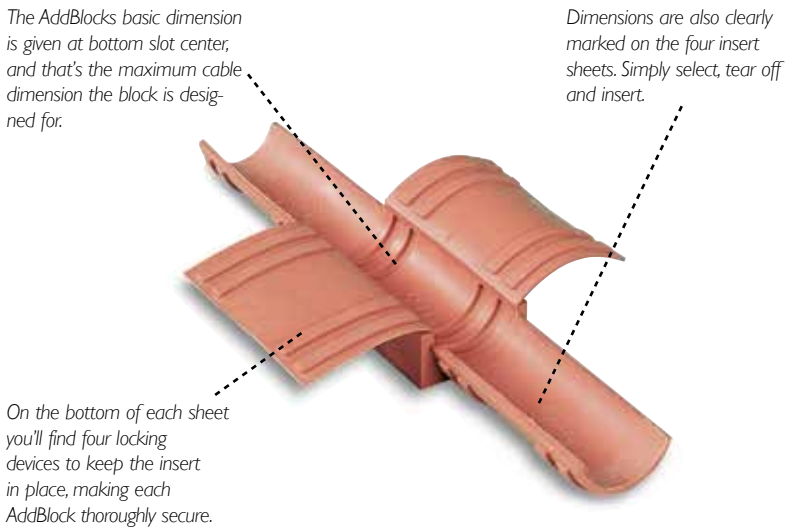
BLOCK	WEIGHT
60/42	104
60/44	98
60/46	91
60/48	84
60/50	77
60/52	59
60/54	61
90/50	287
90/52	279
90/54	273
90/56	262
90/58	255
90/60	243
90/62	239
90/64	229
90/66	220
90/68	211
90/70	204

BLOCK	WEIGHT
120/72	494
120/74	485
120/76	472
120/78	462
120/80	448
120/82	437
120/84	425
120/86	415
120/88	403
120/90	385
120/92	368
120/94	360
120/96	351
120/98	332
120/100	313
120/108	243

AddBlock

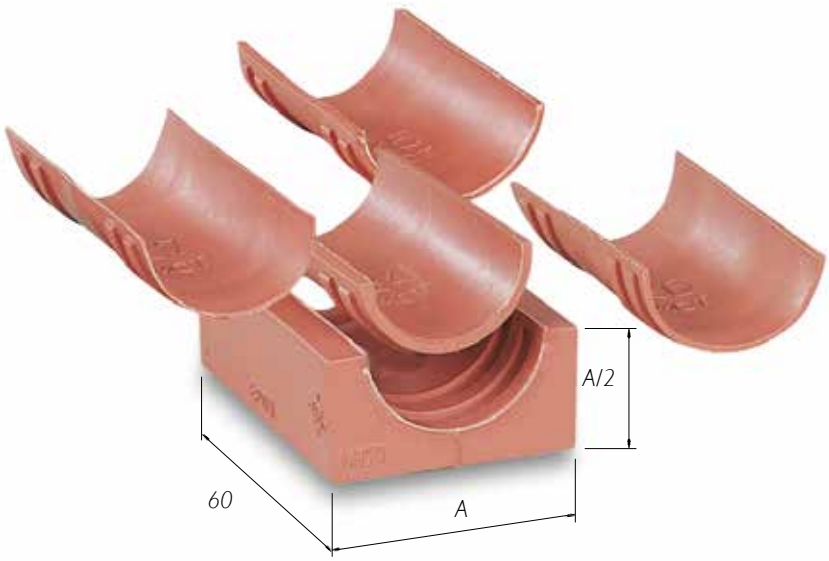
There are eleven different sizes of AddBlock. By tearing off the wing-like inserts, which are of varying thickness, and inserting them in the main block it is possible to accommodate 66 different cable and pipe dimensions, from 3.5 mm to 69.5 mm. The inserts are fitted with a locating ridge that fits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



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.



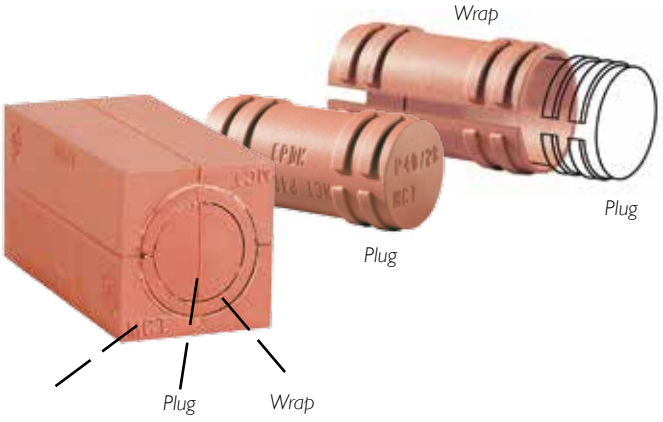
ADDBLOCK DIMENSION	CABLE OR PIPE DIMENSION	WEIGHT PER HALF (G)
20/4 - 8	3.5 - 8.5	23
20/9 - 13	8.5 - 13.5	23
30/14 - 18	13.5 - 18.5	45
30/19 - 23	18.5 -23.5	43
40/24 - 28	23.5 - 28.5	71
40/29 - 33	28.5 - 33.5	62
60/34 - 38	33.5 -38.5	150
60/39 - 43	38.5 - 43.5	136
60/44 - 48	43.5 - 49.5	128
90/50 - 58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

Plugs and Wraps

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.

P20/8 Plug, diameter 8 mm. Fits in AddBlock 20/4-8
P20/8 Plug, diameter 8 mm. With wrap-around casing
W20/8-13 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
W30/18-23 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
W40/28-33 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
W60/38-43 it fits in AddBlock 60/39-43 With additional casing
W60/43-48 it fits AddBlock 60/44-48

The plug's main purpose is to prepare coming installations by creating a spare block together with an AddBlock.

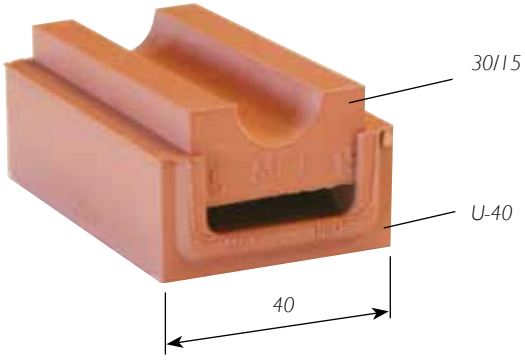


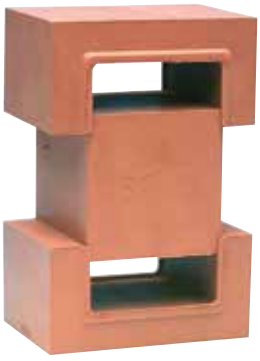
ADDBLOCK	PLUG	WRAP
20/4 - 8	P20/8	
20/9 - 13	P20/8 +	W20/8-13
30/14 - 18	P30/18	
30/19 - 23	P30/18 +	W30/18-23
40/24 - 28	P40-28	
40/29 - 33	P40-28 +	W40/28-33
60/34 - 38	P60/38	
60/39 - 43	P60/38 +	W60/38-43
60/44 - 48	P60/38 +	W60/38-43 and W60/43-48

U-Blocks

The U-Block is used to convert the external dimensions of Insert Blocks, AddBlocks and Spare Blocks to the next modular size.

For example a 30/15 Insert Block can be enlarged by placing it into a U40, giving the new size of 40/15.





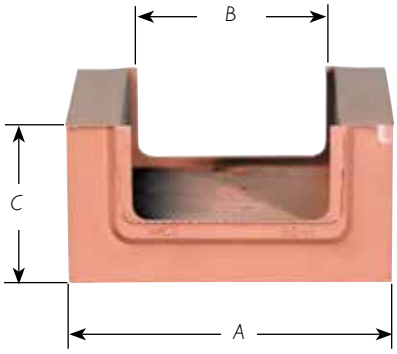
U-30

U-40

U-60

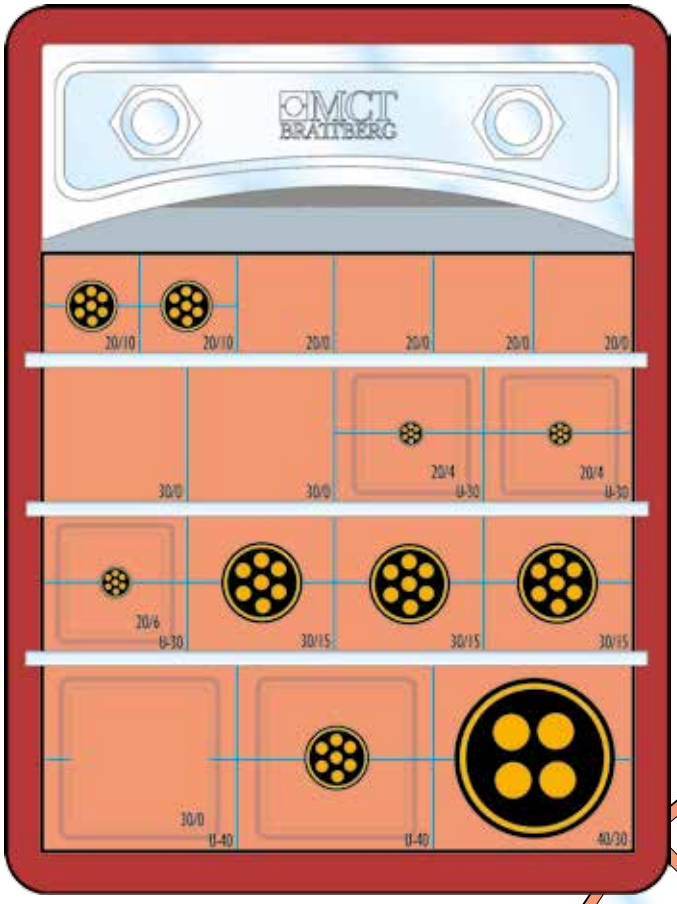
U-90

U-120

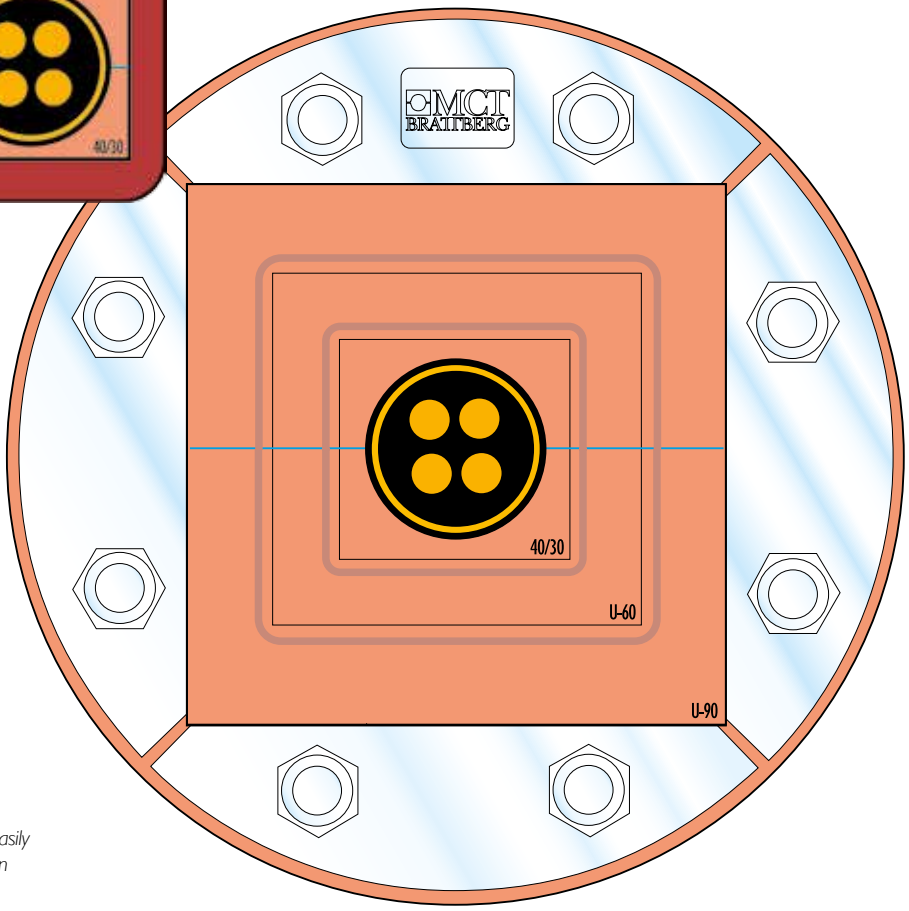


Dimensions in mm			
U-BLOCK	A	B	C
U-30	30	20	15
U-40	40	30	20
U-60	60	40	30
U-90	90	60	45
U-120	120	90	45

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.

Built-in

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. 4). MCT Brattberg's expanded polystyrene casting form simplifies fixing when casting and provides the necessary clearance (fig. 5).

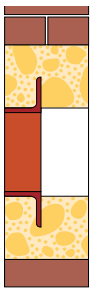


Fig. 1

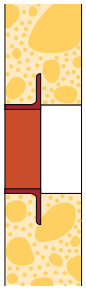


Fig. 2

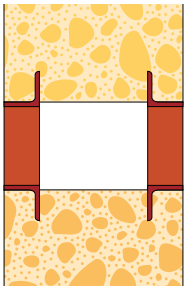


Fig. 3

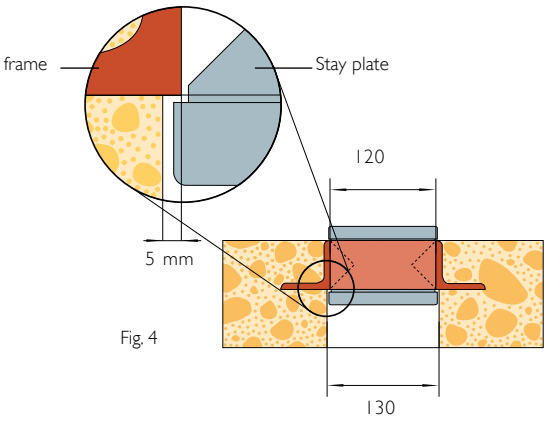
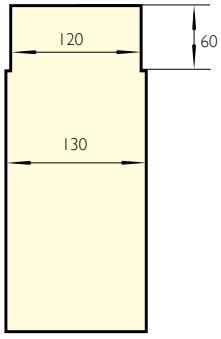


Fig. 4



Polystyrene casting form

Fig. 5

MCT Brattberg's expanded polystyrene casting form.

RGG frames and the flanges of the **Counter frame** are screwed into the wall (fig. 6). 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 below.

RGG and **RGGO** frames can also be bolted in place with the aid of, for example, expansion bolts. A Lycron sealing strip or sealant is used between the frame and the wall to provide a gas tight seal. There are two ways of bolting the frames in position, (figs. 7 and 8). Where practically possible, fig. 7 should always be employed.

Counter frame

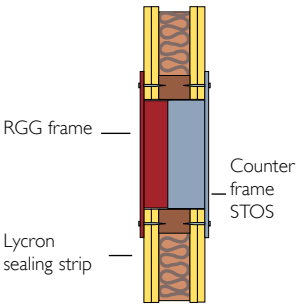


Fig.6

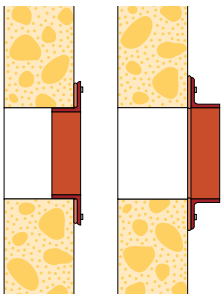


Fig. 7

Fig. 8

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

RGP and **RGPO** frames are installed on one side of the wall when normal demands are made for fire safety, (see fig. 9.) When the satety demands are particularly high two RGP frames are installed back-to-back (fig. 10).
RGP can be installed in drilled or cast holes, or in a pipe that is cast in or bolted. Casting is made easier if MCT Brattberg casting forms are used, see picture.

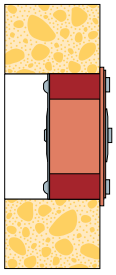


Fig. 9

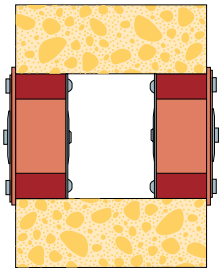
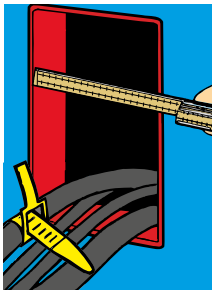


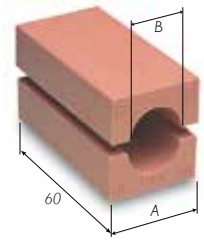
Fig. 10

MCT Brattberg's casting form.

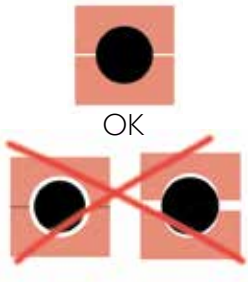
Installation Guide



1 *Measure the opening and check that the measurement is within the tolerance range 120.5 mm +/- 0.5 mm. Check that the frame is clean and pull through the cables. Measure the diameter of the cables and choose suitable blocks. Lubricate the inner faces of the frame.*



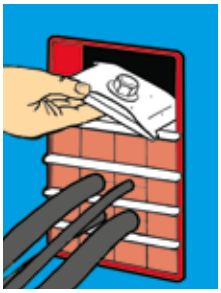
2 *Insert Block. The blocks are identified by their width (A) and hole diameter (B). A block that is 30 mm wide and has a hole diameter of 18 mm is marked 30/18. This marking is cast into the block.*



3 *The diagram marked OK shows how the cable should look when correctly fitted.*

4 *Pack the frame. Place stayplates between each row of blocks*

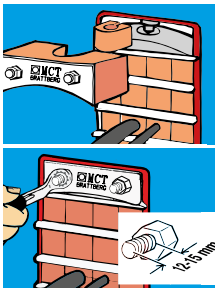
STG ENDPACKING



5 *Pack the frame. Place stayplates between each row of blocks.*

6 *Insert the top row of blocks.*

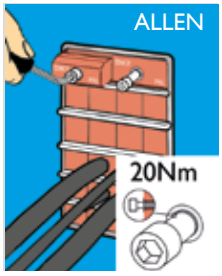
7 *Tighten the bolt in the compression plate anticlockwise until there is a gap of 32-33 mm between the top of the plate and the inside of the frame.*



8 *Insert the STG endpacking with the tongue around the compression bolt. Tighten the nuts in the endpacking until 12-15 mm of thread is visible.*

PTG PRESSWEDGE, ALLEN AND HEX

5 *Place the last two stayplates in the frame before the last row of blocks. Then fit the PTG presswedge over the stayplates.*



6 *Insert the final row of blocks. Tighten the nuts in the PTG to the end or 20 Nm.*

7

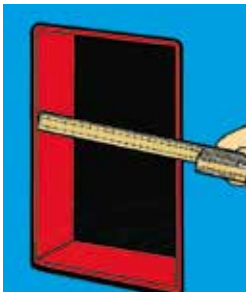
8 *The PTG presswedge can be placed anywhere in the frame.*

Pressure-tight installation

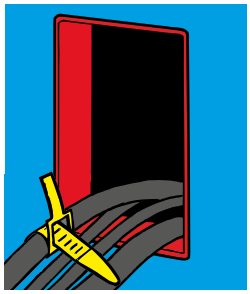
Check that the frame is clean and that the inside is well lubricated. All Lycron parts must be lubricated carefully with MCT Brattberg lubricant.
Place the compression plate in the centre so that the Lycron rubber is pushed upwards between the compression plate and the frame. The seal must not be subjected to pressure for at least 48 hours after installation. This is to allow the pressure to equalise throughout the penetration.
It will take more time for the pressure to equalise at temperatures below 20°C.

Note: If the installation is subjected to pressure, all components must be replaced after removal and refitting.

AddBlock



Measure the opening and check that the measurement is within the tolerance range 120.5 mm +/- 0.5 mm. Check that the frame is clean and pull through the cables.



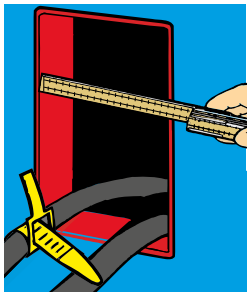
Measure the diameter of the cables and choose suitable blocks. Lubricate the inner faces of the frame.

Tear off attached sheet to fit the dimension selected.

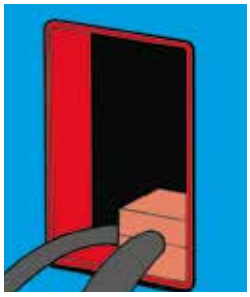
Place sheet into centre slot and affix it with the unique locking device.

Tear off superfluous sheets.

U-Block



Measure the opening to ensure that its size conforms with tolerance standards 120,5 mm (+/-0,5). Measure the diameter of the cables.



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

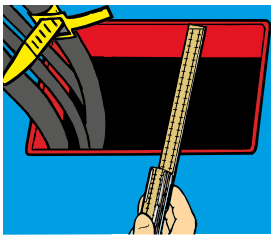
PREPARING
FOR A FUTURE INSTAL-
LATION.

Choose an AddBlock suitable for the cable diameter.

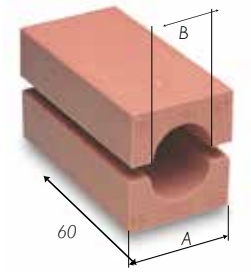
The centre plug is a snug fit for any pre-selected AddBlock since its diameter i adjustable - all thanks to the wraparound casing.

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

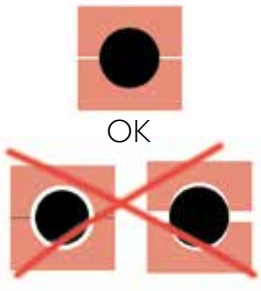
Horizontal Installation Guide



1 *Measure the opening and check that the measurement is within the tolerance range 120.5 mm +/- 0.5 mm. Check that the frame is clean and pull through the cables. Measure the diameter of the cables and choose suitable blocks. Lubricate the inner faces of the frame.*

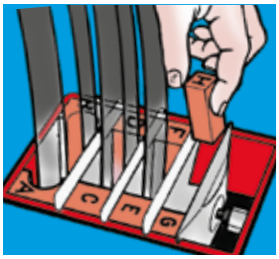


2 *The blocks are identified by their width (A) and hole diameter (B). A block that is 30 mm wide and has a hole diameter of 18 mm is marked 30/18. This marking is cast into the block.*



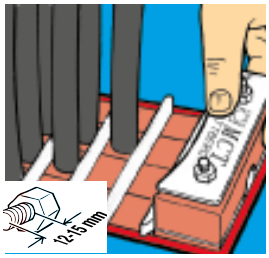
3 *The diagram marked OK shows how the cable should look when correctly fitted.*

4 *To prevent the blocks from falling through during horizontal installation, fit all the stayplates and the compression plate first. Check the RG plan to make sure the cables are positioned correctly.*



5 *Insert the outer blocks first (A, B, C, etc). Then insert the rest of the blocks. Note: block A must be rotated 90°, see diagram.*

6 *Pack the frame. Tighten the bolt in the compression plate anticlockwise until there is a gap of 32-33 mm between the top of the plate and the inside of the frame.*



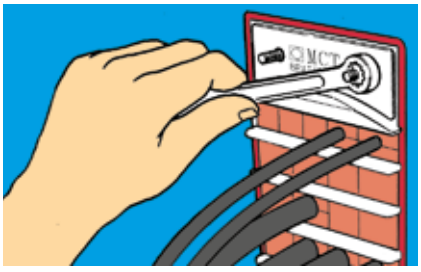
7 *Insert the STG endpacking with the tongue around the compression bolt. Tighten the nuts in the endpacking until 12-15 mm of thread is visible.*

Disassembly Guide

STG

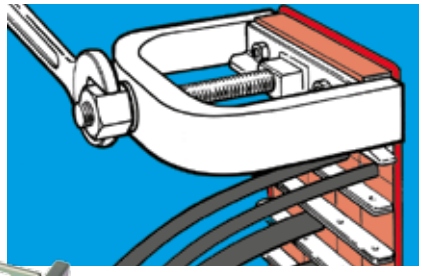
1

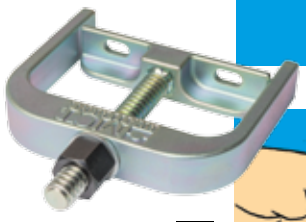
Remove the nuts and the hardware from the face of the endpacking.



2

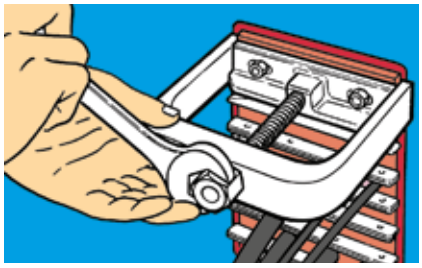
Attach the endpacking puller to the bolts with the nuts from the endpacking





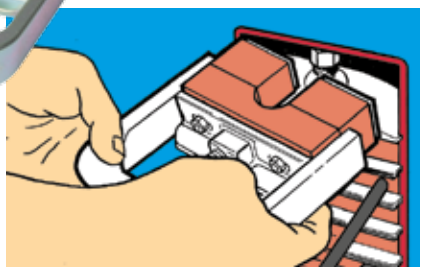
3

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

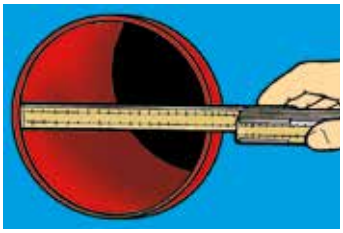


4

Remove the endpacking.

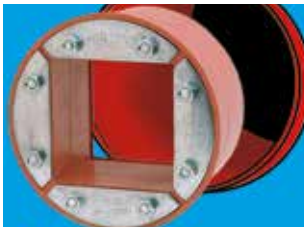


RGP Installation



1

Measure the pipe/drilled hole to ensure that the size conforms to tolerance standards.

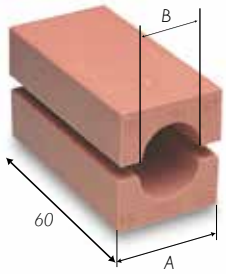


2

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

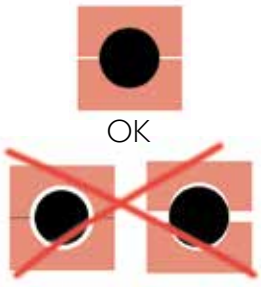
3

Place the frame in correct position in the hole. Check that the frame is clean and pull through the cables. Place the largest cables at the bottom of the frame. Measure the diameter of the cables and choose suitable blocks.



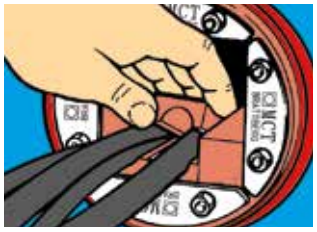
4

Insert Block. The blocks are identified by their width (A) and hole diameter (B). A block that is 30 mm wide and has a hole diameter of 18 mm is marked 30/18. This marking is cast into the block.



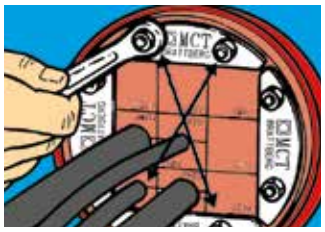
5

The diagram marked OK shows how the cable should look when correctly fitted.



6

Begin packing.



7

Tighten the nuts in diagonal order until 12-15 mm of thread is visible.

Tolerances for pipes and drilled holes	
Pipes	Inner Ø
RGP 50	50-51
RGP 70	70-71
RGP 100	100-102
RGP 125	125-127
RGP 150	150-152
RGP 200	200-202

PRESSURE-TIGHT INSTALLATION RGP

All contact surfaces between the pipe and the RGP plug must be cleaned carefully prior to installation. Do not use any lubricant on these surfaces. All blocks must be lubricated carefully with MCT Brattberg lubricant. The penetration must not be subjected to pressure for at least 48 hours after installation. This is to allow the pressure to equalise throughout the penetration.
It will take more time for the pressure to equalise at temperatures below 20°C.

Note: If the installation is subjected to pressure, all components must be replaced after removal and refitting.

www.mctbrattberg.com

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