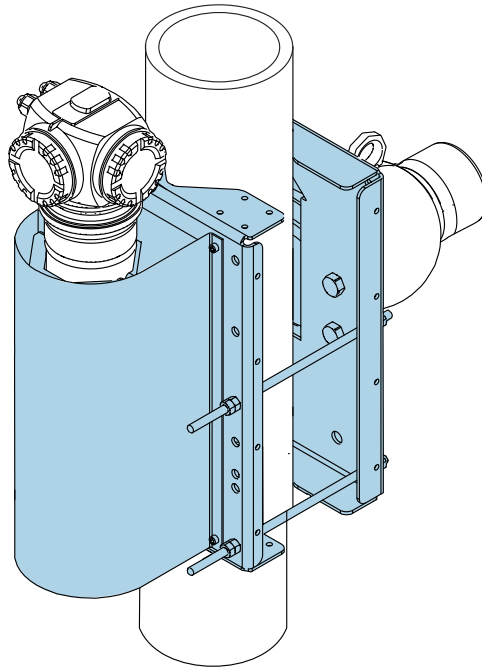


Special Documentation

FHG61

Clamping device for density measurement with protective guard

For pipes with diameters of 50 to 220 mm



1 About this document

1.1 Document function





This document describes the individual components of the clamping device used to secure a radiometric measuring system to pipes with diameters of 50 mm to 220 mm.

The radiometric measuring system comprises an FQG61 or FQG62 source container and the Gammapilot M FMG60.




The clamping device can optionally be ordered with a locking screw. This is used to additionally fix the position of the Gammapilot M FMG60.

1.2 Symbols used



1.2.1 Safety symbols

Symbol	Meaning
	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
	NOTE! 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
 A0011182	Permitted Indicates procedures, processes or actions that are allowed.
 A0011184	Forbidden Indicates procedures, processes or actions that are forbidden.
 A0011193	Tip Indicates additional information.

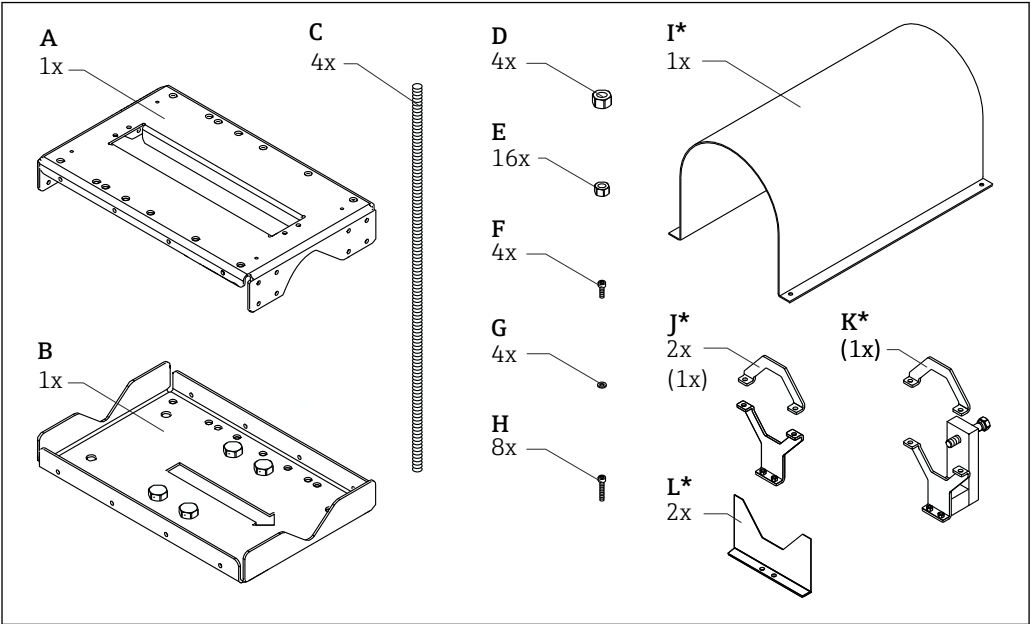
1.2.3 Symbols in graphics

Symbol	Meaning
	Series of steps
	Item numbers

1.2.4 Tools list

Symbol	Meaning
	AF 24 mm, AF 16 mm AF 18 mm (only for version with locking screw)
	AF 5 mm

2 Components



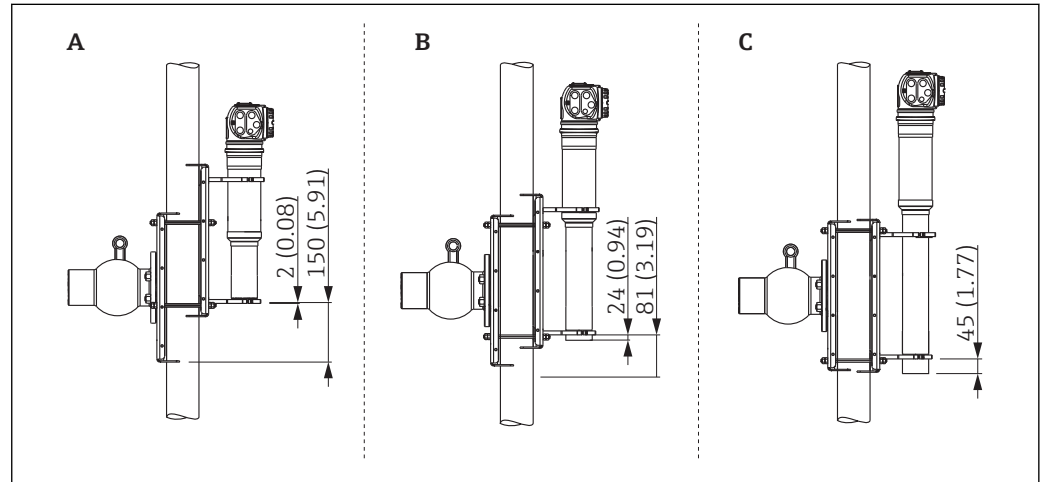
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Position	Component part	Material	Comments
A	Holding plate FMG60	316L (1.4404)	
B	Holding plate FQG61, FQG62	316L (1.4404)	
C	Threaded rods DIN976-1 M10	A4	
D	Nut DIN EN ISO4032 M16	A4	
E	Nut DIN EN ISO4032 M10	A4	
F	Screw DIN EN ISO4762 M6x10	A4	
G	Washer ISO7089 Ø6	A4	
H	Screw DIN EN ISO4762 M6x20	A4	
I	Protection cover	316L (1.4404)	
J	Bracket FMG60	316L (1.4404)	* depending on version
K	Bracket FMG60 with locking screw	316L (1.4404)	* depending on version
L	Protective cover	316L (1.4404)	* depending on version

3 Mounting position

- Preferred mounting position of the Gammapiilot M FMG60 with terminal head at the top.
If this is not possible, support the Gammapiilot M FMG60 to prevent it from slipping.
- Preferred mounting position of source container FQG61, FQG62 with lifting eye at the top.

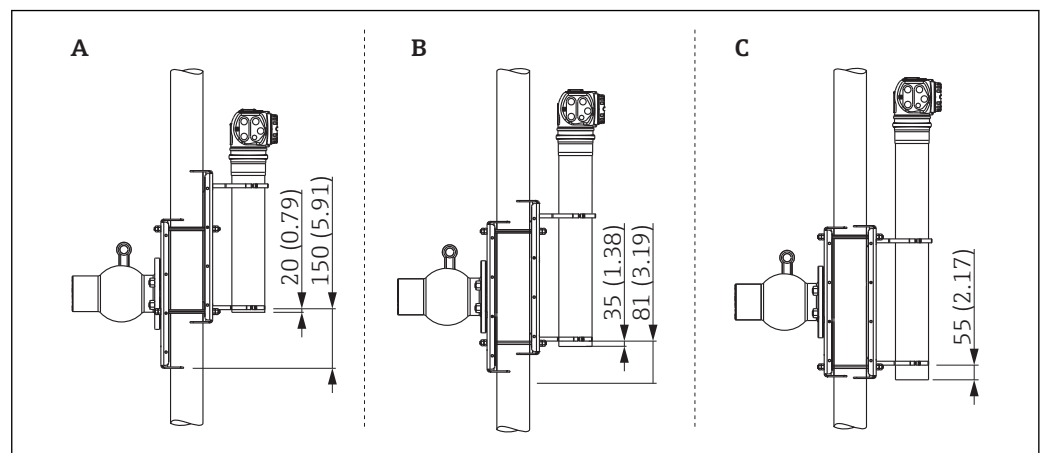
3.1 FMG60 without water cooling jacket or collimator



A0022267

- A NaI crystal
B Scintillator 200 mm
C Scintillator 400 mm

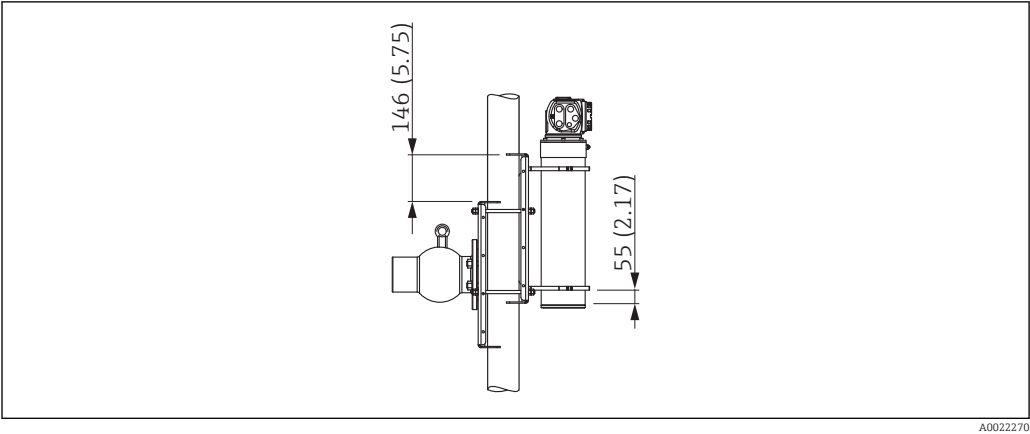
3.2 FMG60 with water cooling jacket or collimator



A0022271

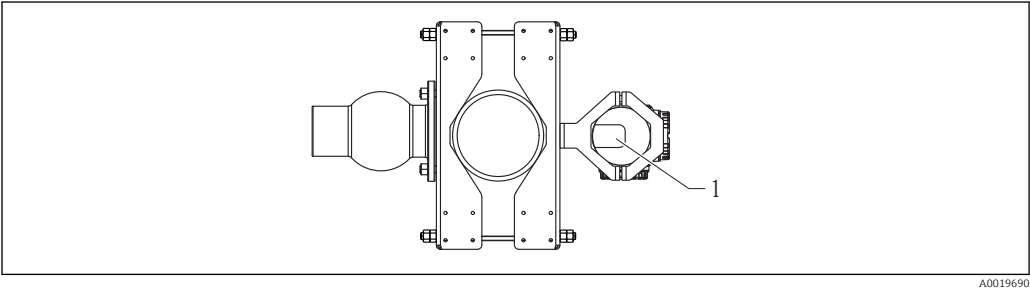
- A NaI crystal
B Scintillator 200 mm
C Scintillator 400 mm

3.3 Crystal with collimator



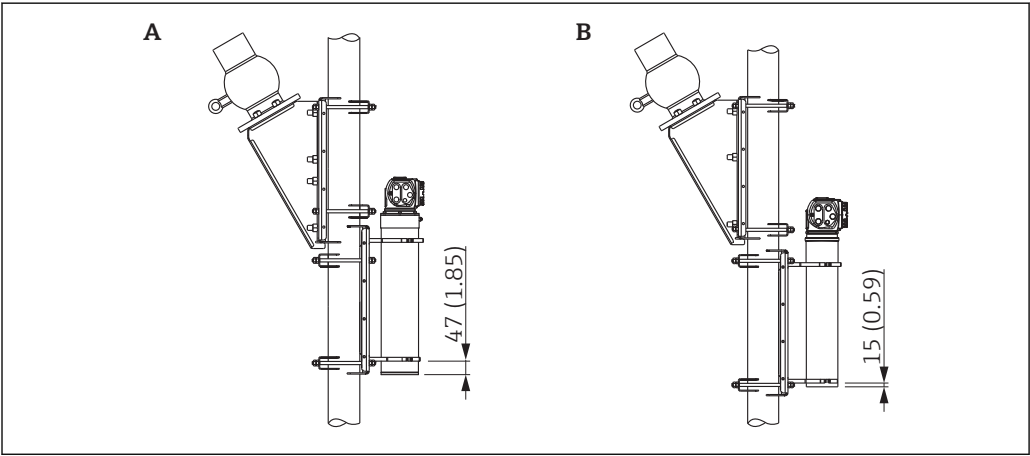
Dimensions: mm (in)

3.3.1 Alignment of the collimator - radiation window



1 Radiation window

3.4 Diagonal irradiation of pipes - crystal with collimator or water cooling jacket

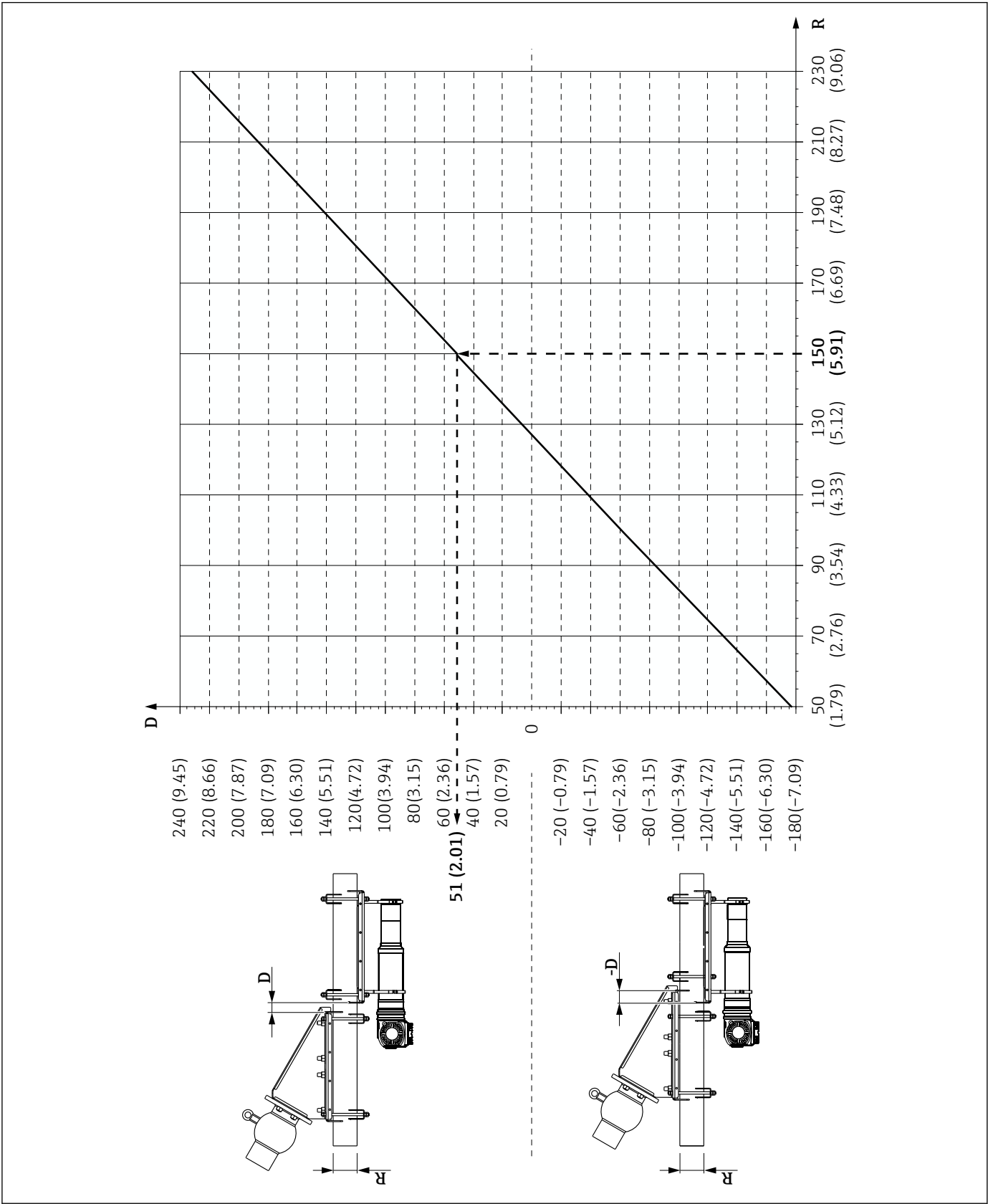


Dimensions: mm (in)

- A Crystal with collimator
- B Crystal with water cooling jacket

3.5 Distance of base plates

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

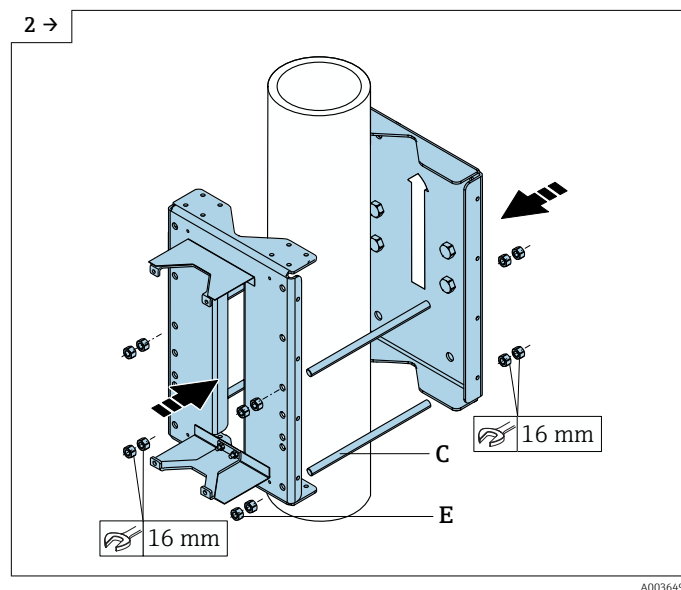
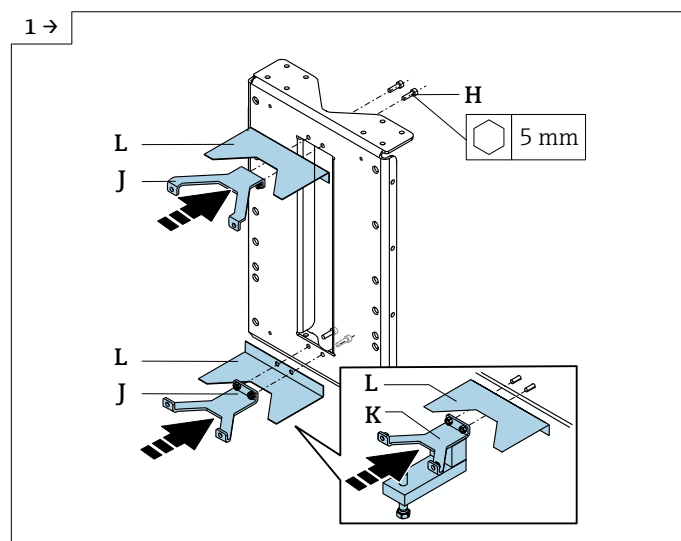


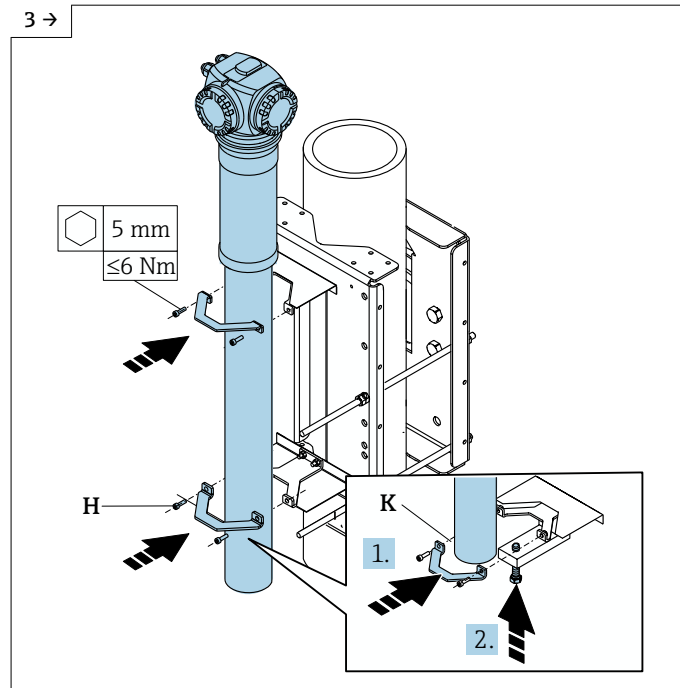
4 Installation

4.1 Mounting instructions

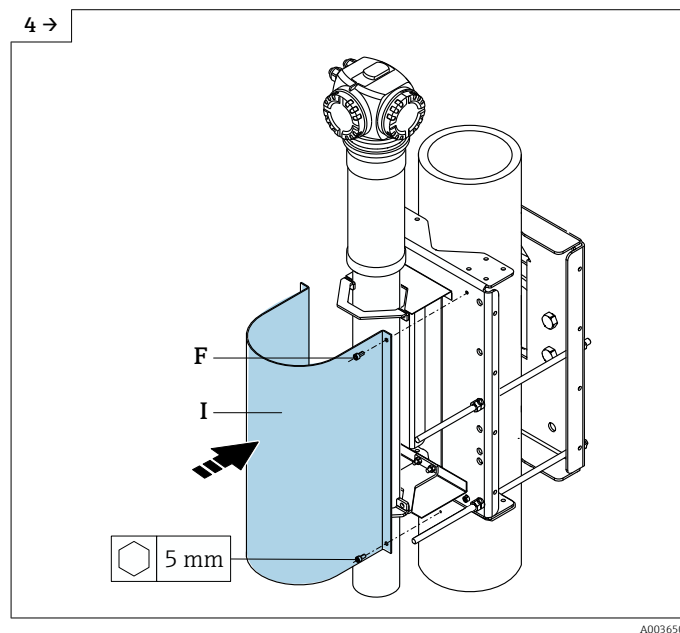
- Two people are required for installation.
- We recommend the use of hoists, as the individual components and measuring devices are very heavy.
- Always mount the clamping device first and then the measuring devices.
- Note the mounting position of the Gammapiot M FMG60 (section 3).
- Shorten any protruding threaded rods to avoid injury.
- In the case of the FQG61 and FQG62, ensure that the lifting eye bolt is aligned.

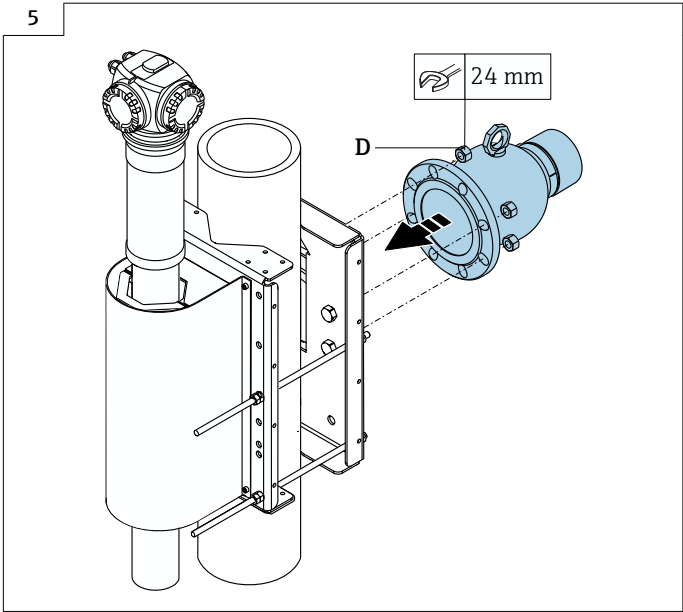
4.2 Procedure



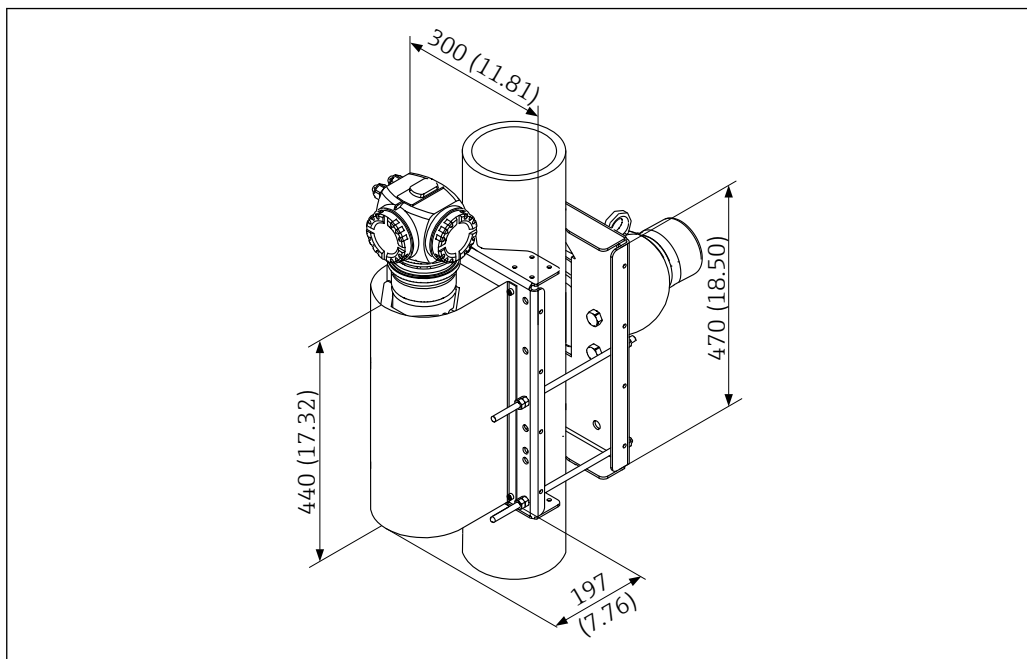


- For versions with locking screw: Use the locking screw to adjust the Gammapiot M FMG60 so that the exact distances (see section 3) are maintained and fixed.





5 Dimensions and weight



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Dimensions: mm (in)

Weight: approx. 40 kg



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