

Special documentation

Clamping device FHG61

For rectangular and diagonally irradiated pipes

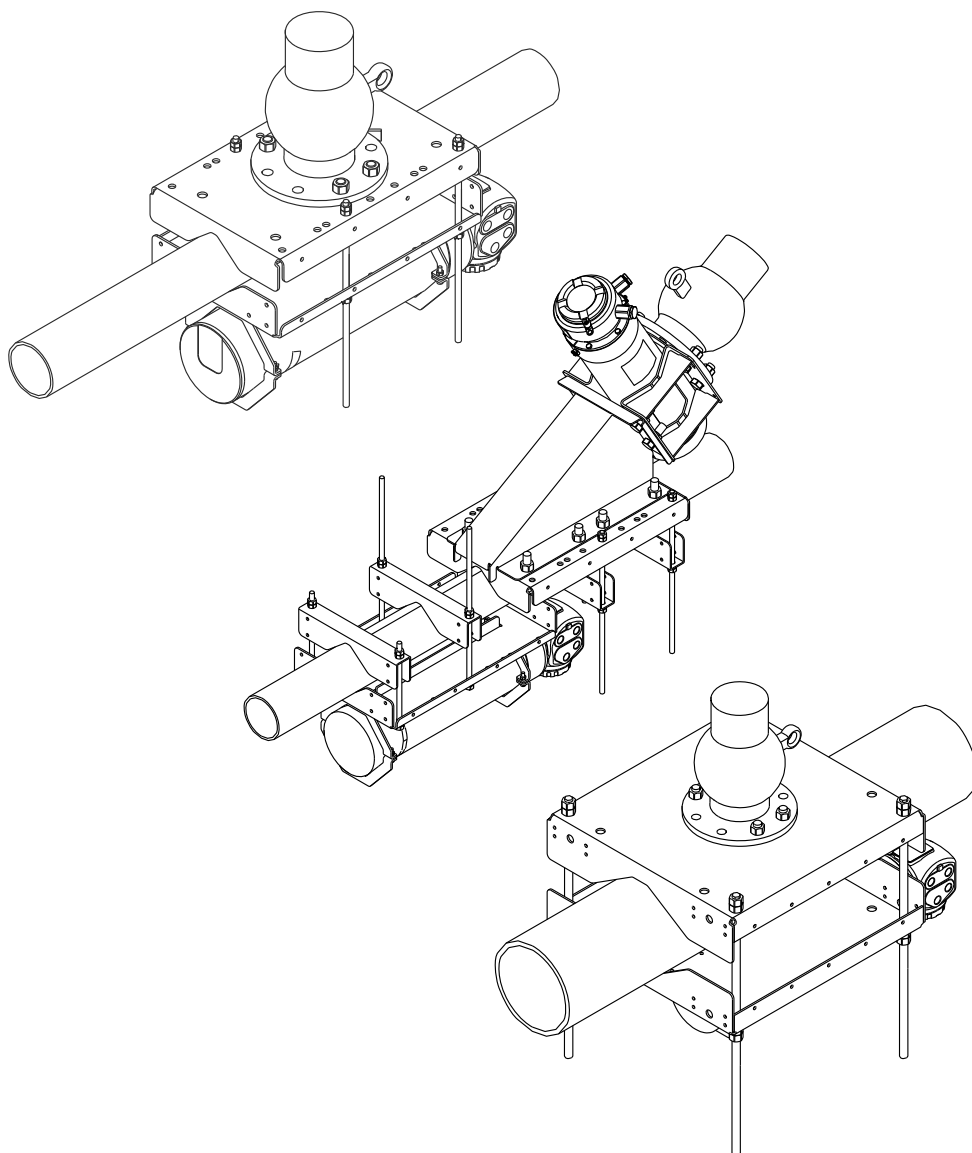


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1 About this document

1.1 Document function



This document describes the individual components of the mounting device FHG61 for the application using the help of the standard FMG60.

1.2 Symbols

1.2.1 Safety symbols

Symbol	Meaning
 A0011189-DE	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
 A0011190-DE	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
 A0011191-DE	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
 A0011192-DE	NOTICE! This symbol contains information on procedures and other facts which do not result in personal injury.

1.2.2 Symbols for certain types of information

Symbol	Meaning
 A0011193	Tip Indicates additional information.
 A0015494	Reference to page Refers to the corresponding page number.

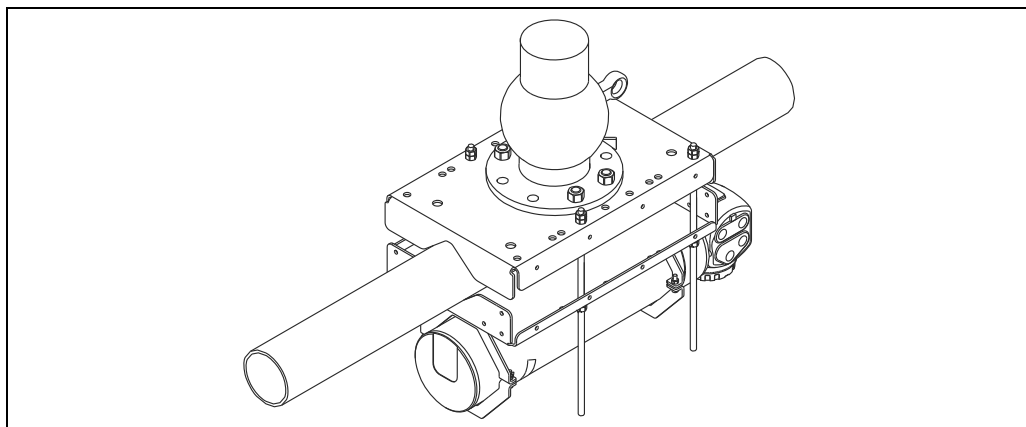
1.2.3 Symbols in graphics

Symbol	Meaning
1, 2, 3, 4, ...	Item numbers
A, B, C, D, ...	Views

2 Applications

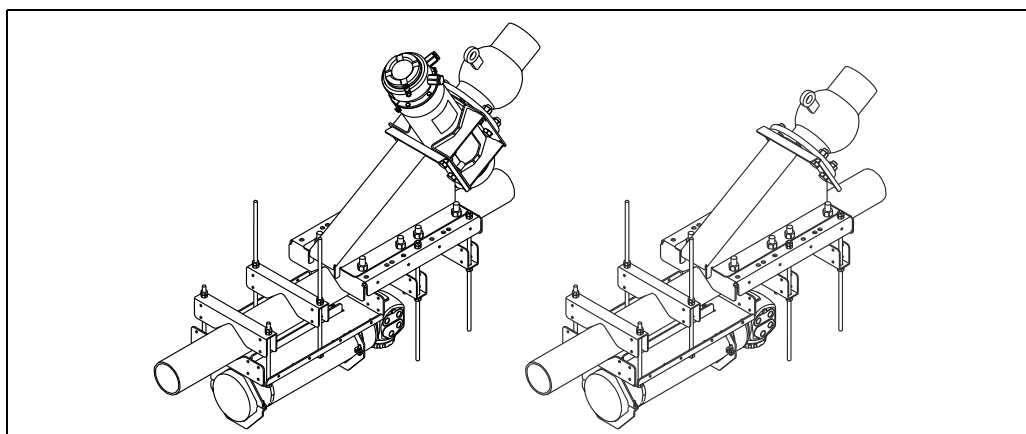
2.1 Pipes with $\varnothing 50$ to 220 mm (1.97 to 8.66 in)

2.1.1 Rectangular irradiated pipes



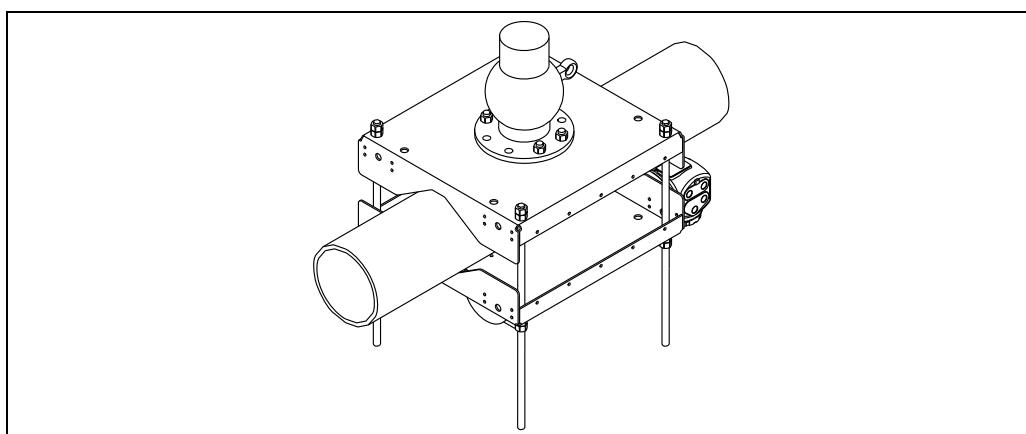
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2.1.2 Diagonally irradiated pipes



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2.2 Pipes with $\varnothing 200$ to 420 mm (7.87 to 16.5 in)

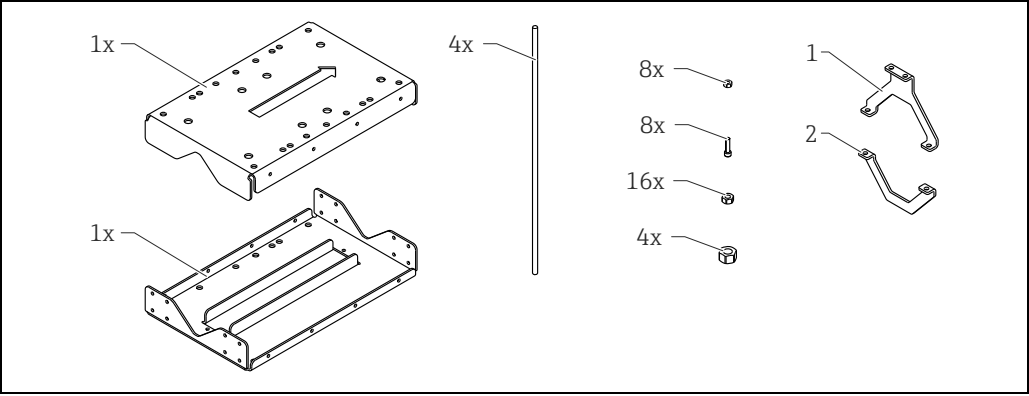


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3 Components

3.1 Pipes with ø50 to 220 mm (1.97 to 8.66 in)

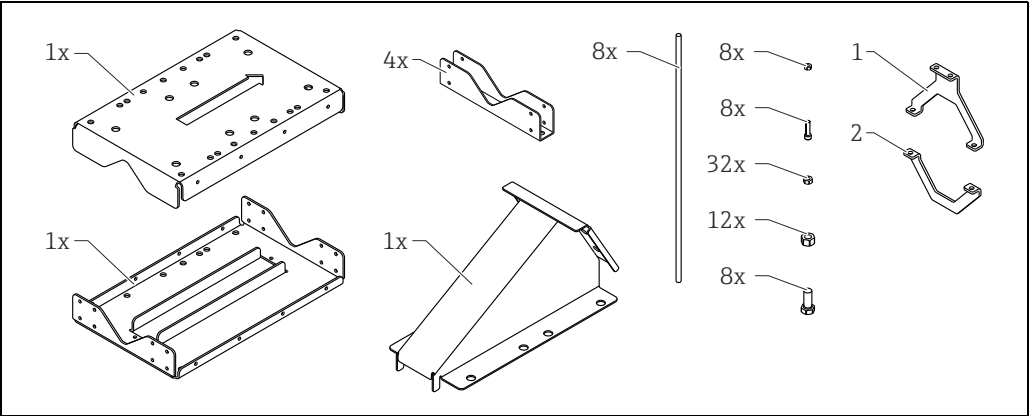
3.1.1 Rectangular irradiated pipes



1, 2 Depending on the version of the FMG60, see SD01202F/00/EN

Part	Material
Screws and nuts	A4
All other parts	316L (1.4404)

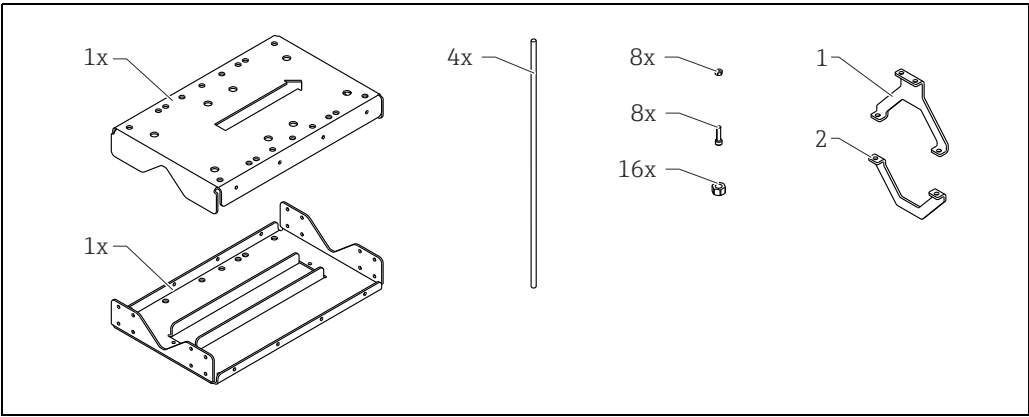
3.1.2 Diagonally irradiated pipes



1, 2 Depending on the version of the FMG60, see SD01202F/00/EN

Part	Material
Screws and nuts	A4
All other parts	316L (1.4404)

3.2 Pipes with ø200 to 420 mm (7.87 to 16.5 in)



1, 2 Depending on the version of the FMG60, see SD01202F/00/EN

Part	Material
Screws and nuts	A4
All other parts	316L (1.4404)

4 Mounting

▲ CAUTION

Mount the clamp device first, the source container and the FMG60 afterwards. In order to avoid injuries, shorten the threaded rods if they are projecting.

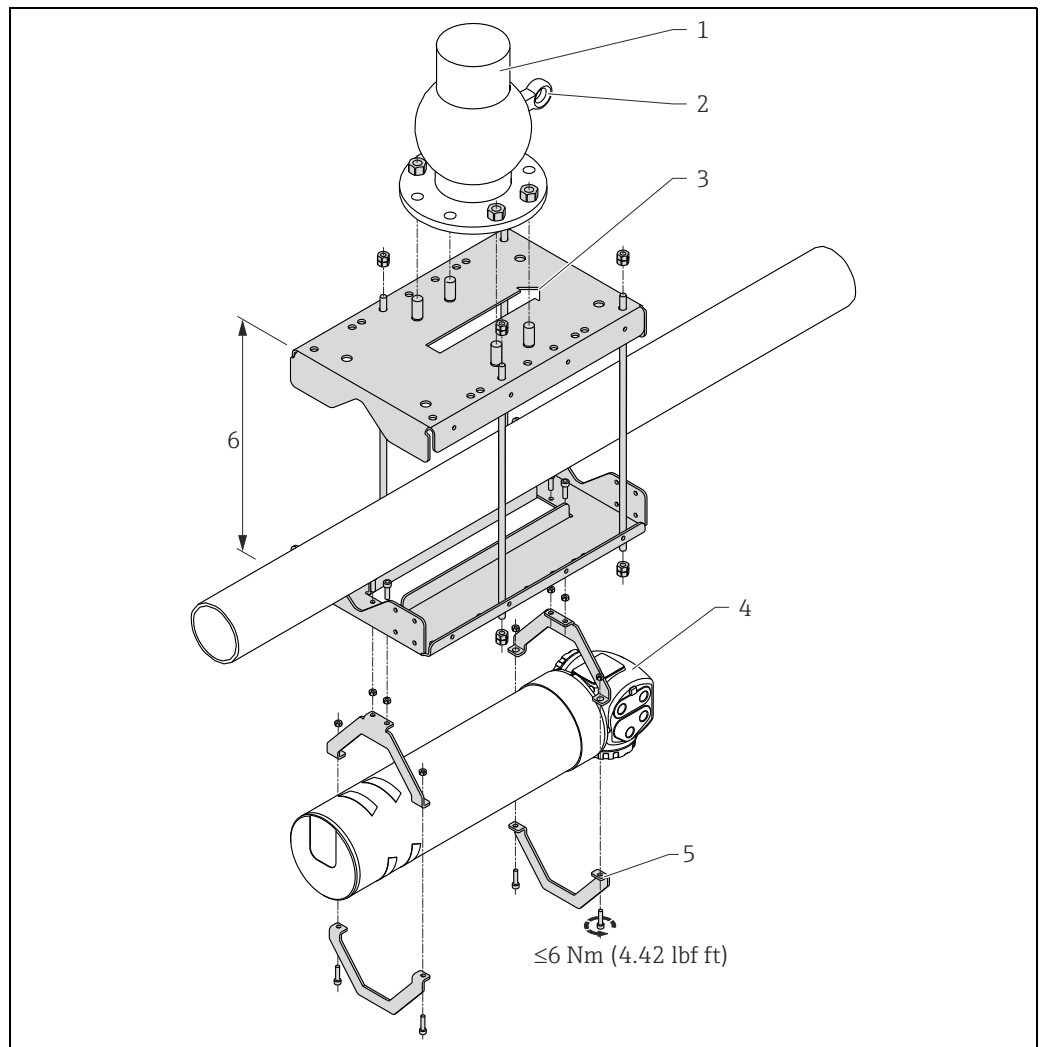
4.1 Pipes with $\varnothing 50$ to 220 mm (1.97 to 8.66 in)

4.1.1 Rectangular irradiated pipes



On mounting observe the following:

- "Mounting position of the Gammapilot M FMG60", → 10ff.
- Note alignment of the eyebolt of the source container in terms of the cut-out in the mounting bracket.
- Mounting position of the parts (see the following figure).



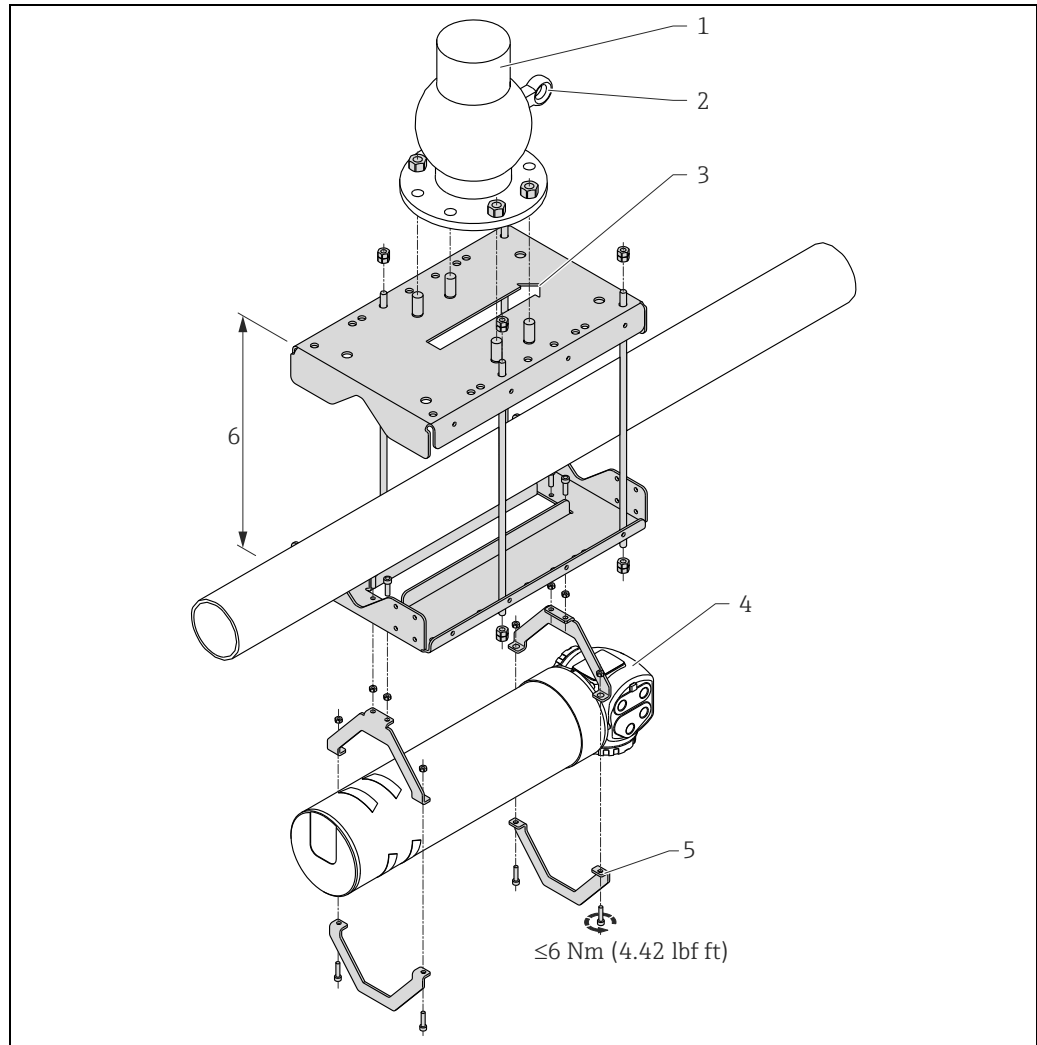
- 1 Source container
- 2 Eyebolt
- 3 Mounting bracket; Alignment of the eyebolt in terms of the cut-out in the mounting bracket
- 4 Gammapilot M FMG60
- 5 Mounting position of the pipe bracket as shown!
- 6 Align parallel

4.1.2 Diagonally irradiated pipes



On mounting observe the following:

- "Mounting position of the Gammapiot M FMG60", → 10ff.
- Note alignment of the eyebolt of the source container in terms of the cut-out in the mounting bracket.
- "Distance of the baseplates", → 12.
- Mounting position of the parts (see the following figure).



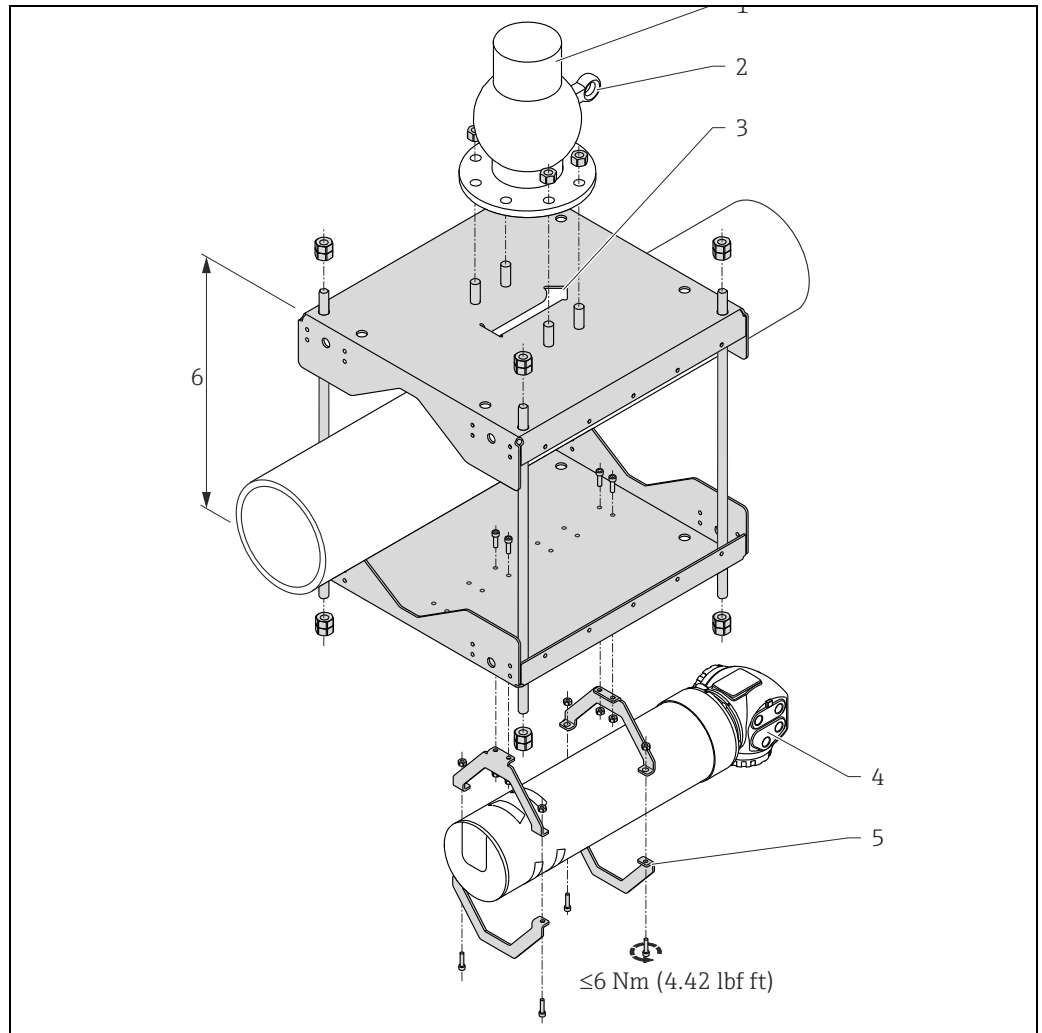
- 1 Source container
- 2 Eyebolt
- 3 Modulator (option)
- 4 Position emitter box
- 5 Mounting bracket; Alignment of the eyebolt in terms of the cut-out in the mounting bracket
- 6 Gammapiot M FMG60
- 7 Mounting position of the pipe bracket as shown!
- 8 Align parallel

4.2 Pipes with $\varnothing 200$ to 420 mm (7.87 to 16.5 in)



On mounting observe the following:

- "Mounting position of the Gammapiilot M FMG60", → 10ff.
- Note alignment of the eyebolt of the source container in terms of the cut-out in the mounting bracket.
- Mounting position of the parts (see the following figure).



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- 1 Source container
- 2 Eyebolt
- 3 Mounting bracket; Alignment of the eyebolt in terms of the cut-out in the mounting bracket
- 4 Gammapiilot M FMG60
- 5 Mounting position of the pipe bracket as shown!
- 6 Align parallel

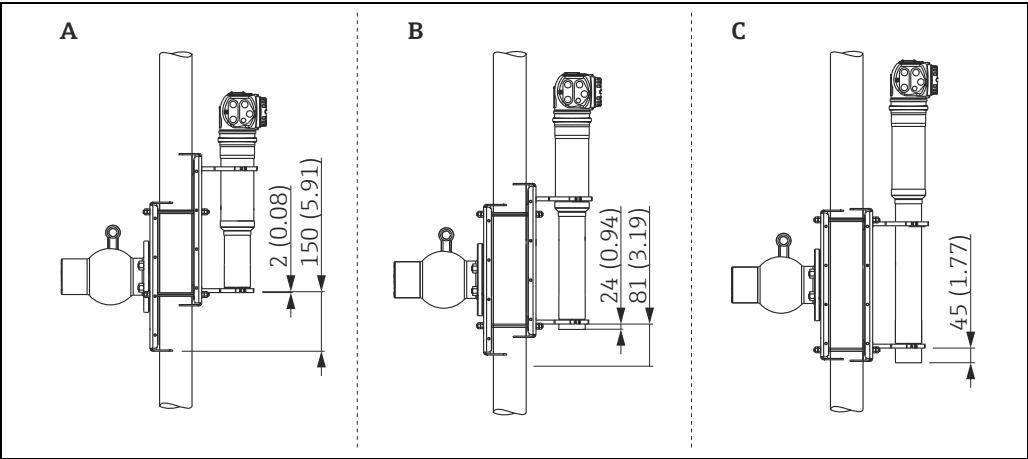
5 Mounting position of the Gammapiot M FMG60

i Preferable mounting position: with the compartment housing to the top.
If this is not possible, support the Gammapiot M FMG60 to prevent it from gliding.

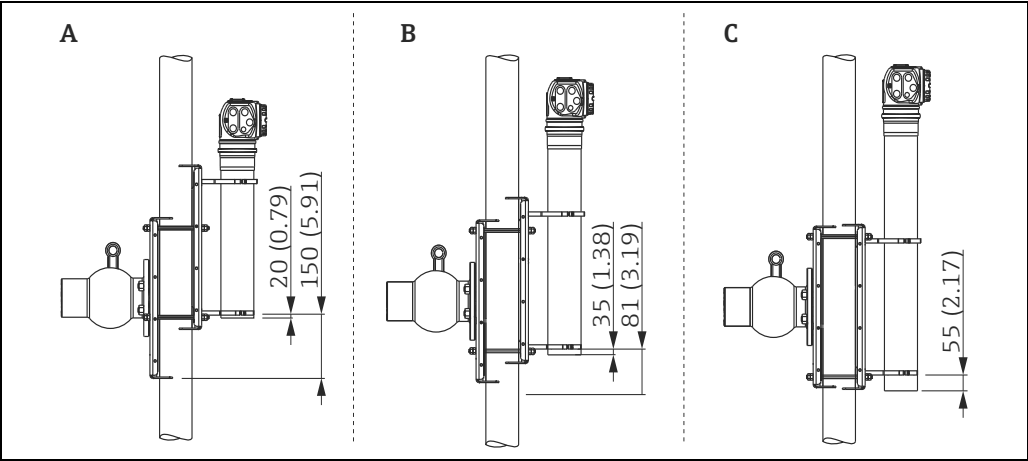
5.1 Pipes with ø50 to 220 mm (1.97 to 8.66 in)

5.1.1 Rectangular irradiated pipes



Standard design

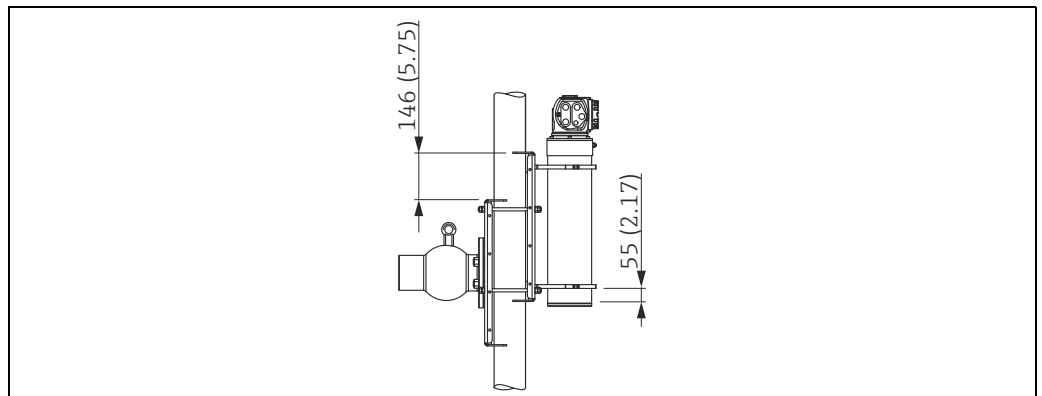


With water cooling jacket



Crystal with collimator



 For the right alignment of the collimator see "Alignment of the collimator - radiation window", →  14.

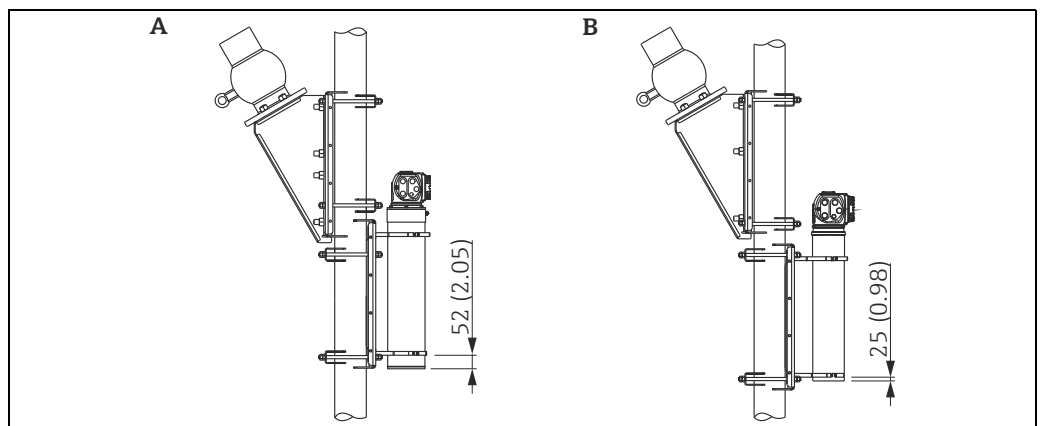


Dimensions: mm (in)

5.1.2 Diagonally irradiated pipes

Crystal with collimator or water cooling jacket

 For the right alignment of the collimator see "Alignment of the collimator - radiation window", →  14.

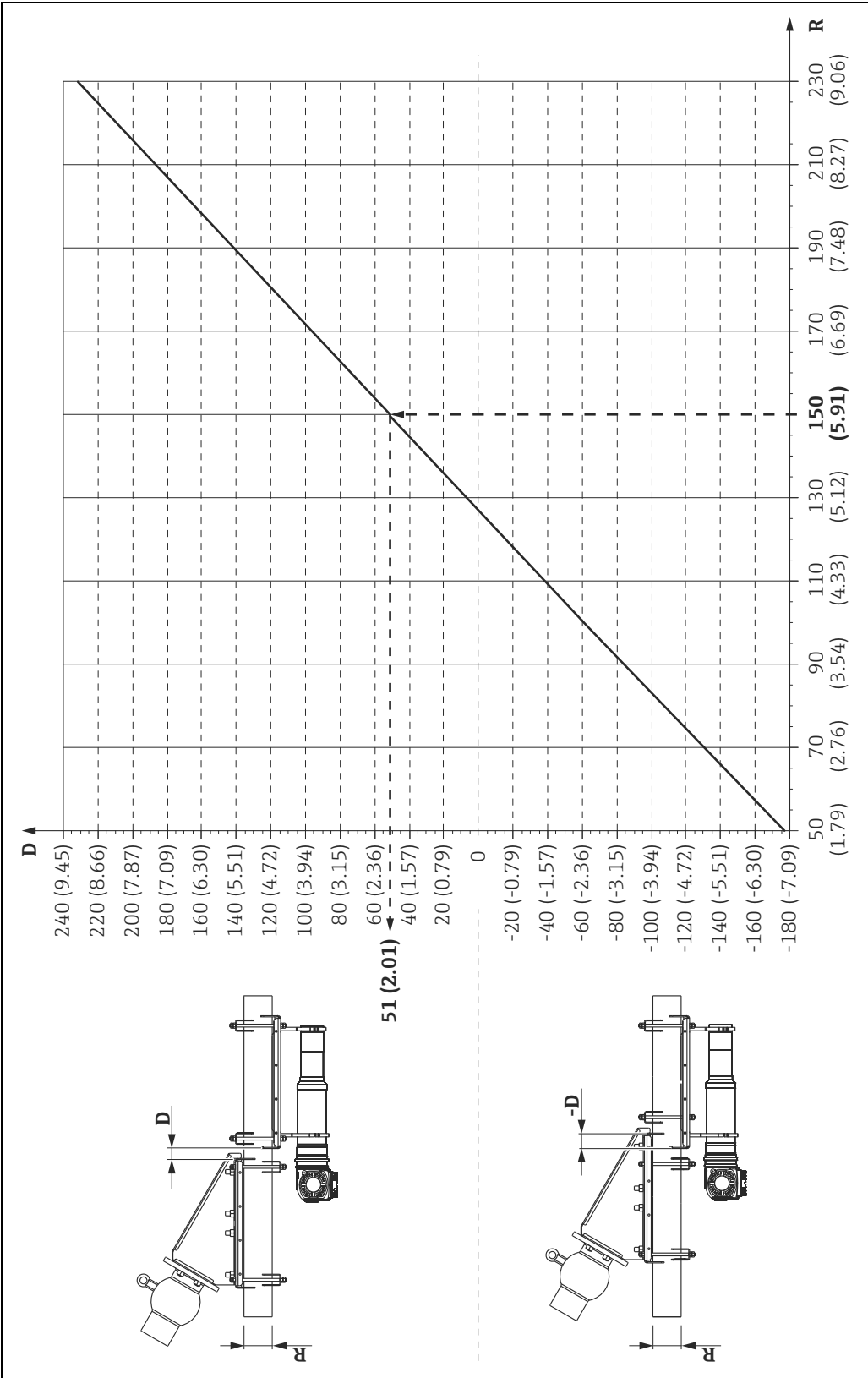


Dimensions: mm (in)

A Crystal with collimator
B Crystal with water cooling jacket

Distance of the baseplates

Example: pipe diameter R = 150 mm (5.91 in); Distance D = 51 (2.01 in).

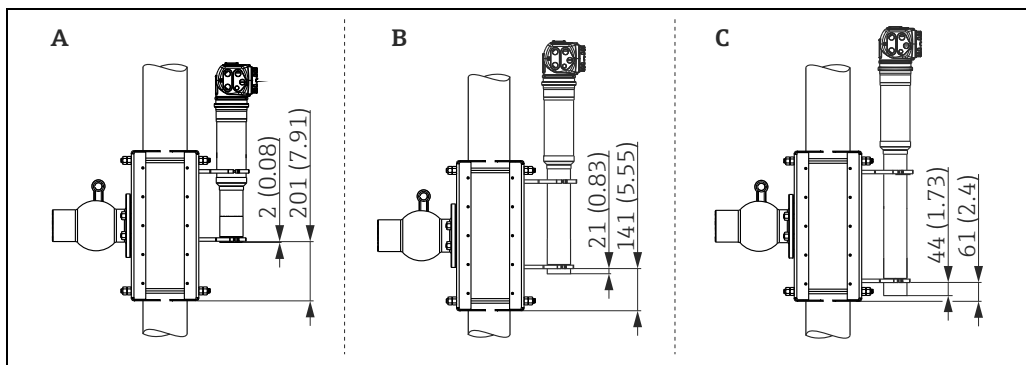


Dimensions: mm (in)

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5.2 Pipes with $\varnothing 200$ to 420 mm (7.87 to 16.5 in)

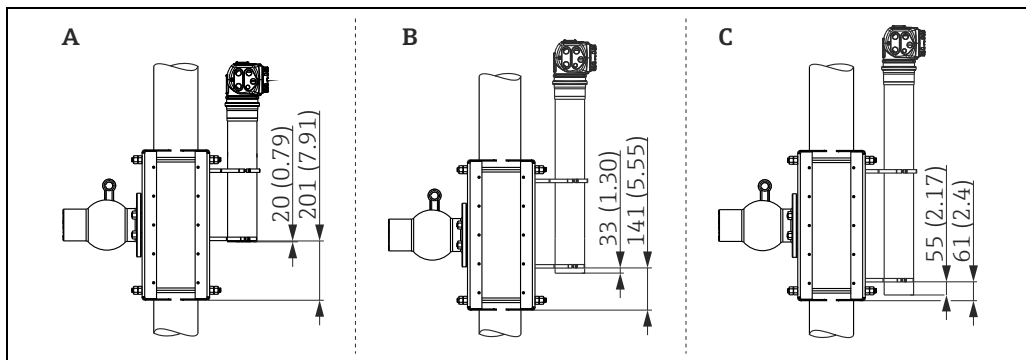
Standard design



Dimensions: mm (in)

- A Crystal NaJ
 B Scintillator 200 mm (7.87 in)
 C Scintillator 400 mm (15.7 in)

With water cooling jacket or collimator



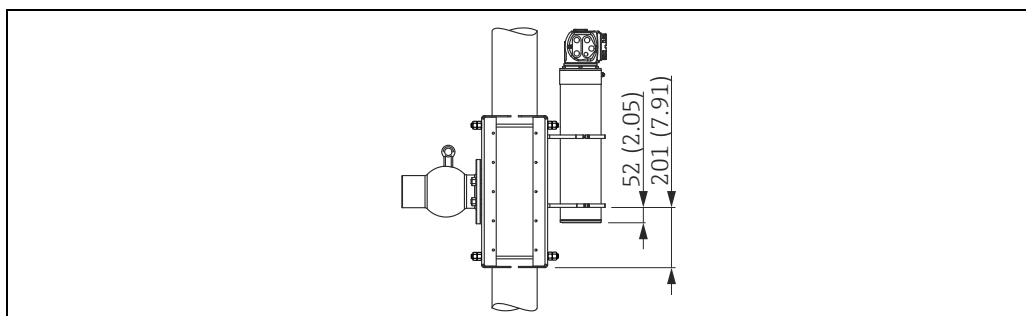
Dimensions: mm (in)

- A Crystal NaJ
 B Scintillator 200 mm (7.87 in)
 C Scintillator 400 mm (15.7 in)

Crystal with collimator

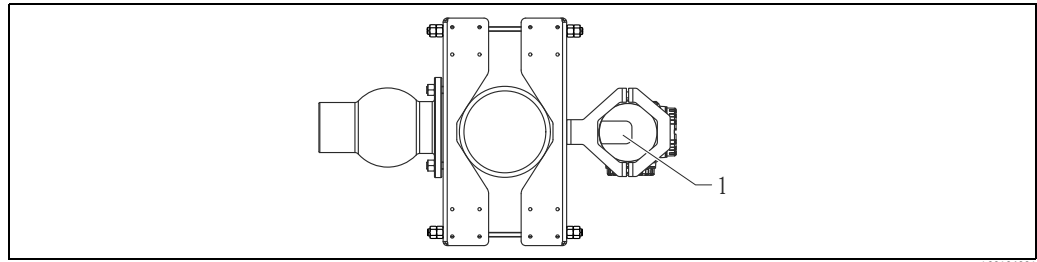


For the right alignment of the collimator see "Alignment of the collimator - radiation window", → 14.



Dimensions: mm (in)

5.3 Alignment of the collimator - radiation window



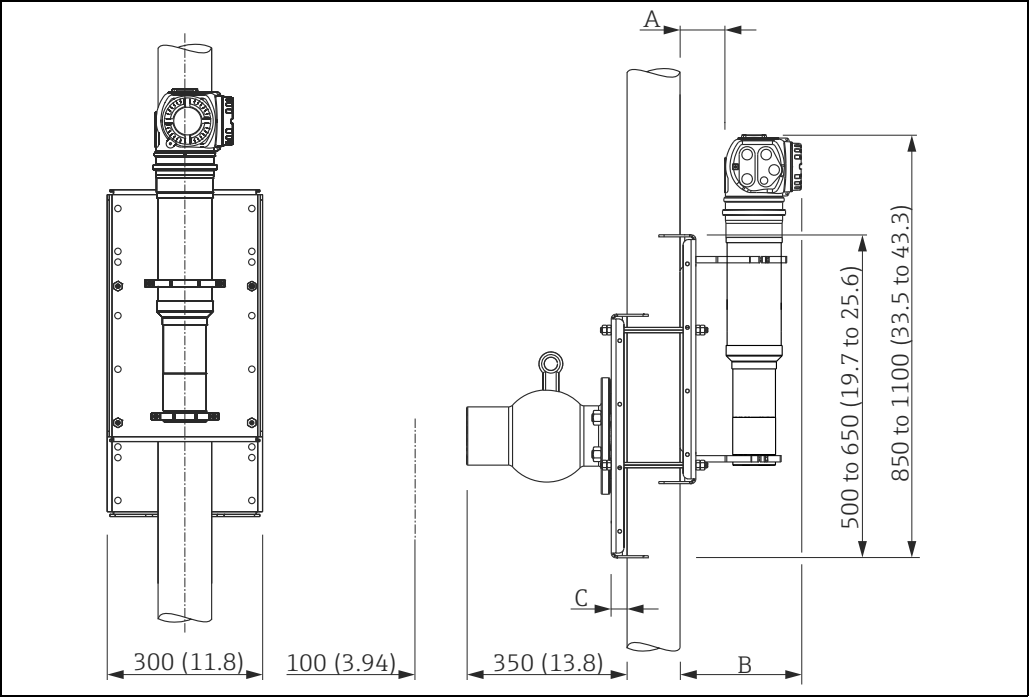
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1 Radiation window

6 Dimensions of the Gammapilot M FMG60

6.1 Pipes with ø50 to 220 mm (1.97 to 8.66 in)

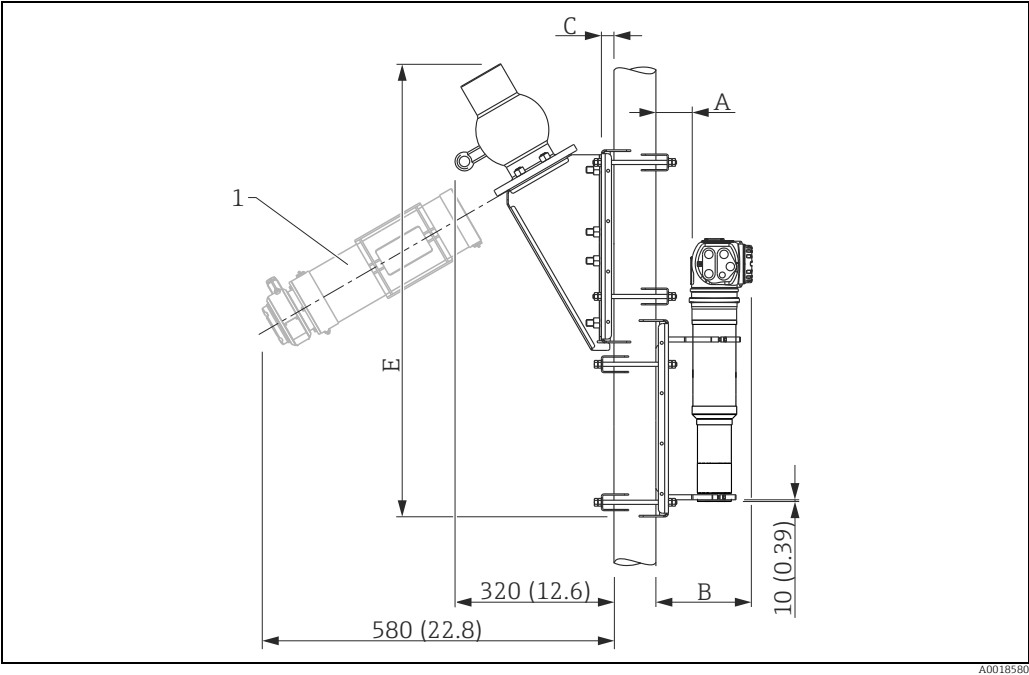
6.1.1 Rectangular irradiated pipes



Dimensions: mm (in)

Pipe ø [mm (in)]	50 (1.97)	60 (2.36)	80 (3.15)	100 (3.94)	120 (4.72)	150 (5.91)	200 (7.87)
A [mm (in)]	80 (3.15)	80 (3.15)	80 (3.15)	85 (3.35)	90 (3.54)	90 (3.54)	100 (3.94)
B [mm (in)]	240 (9.45)	240 (9.45)	240 (9.45)	245 (9.65)	250 (9.84)	250 (9.84)	260 (10.2)
C [mm (in)]	20 (0.79)	25 (0.98)	30 (1.18)	30 (1.18)	30 (1.18)	40 (1.57)	45 (1.77)

6.1.2 Diagonally irradiated pipes



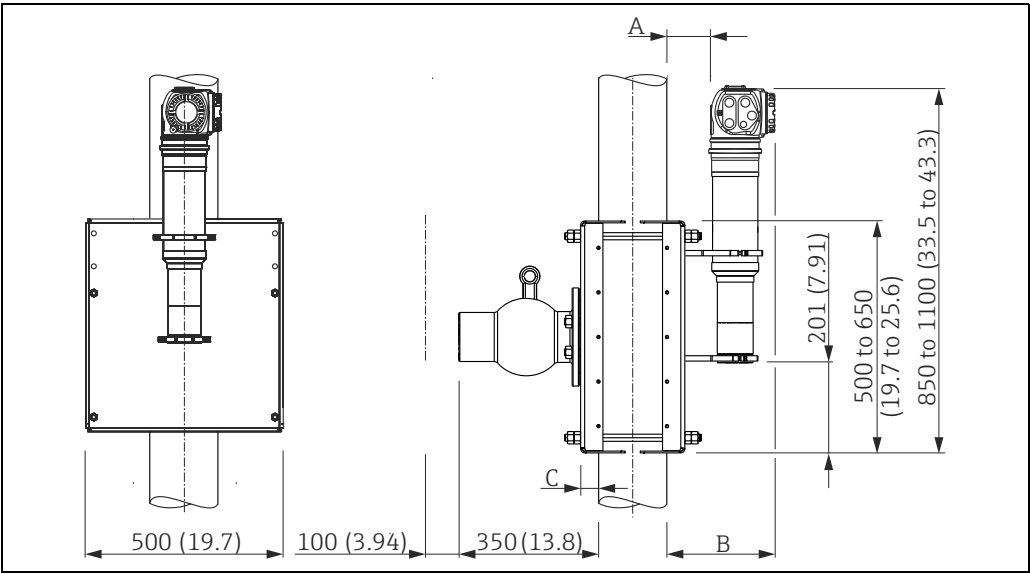
Dimensions: mm (in)

1 Modulator FHG65 (option)

Pipe ø [mm (in)]	50 (1.97)	60 (2.36)	80 (3.15)	100 (3.94)	120 (4.72)	150 (5.91)	200 (7.87)
A [mm (in)]	80 (3.15)	80 (3.15)	80 (3.15)	85 (3.35)	90 (3.54)	90 (3.54)	100 (3.94)
B [mm (in)]	240 (9.45)	240 (9.45)	240 (9.45)	245 (9.65)	250 (9.84)	250 (9.84)	260 (10.2)
C [mm (in)]	20 (0.79)	25 (0.98)	30 (1.18)	30 (1.18)	30 (1.18)	40 (1.57)	45 (1.77)
E ¹⁾ [mm (in)]	1100 (43.3)	1125 (44.3)	1170 (46.1)	1215 (47.8)	1260 (49.6)	1330 (52.4)	1440 (56.7)
E ²⁾ [mm (in)]	840 (33.1)	860 (33.9)	905 (46.1)	950 (37.4)	995 (39.2)	1064 (41.9)	1180 (46.5)

- 1) with FHG65
- 2) without FHG65

6.2 Pipes with ø200 to 420 mm (7.87 to 16.5 in)



Pipe ø [mm (in)]	200 (7.87)	250 (9.84)	300 (11.8)	350 (13.8)	400 (15.7)
A [mm (in)]	95 (3.74)	100 (3.94)	100 (3.94)	110 (4.33)	110 (4.33)
B [mm (in)]	255 (10)	260 (10.2)	260 (10.2)	270 (10.6)	270 (10.6)
C [mm (in)]	35 (1.38)	40 (1.57)	45 (1.77)	50 (1.97)	55 (2.17)

7 Ordering information

7.1 Product structure FHG61



This overview does not mark options which are mutually exclusive.
Option with * = in preparation

010	Pipe Diameter Source Container:
A	50-220 mm, FQG61/FQG62
B	200-420 mm, FQG61/FQG62
C	50-220 mm, FQG61/FQG62, 30 deg, diagonal radiation
D	*400-620 mm, FQG61/FQG62
E	48-77 mm outside, FQG60
F	80-273 mm outside, FQG60
Y	Special version, TSP-no. to be spec.
015	Mounting Clamp for Scintillator:
A	NaJ, 50 mm
B	PVT, 200 mm
C	PVT, 400 mm
D	NaJ, 50 mm + cooling tube/collimator / PVT, 200 mm/400 mm + cooling tube
Y	Special version, TSP-no. to be spec.
020	Material:
1	316L
2	*304
9	Special version, TSP-no. to be spec.
995	Marking:
1	Tagging (TAG), see additional spec.



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