On Land

Safety above all

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Productprogramme

Installation

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.

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.

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:

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.

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.

Hyperlinks embedded in the website club give you direct access to:

• Presentation of Transit design RG Plan
• Planning the packing space
• Transit installation
• Online training modules
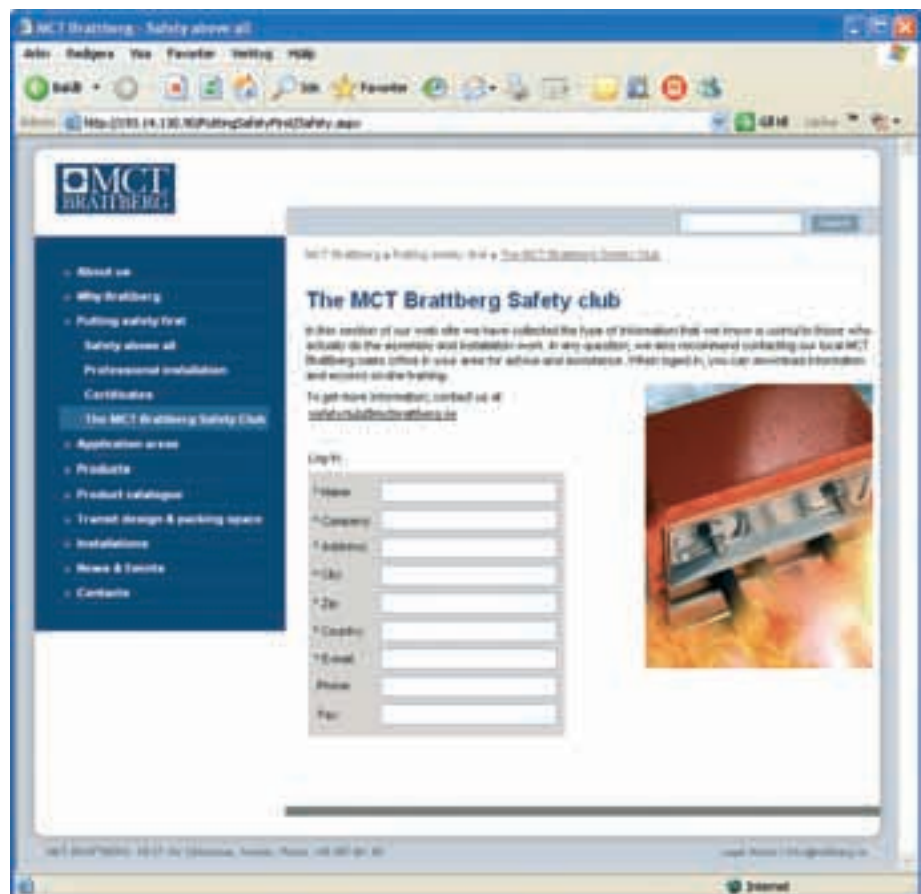
The original
cable transit

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 with an internal width of 120.5 mm $\pm$0.5 mm, a depth of 60 mm and wall thickness of 6 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.

- Frames
- Standard insert blocks
- Add Blocks
- U-blocks
- Spare blocks
- Components
- Accessories

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 and blocks for wave guides

are two examples 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.

Blocks for oval wave guides are also manufactured to order. These fit all Brattberg frames and are used mainly in radar stations.

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 (synthetic EMP) and static electricity.

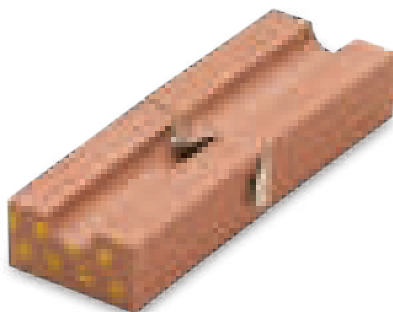All dimensions are exactly the same as for the other MCT Brattberg components.

For special products please consult MCT Brattberg.

PHP pressure hull penetrator for submarines.

Products to protect against EMC.

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 11.

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. 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 11.

RGB

RGBO

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	- " -	- " -	- " -	- " -	- " -	- " -	

Size chart in mm

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

60

RGB/RGG-6+6x3

RGG
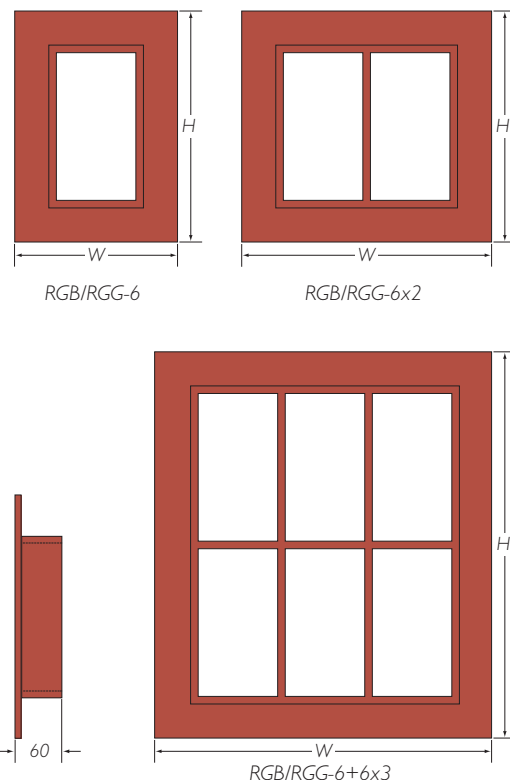
Counter frame

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.

100
120
RGB/RGG-2

160
120
RGB/RGG-4

220
120
RGB/RGG-6

280
120
RGB/RGG-8

Weight chart in kilograms

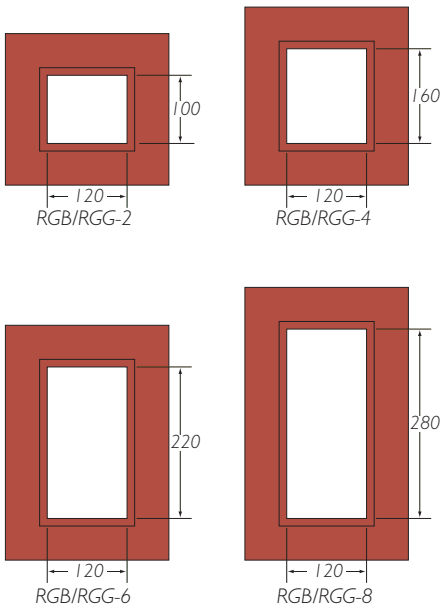| Weight in kilograms							
		W (width) Combination frames					
MATERIAL	FRAME SIZE	x 1	x 2	x 3	x 4	x 5	x 6
STEEL	RGB/RGG-2	3.1	5.0	6.9	8.8	10.7	12.6
	RGB/RGG-4	3.8	5.9	8.1	10.2	12.4	14.6
	RGB/RGG-6	4.4	6.8	9.2	11.5	13.8	16.3
	RGB/RGG-8	5.0	7.7	10.4	13.1	15.8	18.5
SS EN 10025-S235JRG2	RGB/RGG-2+2	5.0	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
DIN RST 37-2	RGB/RGG-2+6	6.2	9.9	13.6	17.3	21.0	24.7
BS 4360 gr. 40	RGB/RGG-2+8	6.9	11.0	15.1	19.2	23.3	27.4
NS 17100	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	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
DIN 1,4404	RGB/RGG-2+2	5.1	8.1	11.2	14.2	17.2	20.3
ASTM/316 L	RGB/RGG-2+4	5.8	9.2	12.7	16.1	19.6	23.0
AiSi 316 L	RGB/RGG-2+6	6.3	10.1	13.9	17.8	21.6	25.4
BS 970 gr. 316 S11	RGB/RGG-2+8	7.1	11.3	15.5	19.7	23.9	28.1
NS 14450	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	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
EN AW6082	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
A 6082	RGB/RGG-2+6	2.2	3.5	4.8	6.1	7.4	8.7
BS H30/6082 TF	RGB/RGG-2+8	2.4	3.9	5.3	6.7	8.2	9.6
NS 17305	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/RGBO 180, 240 & 360

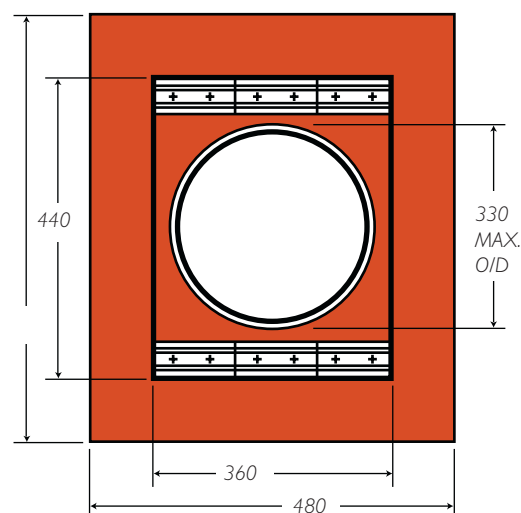PIPE TRANSITS
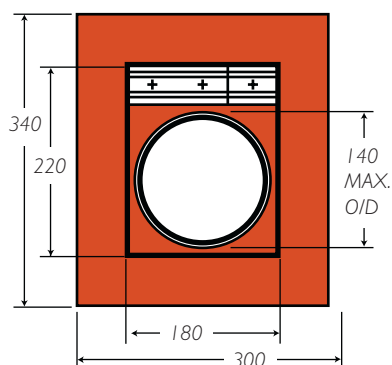
*Transit
RGB 180
RGBO 180*

*Compression
PTG 60 + 120*
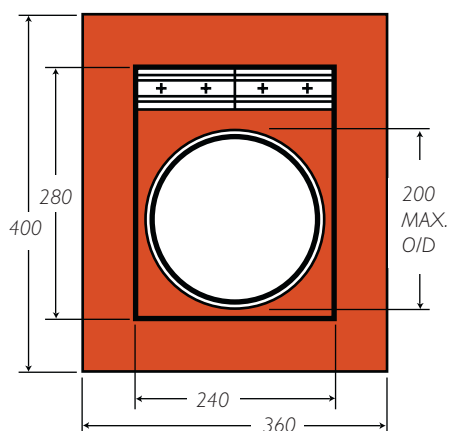
*Transit
RGB 240
RGBO 240*

*Compression
2 x PTG - 120*

*Transit
RGB 360
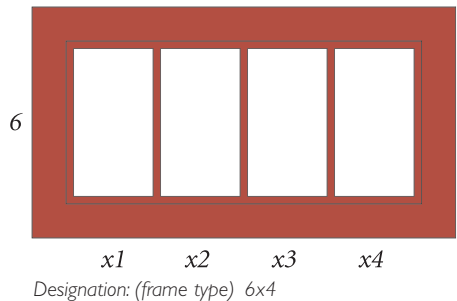RGBO 360*

*Compression
6 x PTG - 120*

RGB 1, 3 & 5

EXTRA SMALL WIDTH
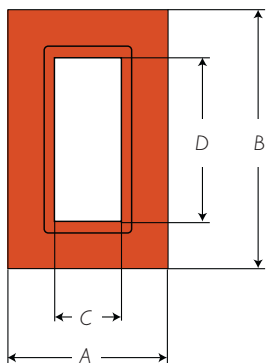
| Frames size	Dimensions			
	A	B	C	D
RGB1	180	221	60	100
RGB3	180	279,5	60	160
RGB5	180	338	60	220

Multiple Frames

HORIZONTAL MULTIPLE FRAMES

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

6

x1   x2   x3   x4

Designation: (frame type) 6x4

VERTICAL MULTIPLE FRAMES

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

+6

6

+2

+4

6

Designation (starting at bottom):

(frame type)
6+6
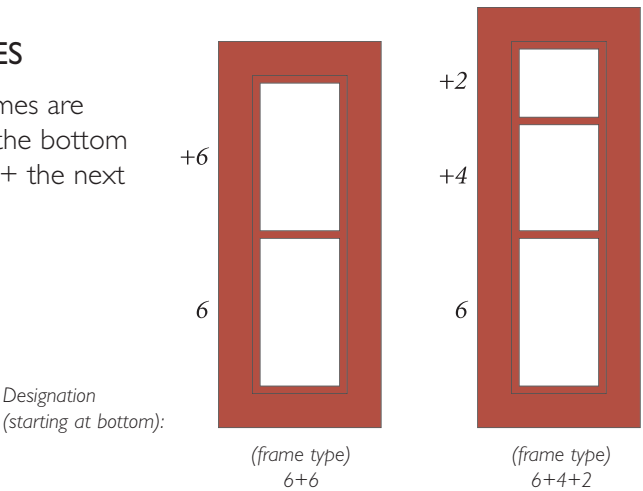
(frame type)
6+4+2

VERTICAL AND HORIZONTAL MULTIPLE FRAMES

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

+2

+4

6

Designation (starting at bottom):

x1   x2   x3   x4
(frame type) 6+4+2x4
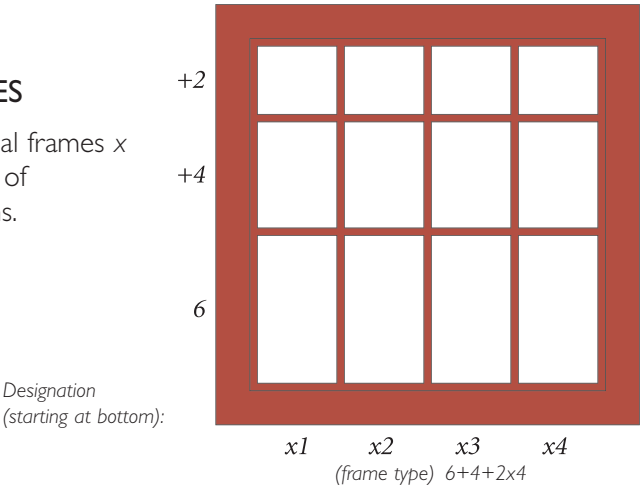
NOTE: All multiple frame designations must be preceded by the frame type.
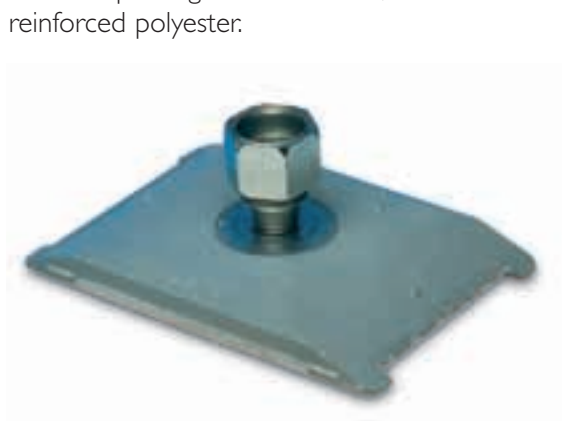
Components

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 galvanized or stainless steel fittings.
Must always be installed in combination with a stayplate.
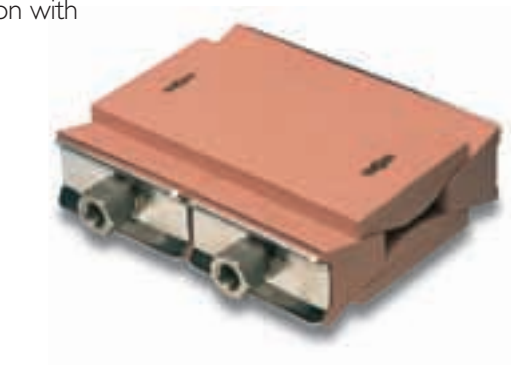
Weight in kilograms			
STG	PTG	COMPRESSION PLATE	STAYPLATE
0,6	0,82	0,24	0,13

Accessories

LUBRICANT
For pressure-tight Installations.

BLOCK SELECTOR
For cable/pipe measurement.

STD insert

AddBlock

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

END PACKER PULLER
For re-entry into system.

FLEX HEAD SPANNER
For end packer & RGP installation.

QUICK RELEASE SPANNER
For Compression Plate Installation.

CABLE SEPARATOR
Support cables during installation.

BLANKING PLATE
Seals frame prior to block installation.

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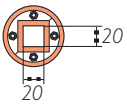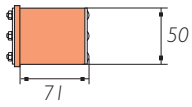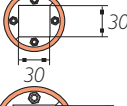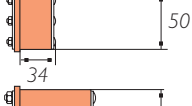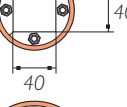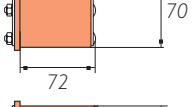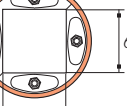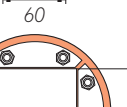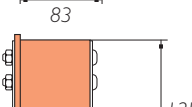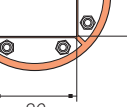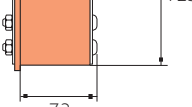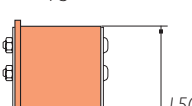
RGPO is a Lycron frame with open sides intended for installation in holes where cables have already been installed. This is also available in seven sizes.

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	20 / 20	50 / 71
RGP 50/L30	30 / 30	50 / 34
RGP 70	40 / 40	70 / 72
RGP 100	60 / 60	100 / 83
RGP 125	80 / 80	125 / 73
RGP 150	90 / 90	150 / 83
RGP 200	120 / 120	200 / 78

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

The sleeves are available in seven sizes, for welding, casting 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
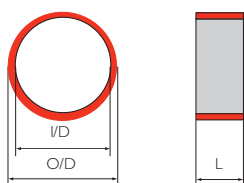
TYPE SFR WITH ROUND FLANGE
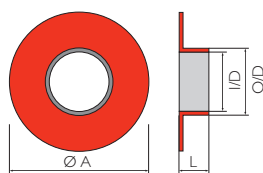
TYPE SFRB WITH ROUND FLANGE
AND PRE DRILLED HOLES
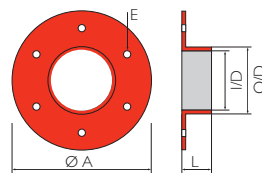
Type S without flange				
Type/size	O/D mm	I/D mm	L mm	Weight kg
S 50/L30	63	51 [1]	35	0.3
S 50/L60	63	51 [1]	70	0.6
S 70	83	71 [1]	70	0.8
S 100	114	102 [1]	82	1.1
S 125	139	127 [1]	82	1,4
S 150	164	152 [1]	82	1.9
S 200	214	202 [1]	82	2.5

[1] 0-0.3 mm

Type SFR and SFRB with round flange							
Type/size	O/D mm	I/D mm	L mm	A mm	E mm	Qty of holes	Weight kg
SFR/SFRB 50/L30	63	51 [1]	38	145	9	4	0,9
SFR/SFRB 50/L60	63	51 [1]	73	145	9	4	1.2
SFR/SFRB 70	83	71 [1]	74	185	9	4	2.1
SFR/SFRB 100	114	102 [1]	86	215	9	4	2.7
SFR/SFRB 125	140	127 [1]	86	240	9	4	4.0
SFR/SFRB 150	164	152 [1]	86	264	11	6	4.0
SFR/SFRB 200	214	202 [1]	86	315	11	6	5.1

[1] 0-0.3 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 21 and for AddBlocks on page 22.

RGB

RGP

60
120
RGB 2

120
120
RGB 4

180
120
RGB 6

240
120
RGB 8

20
20
RGP 50/L60

30
30
RGP 50/L30

40
40
RGP 70

60
60
RGP 100

80
80
RGP 125

90
90
RGP 150

120
120
RGP 200

RGB maximum number of cables and pipes							
	Block sizes						
	15	20	30	40	60	90	120
Frame sizes	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							
	Block sizes						
	15	20	30	40	60	90	120
Frame sizes	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
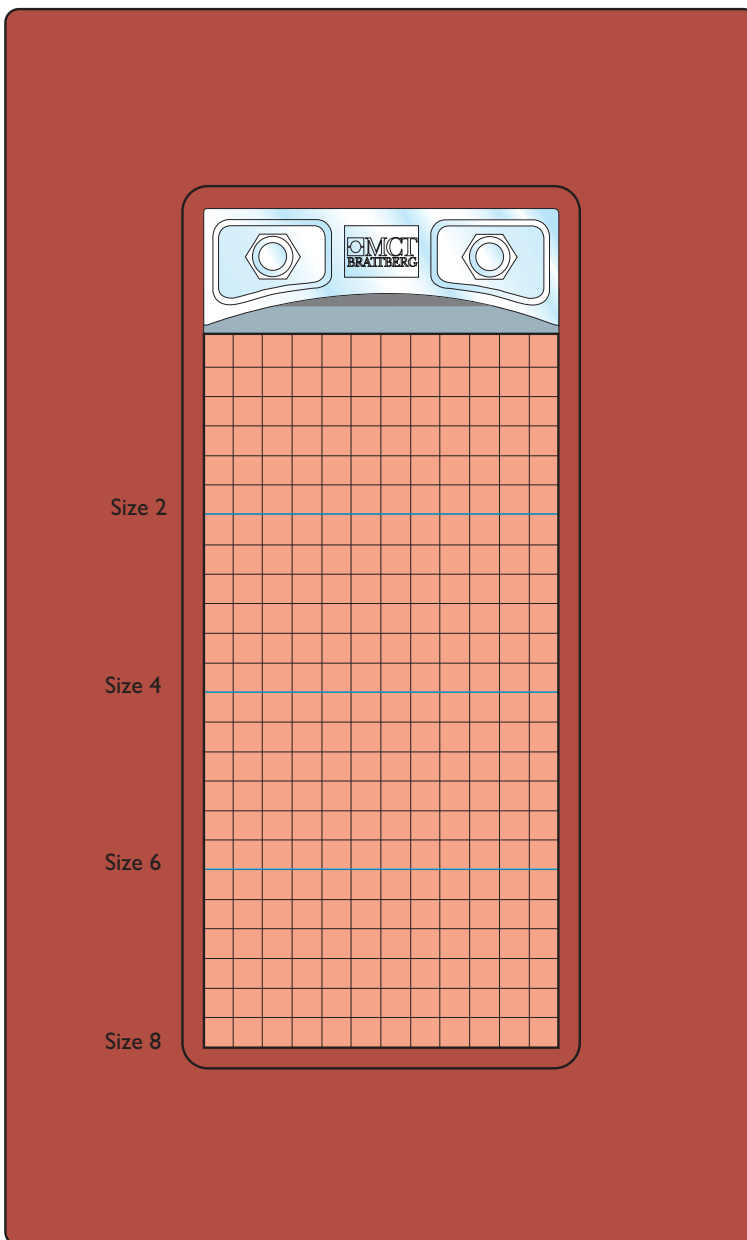
A couple of examples of pack plans (RG Plan) are shown here. RGB to the left and RGP below. The largest cables are placed at the bottom.
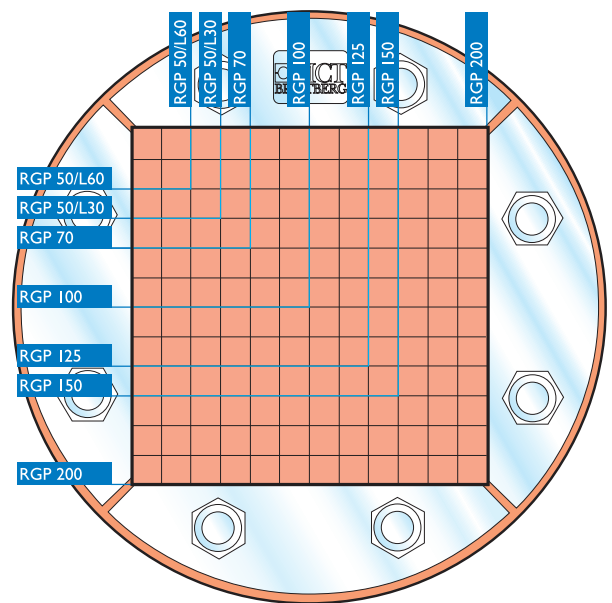
Combination frame width compared with width of cable size						
		Cable size width in mm				
Cabletype		150	200	300	400	600
Signal	Frame-size	6	6 x 2	6 x 3	6 x 4	6 x 5
Power		4	4 x 2	4 x 3	4 x 4	4 x 5
Comb.		6	6 x 2	6 x 3	6 x 4	6 x 5

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.

10x10 mm

SIZE 2

RGP 50/L60

RGP 50/L30

RGP 70

RGP 100

STG

Compression plate

RGP 125

PTG

RGP 150

Stayplate

Lubricant

Blocks

RGP 200

SIZE 4

SIZE 6

SIZE 8
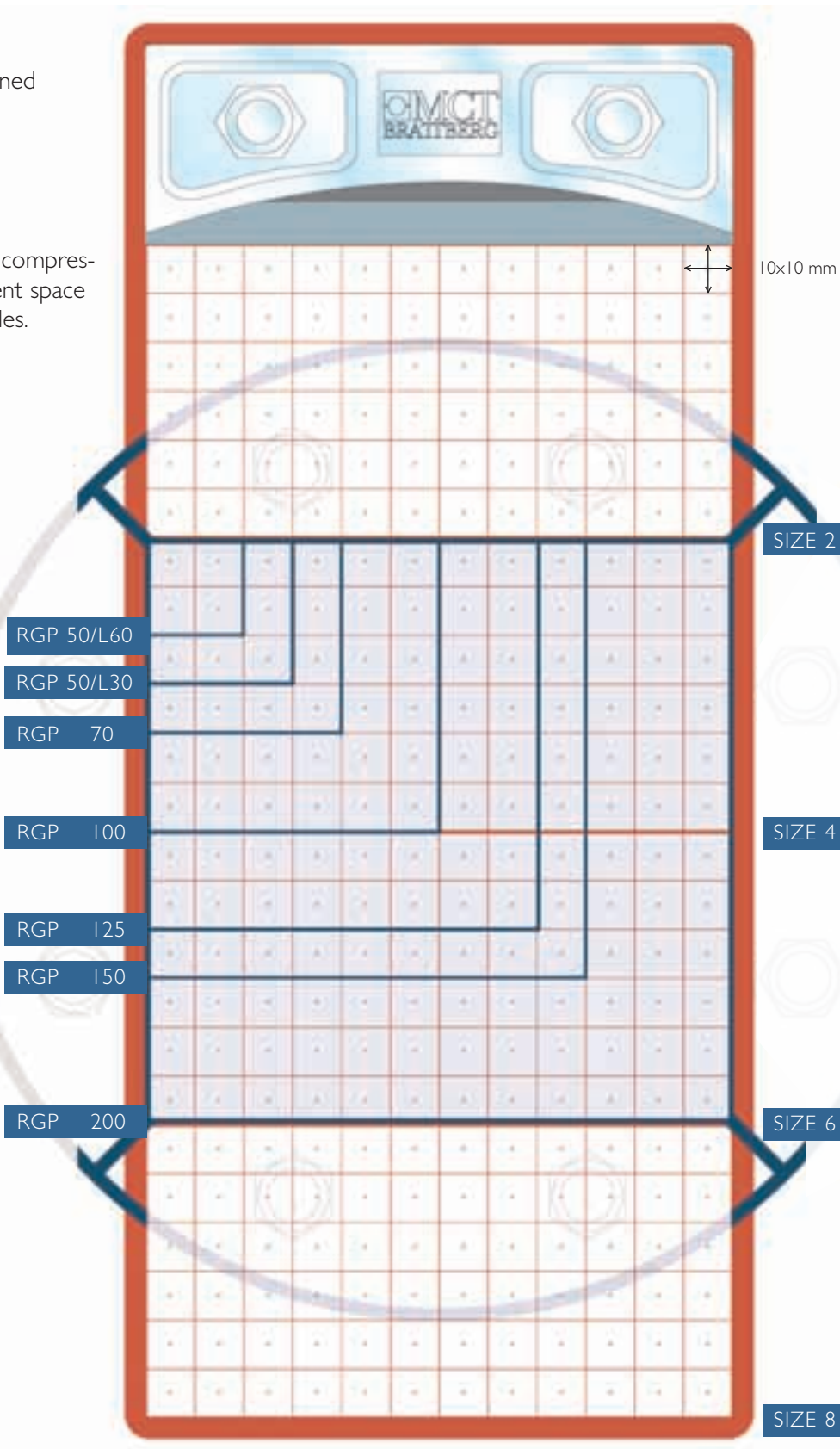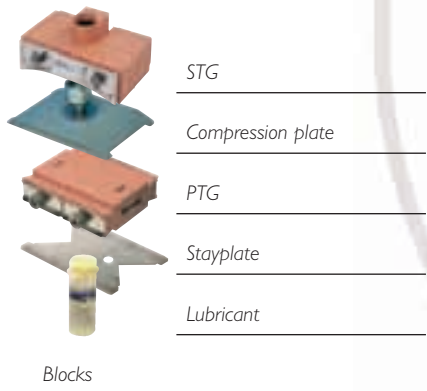
Design Manager Software

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
-        Expansion 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.
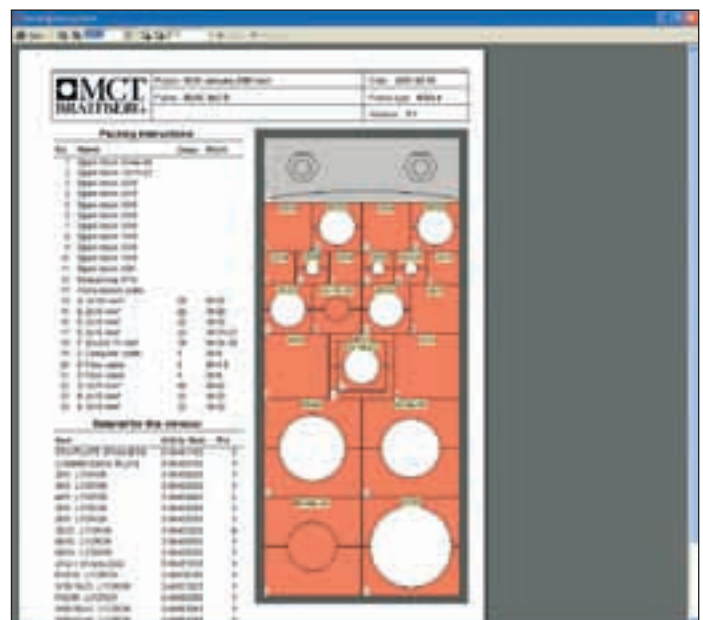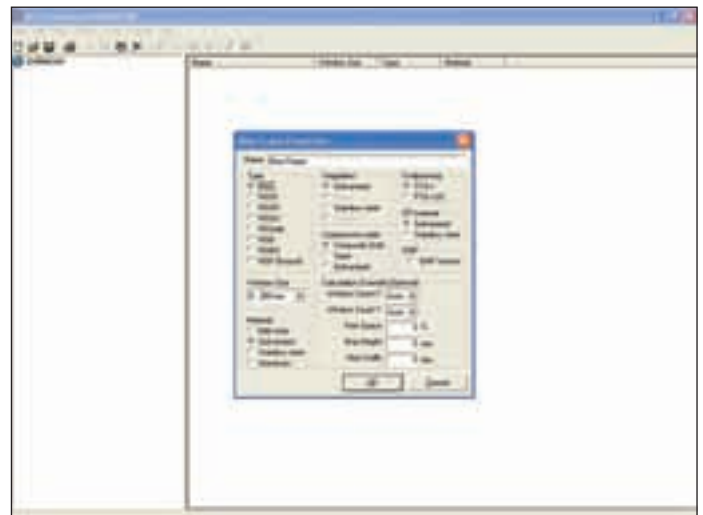
Standard Insert Blocks

Our range of blocks accomodates cables beween 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.

Right	Wrong	Wrong
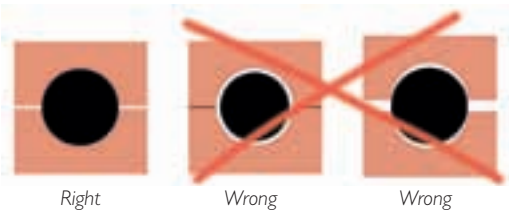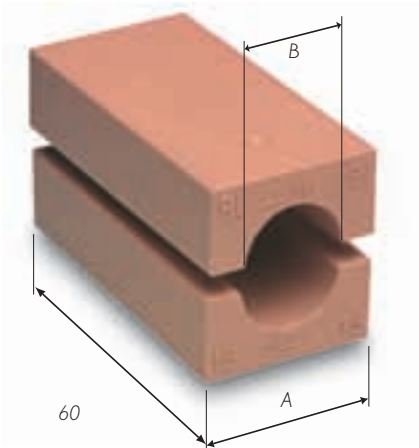
Spare blocks

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)	SPARE BLOCKS
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

INSERT BLOCKS
Size in mm

CABLE DIAM.	A/B 15	A/B 20	A/B 30	A/B 40	B
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
24.5-25.5				40/24	24

CABLE DIAM.	A/B 40	A/B 60	A/B 90	B
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

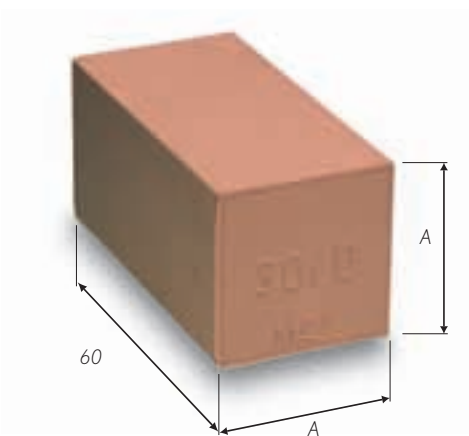| CABLE DIAM.	A/B 90	A/B 120	B
55.5-57.5	90/56		56
57.5-59.5	90/58		58
59.5-61.5	90/60		60
61.5-63.5	90/62		62
63.5-65.5	90/64		64
65.5-67.5	90/66		66
67.5-69.5	90/68		68
69.5-71.5	90/70		70
71.5-73.5		120/72	72
73.5-75.5		120/74	74
75.5-77.5		120/76	76
77.5-79.5		120/78	78
79.5-81.5		120/80	80
81.5-83.5		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
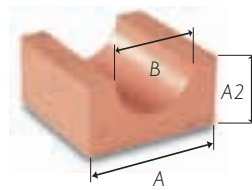
Blocks are referred to by their width (A) and hole diameter (B). Thus a module with a width of 15 mm and a hole diameter of 4 mm is referred to as 15/4.

Weight in grams per half

| BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT	BLOCK	WEIGHT
24 x 5/0	58	20/11	13	30/23	22	60/48	84	120/76	472
12 x 10/0	113	20/12	13	30/24	21	60/50	77	120/78	462
15/0	20	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
		30/13	36	40/32	37	90/56	262	120/90	385
		30/14	35	40/34	32	90/58	255	120/92	368
		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

AddBlocks

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.
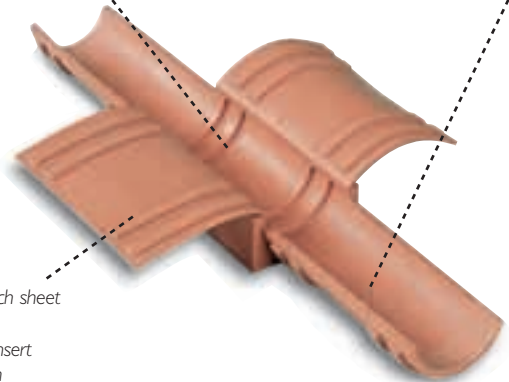
Eleven blocks and 66 dimensions
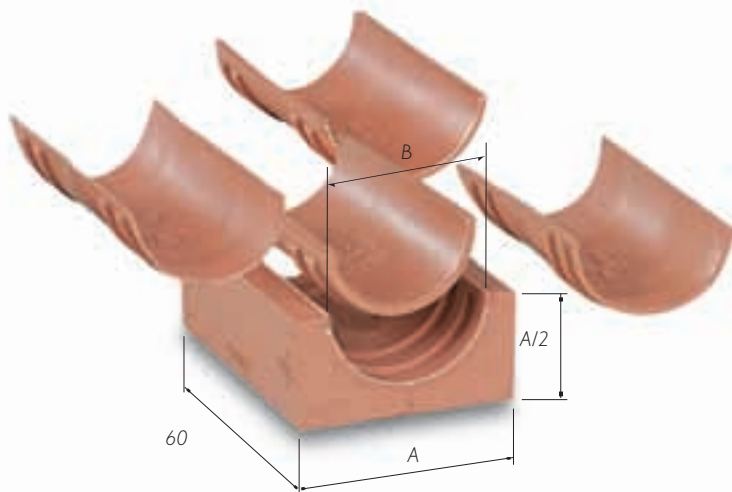
AddBlocks are all the same length as standard blocks, 60 mm. The width of standard blocks (A measurement, see table) are 20, 30, 40, 60 or 90 mm.

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

*) A =20   B =4 - 8

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 69/39-43

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.
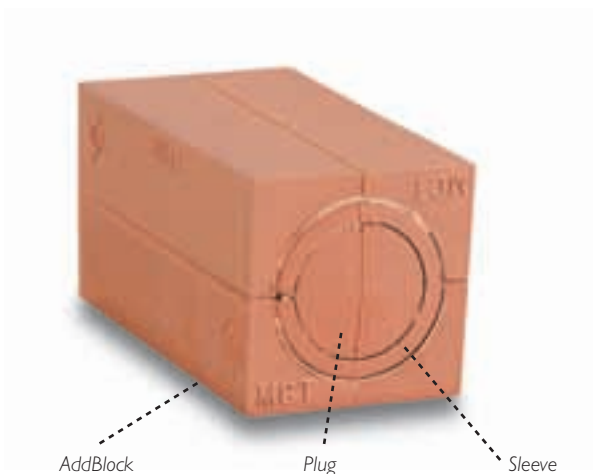
Plug

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*

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

30/15

U-40

40

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.
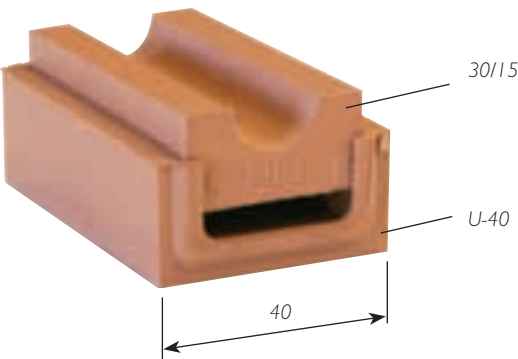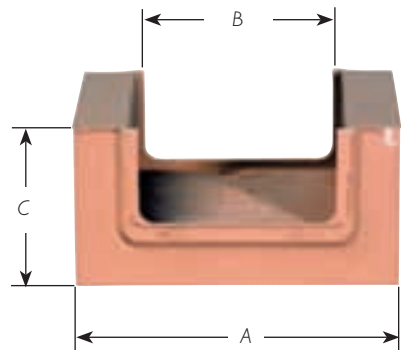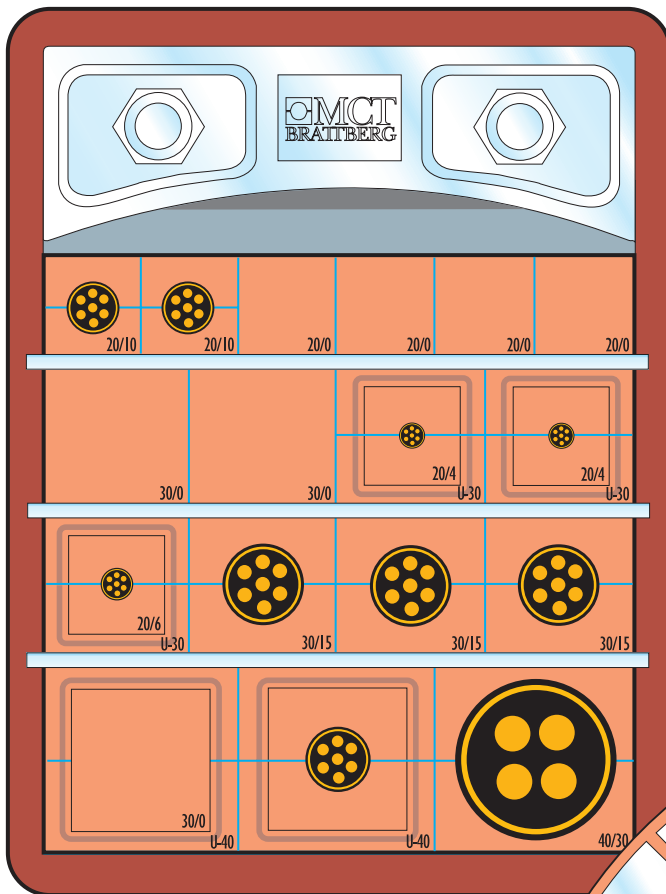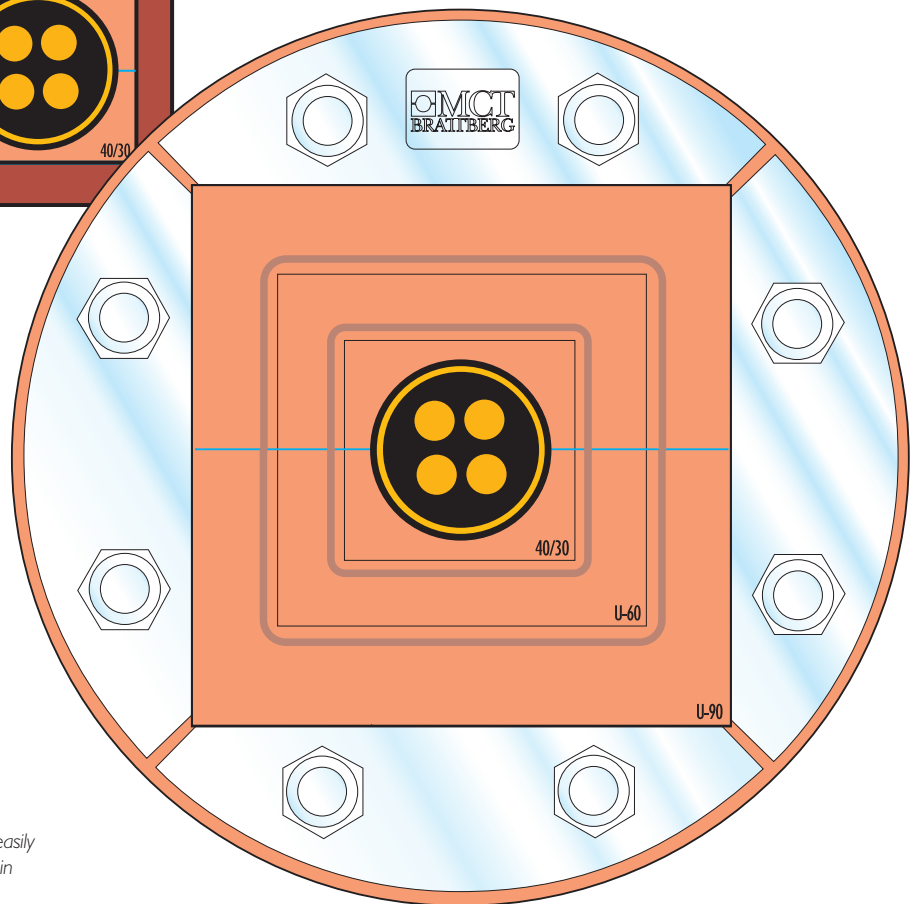

| U-30 | U-40 | U-60 | U-90 | U-120 |

B

C

A

Size 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/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

120
60
130
Polystyrene casting form
Fig. 6
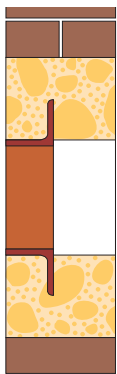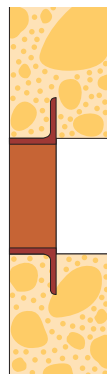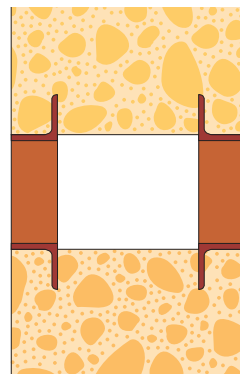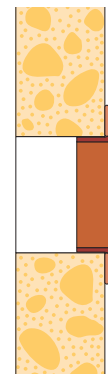
frame   Stay plate
5 mm
120
130
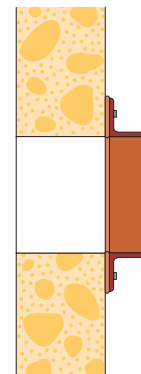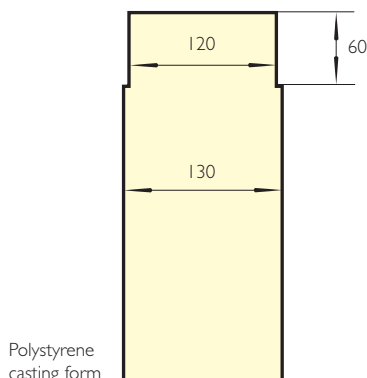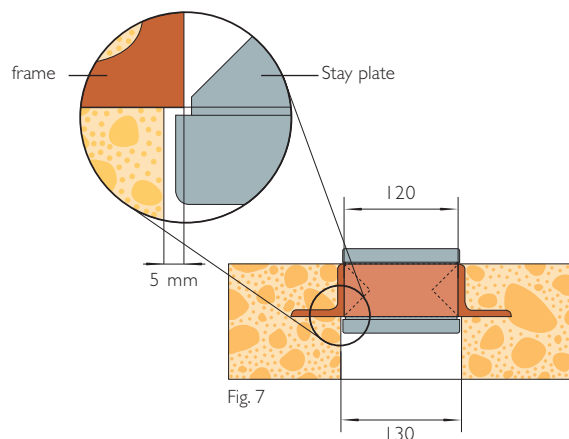Fig. 7

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 9).
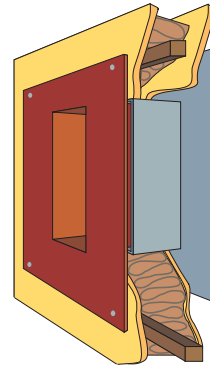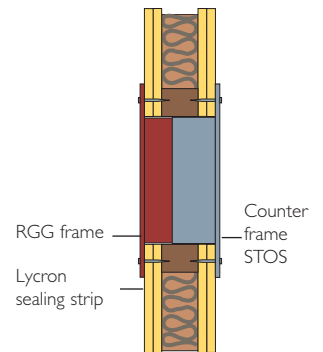
RGG frame

Counter frame
STOS

Lycron sealing strip

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.
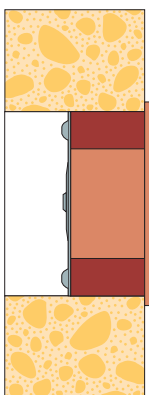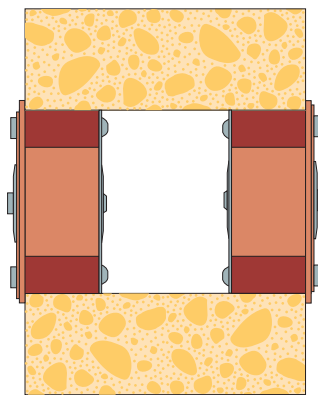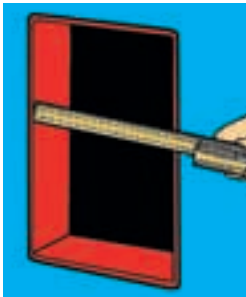
MCT Brattberg's casting form.

Fig. 10

Fig. 11

Assembly and installation instructions

1 *Measure the opening to ensure that its size conforms with tolerance standards 120,5 mm ± 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.

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.*
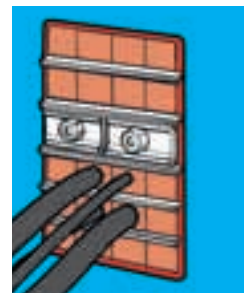
PTG PRESSURE WEDGE

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

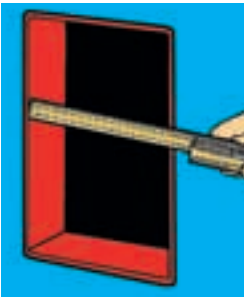**5** *Fit first the PTG presswedge at top of the frame. Insert then the last row of blocks.*

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 mm ±0,5.

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

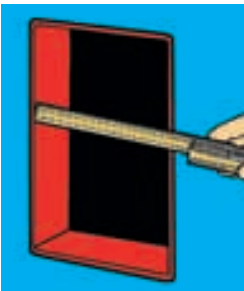Tear off attached sheet to fit the dimension selected.

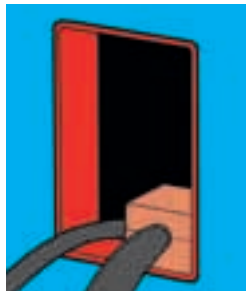Place sheet into centre slot and affix it with the unique locking device.

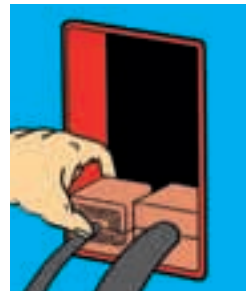Tear off superfluous sheets.

U-Block

Measure the opening to ensure that its size conforms with tolerance standards 120,5 mm ±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 i adjustable - all thanks to the wraparound casing.
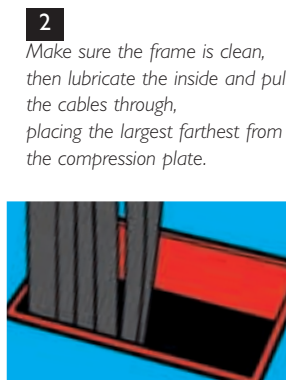

Place the plug in the AddBlock and make sure the locking devices secure it in place.

Horizontal installation

1

*Measure the opening to ensure that its size conforms with tolerance standards 120,5 mm ±0,5.*

2

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

3

In horizontal installations, gravity makes it necessary to use the stayplates to hold the insert blocks in place. Therfore, 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.


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.

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.
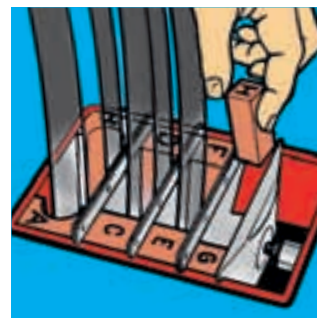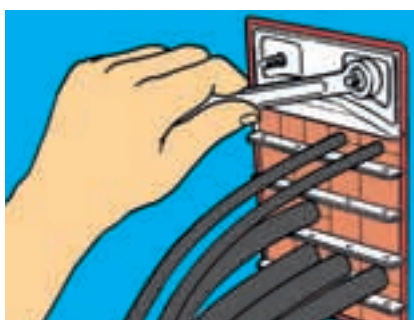
6

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.
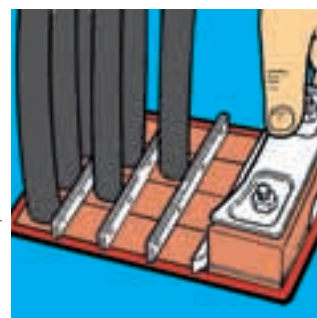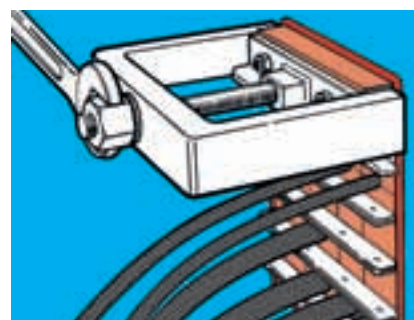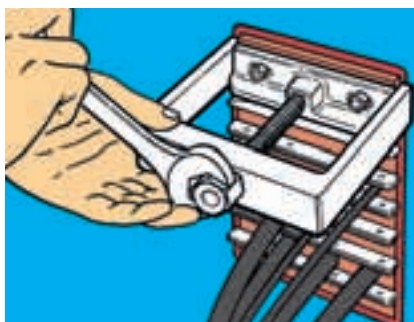

Disassembling

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 from the endpacking.

3

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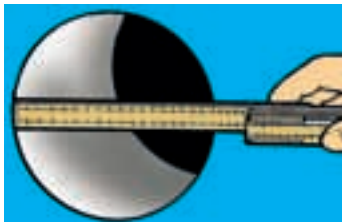

4

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.
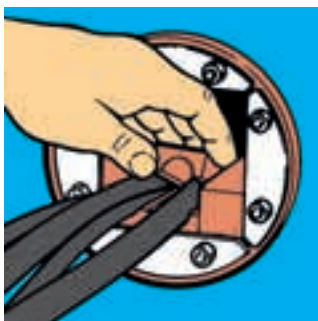

3

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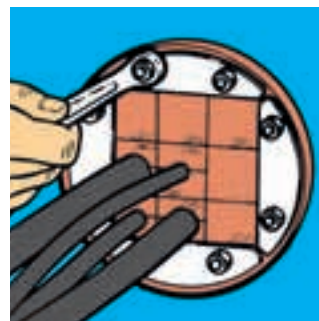

4

Begin packing.

5

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

PRESSURE APPLICATIONS RGP

Clean the inside of the pipe and the outside of the RGP prior to installtion, but apply no lubricant to either surface.

Lubricate all the Lycron parts carefully with the MCT Brattberg lubricant.

The RGP 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.

Test pressure 4.5 bar. In the case of higher pressure, please contact MCT Brattberg.

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

MCT BRATTBERG

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