SD02558F/00/EN/02.22-00
71564881
2022-03-28

71564881

Special Documentation
FHG51-F#1
Clamping device for density measurement

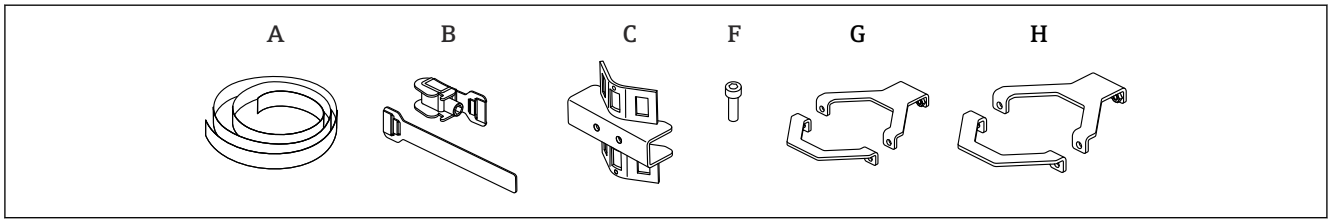
Radiometric level measurement

Designated use

Clamping device to secure a radiometric measuring system on pipes with an outer diameter of 80 to 273 mm (3.15 to 10.75 in).

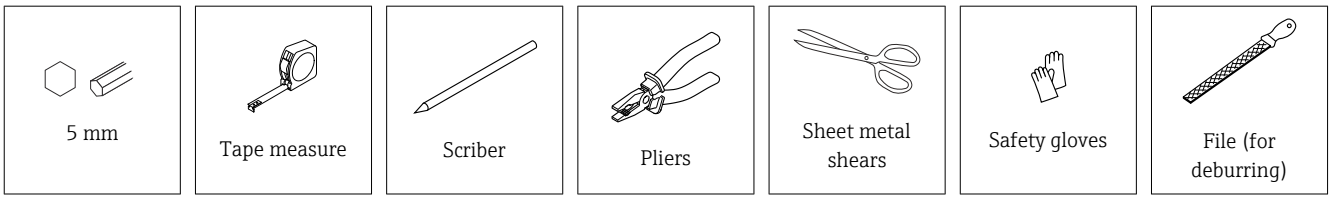
The radiometric measuring system comprises an FQG60 source container and the Gammapilot FMG50 compact transmitter.

Overview of clamping device



A *1 × tensioning band 12 mm (0.47 in)×0.5 mm (0.02 in) length 10 m (33 ft) (rolled up in a cardboard box), UNS S30400 (1.4301)*
B *6 × turnbuckle, UNS S30400 (1.4301); spiral screw UNS S30300 (1.4305)*
C *2 × clamp, 316L (1.4404)*
F *8 × screw DIN EN ISO4762 M6×20, A4*
G *1 × pipe holder Ø80 mm (3.15 in); 126 mm (4.96 in)×171 mm (6.73 in)×18 mm (071 in), 316L (1.4404)*
H *1 × pipe holder Ø95 mm (3.74 in); 140 mm (5.51 in)×178 mm (7.01 in)×20 mm (0.79 in), 316L (1.4404)*

Tools list



Safety instructions

⚠ CAUTION

Heavy components and devices

Risk of injury, damage to equipment

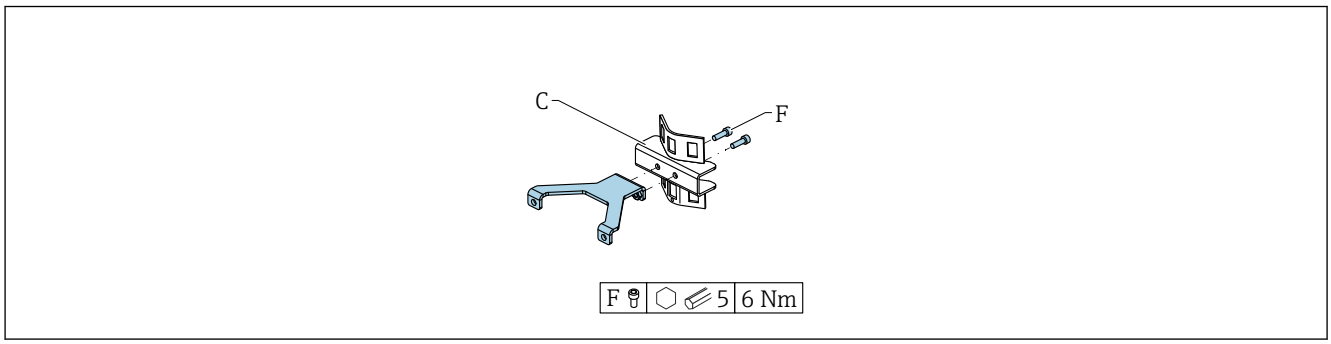
- ▶ Use hoists
- ▶ Pay attention to the weight information in the TI for the device

Installation

- At least two people are required for the installation
- Pay attention to the mounting position of the Gammapilot FMG50.

Endress+Hauser
People for Process Automation

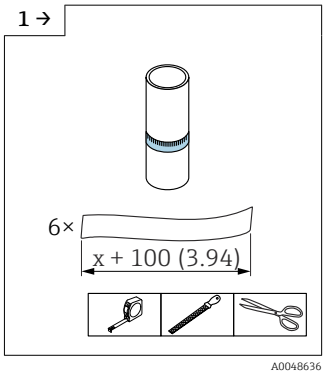
Pre-assembly



1 *Pre-assembly of pipe holder and clamp*

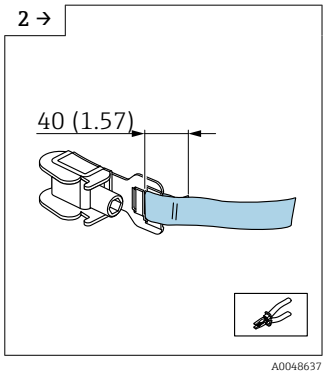
Preparation of tensioning band and turnbuckle

1 →



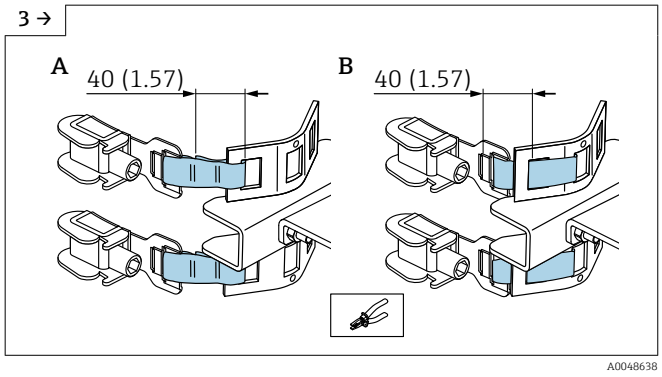
- Measure the pipe circumference, add approx. 100 mm (3.94 in), cut tensioning band to size, deburr sharp edges and corners.

2 →



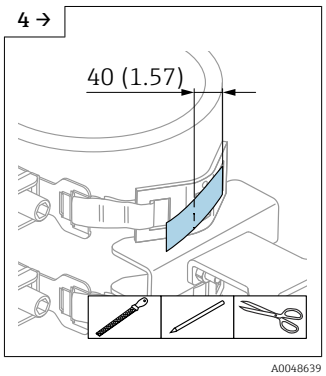
- Take the end of the tensioning band and pass a length of 40 mm (1.57 in) from above through the slit in the turnbuckle and towards the pipe surface, loop it back on itself and press down on it with the pliers.

3 →



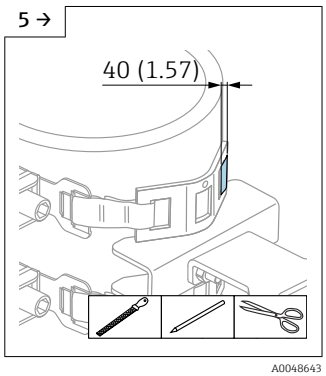
- **A**: Outer diameter of pipe > 140 to 273 mm (5.51 to 10.75 in): take the other end of the tensioning band and pass a length of 40 mm (1.57 in) through the **outer** slit in the aligner and towards the pipe surface, loop it back on itself and press down on it with the pliers.
- **B**: Outer diameter of pipe > 80 to 140 mm (3.15 to 5.91 in): take the other end of the tensioning band and pass a length of 40 mm (1.57 in) through the **middle** slit in the aligner and towards the pipe surface, loop it back on itself and press down on it with the pliers.

4 →



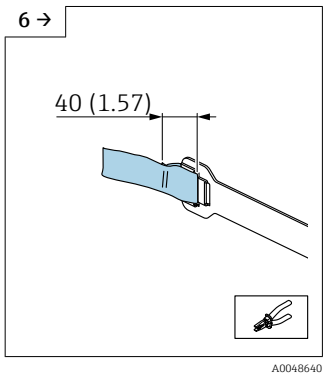
- Place the pre-assembled tensioning band with the turnbuckle around the pipe.
- Mark the required length 40 mm (1.57 in) and cut to size. Deburr sharp edges and corners.

5 →



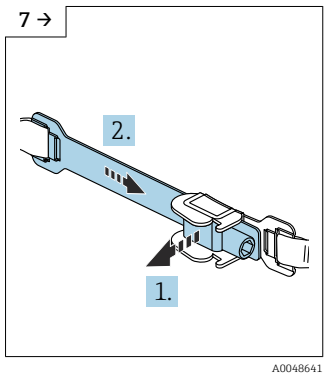
- Pass 40 mm (1.57 in)of the tensioning band through the middle or outer slit (depending on pipe diameter) of the aligner on the pipe surface, loop it back on itself and press down on it with the pliers.

6 →



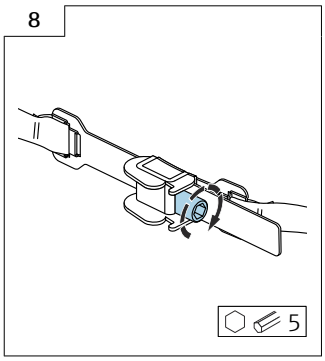
- Pass 40 mm (1.57 in) of the tensioning band (long) from above through the slit in the second piece of the turnbuckle on the pipe surface, loop it back on itself and press down on it with the pliers.

7 →



- Open out the lock and slide in the second piece of the turnbuckle. The secondary catch on the turnbuckle band keeps it secure.

8

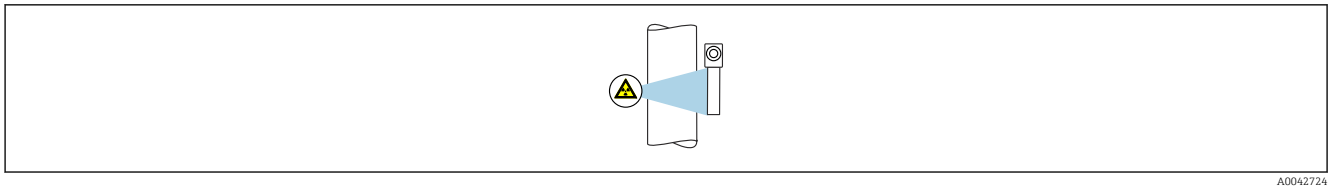


A0048688

- Pretension the screw. It must be possible to move the holder.

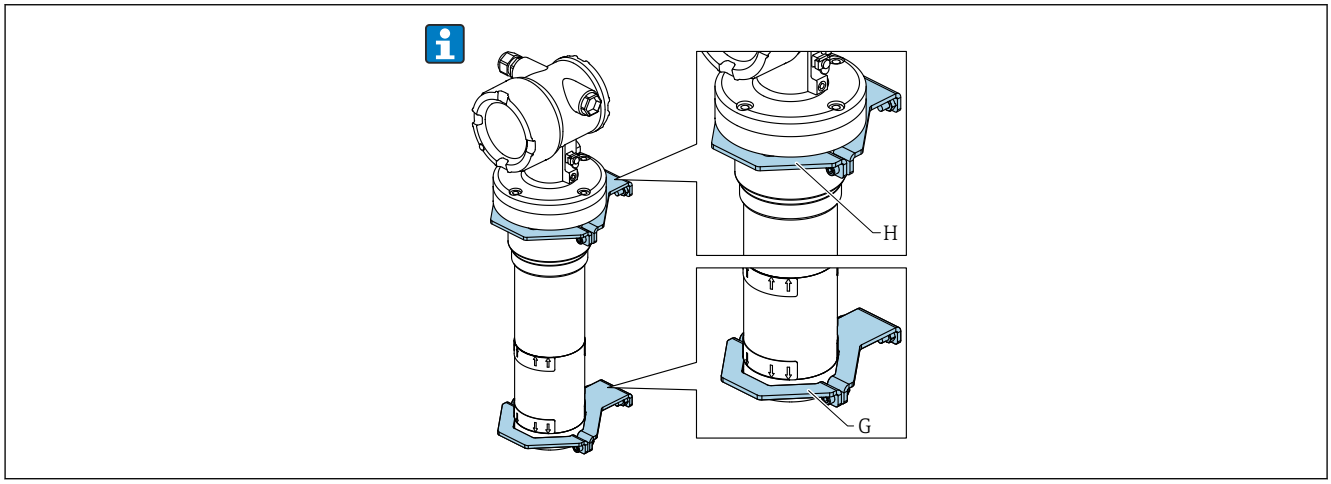
Pay attention to the orientation of the pipe holders → depends on the mounting position, sensor length and the type of irradiation (90° or 30°).

90° vertical irradiation



A0042724

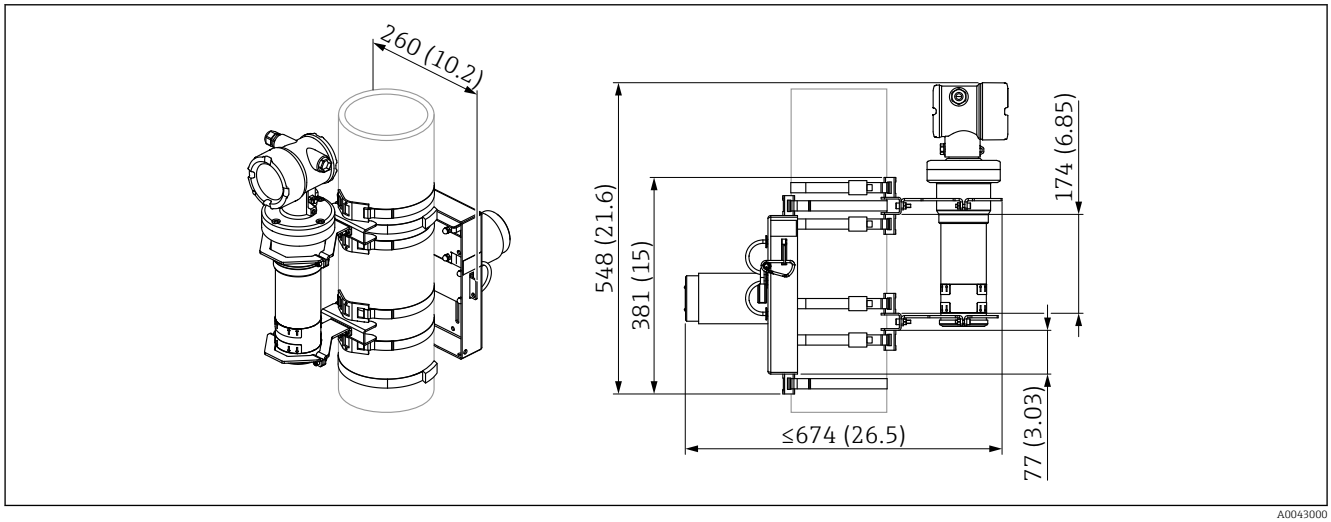
Mounting position of pipe holder



A0042924

2 *Mounting position of pipe holder, 90° vertical irradiation*

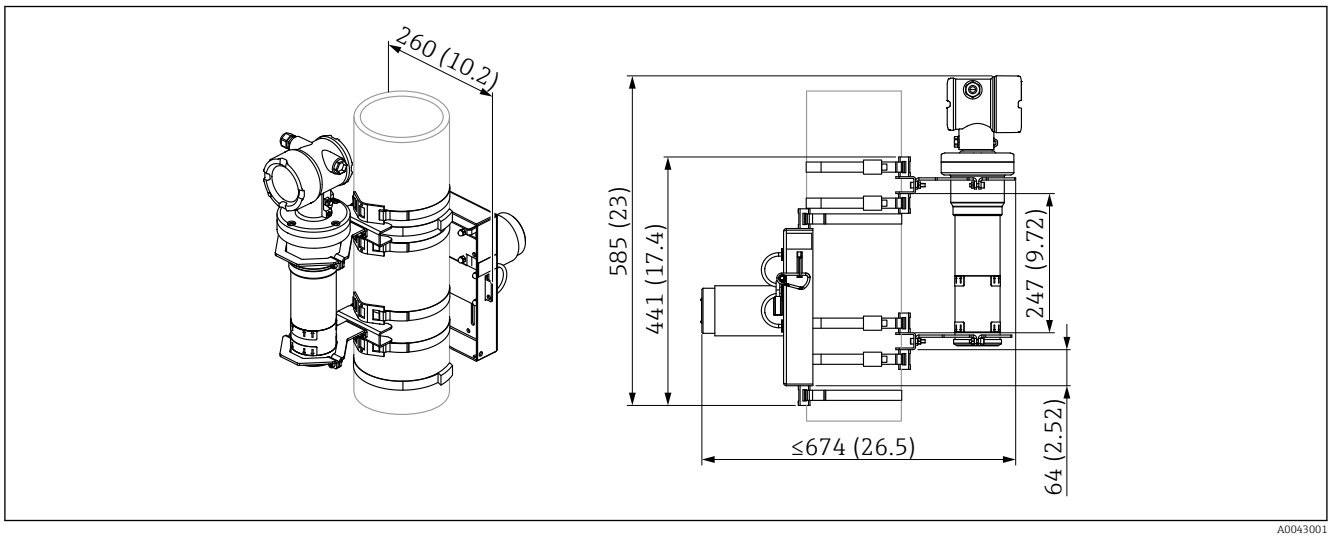
- sensor length 50×50 mm; NaI (Tl) crystal



A0043000

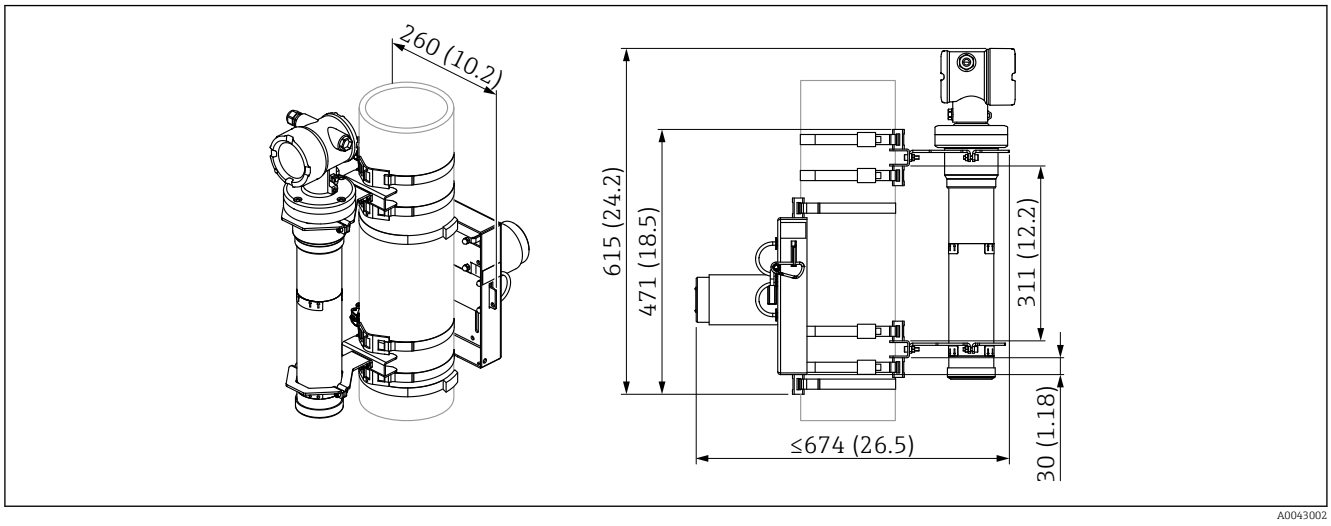
3 *Dimensions for sensor length 50×50 mm; NaI (Tl) crystal. Unit of measurement mm (in)*

- sensor length 50×100 mm; NaI (Tl) crystal



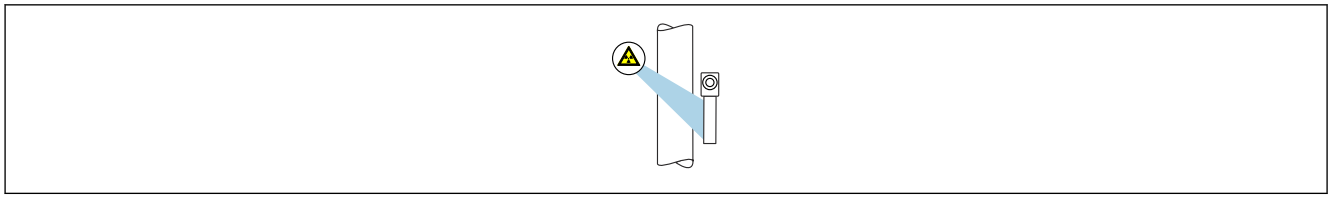
4 Dimensions for sensor length 50×100 mm; NaI (Tl) crystal. Unit of measurement mm (in)

- sensor length 50×200 mm; NaI (Tl) crystal and PVT 200 mm (7.87 in)



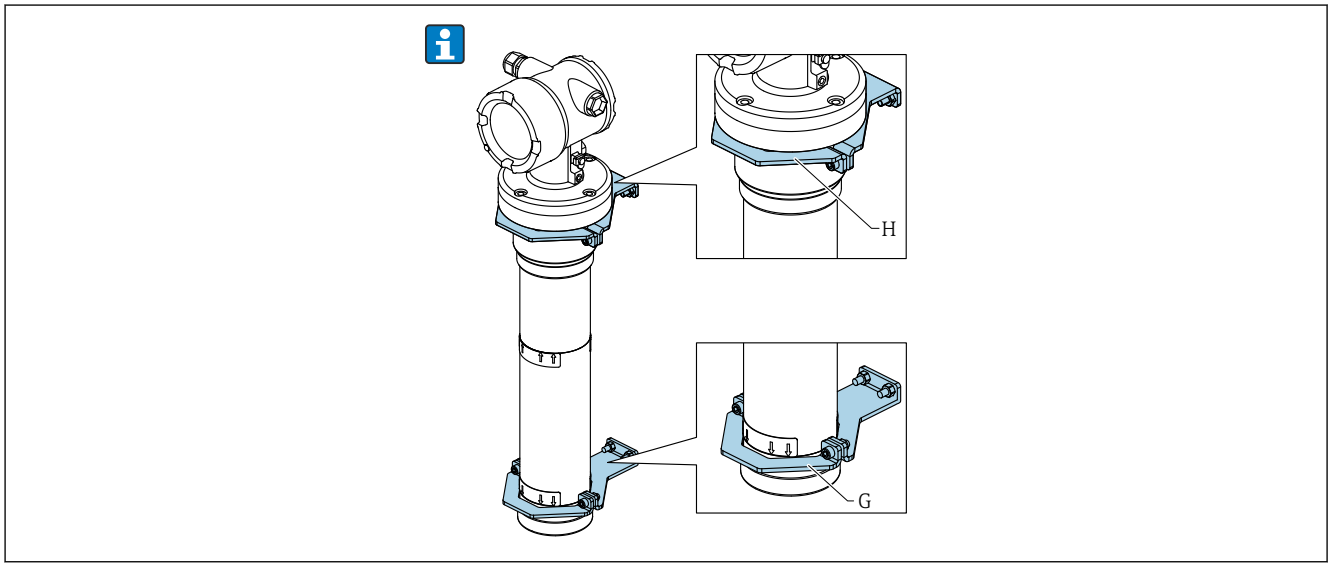
5 Dimensions for sensor length 50×200 mm, NaI (Tl) and PVT 200 mm (7.87 in). Unit of measurement mm (in)

30° diagonal irradiation



A0042725

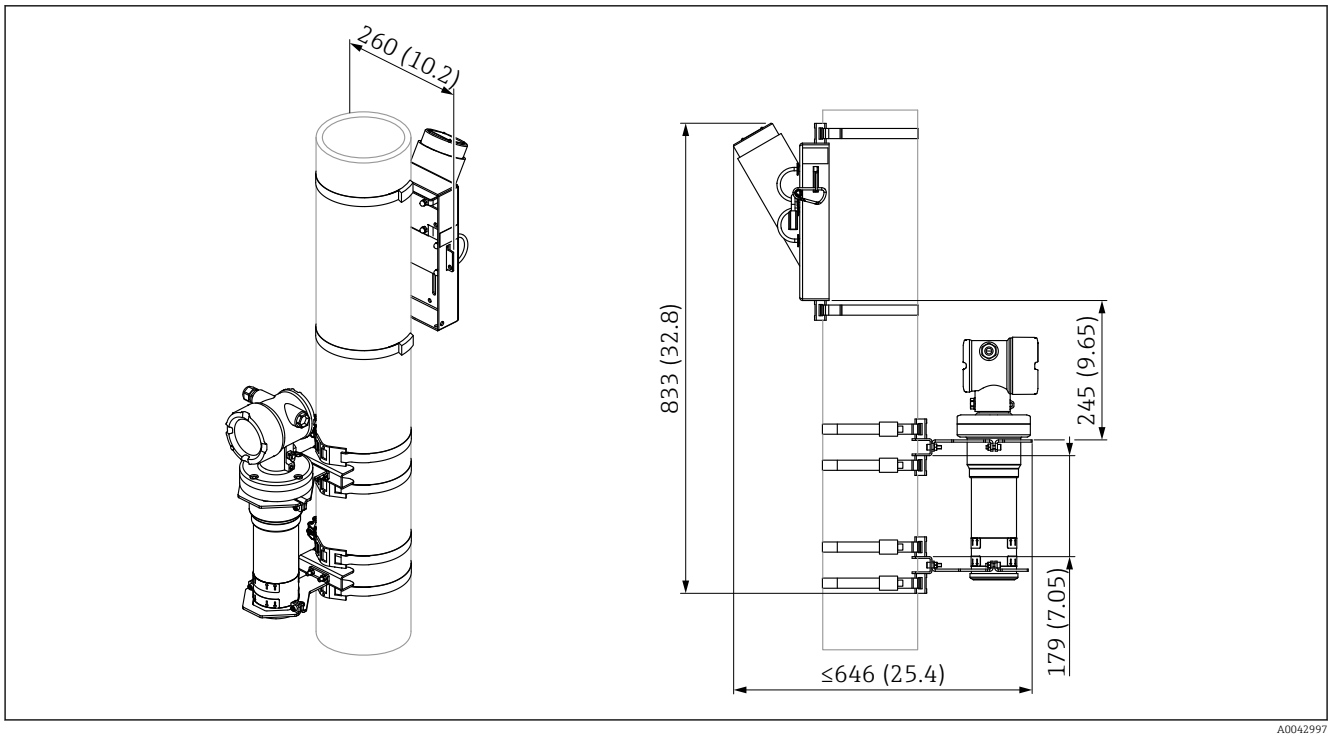
Mounting position of pipe holder



A0042925

6 *Mounting position of pipe holder, 30° diagonal irradiation*

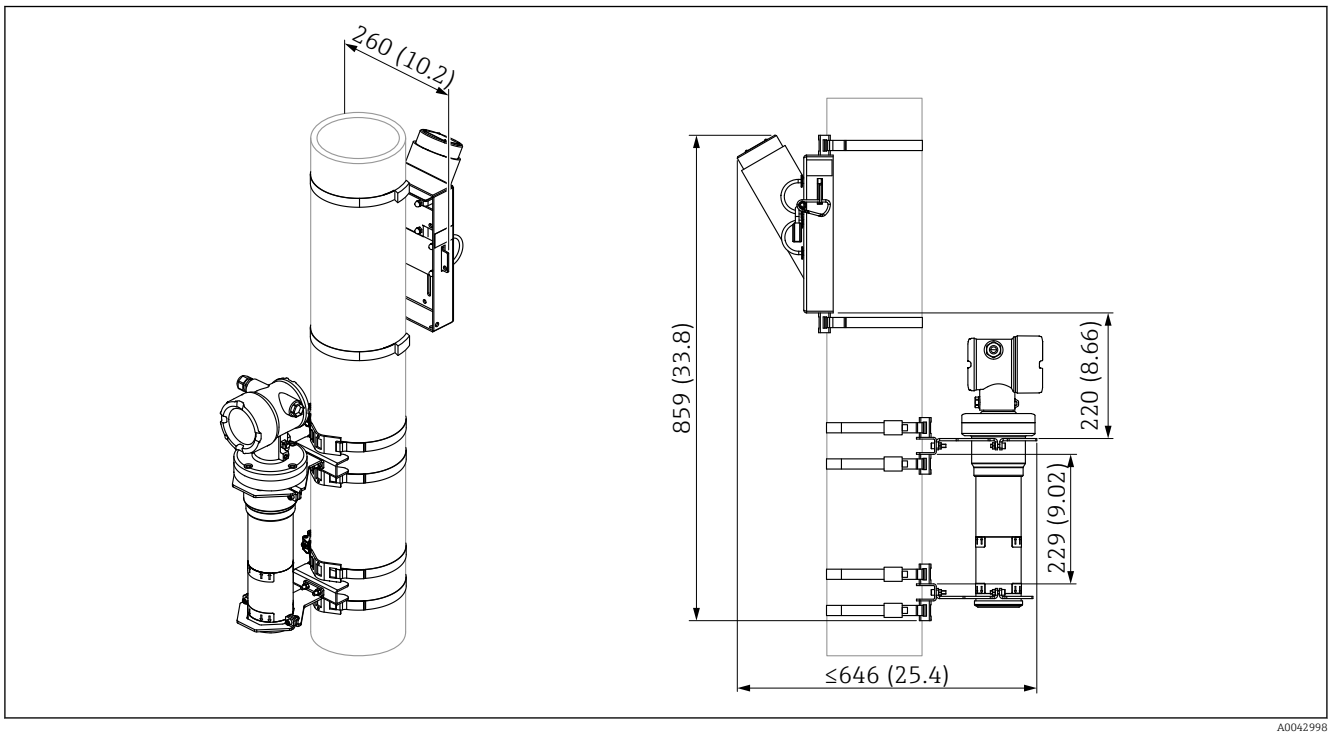
- sensor length 50×50 mm; NaI (Tl) crystal



A0042997

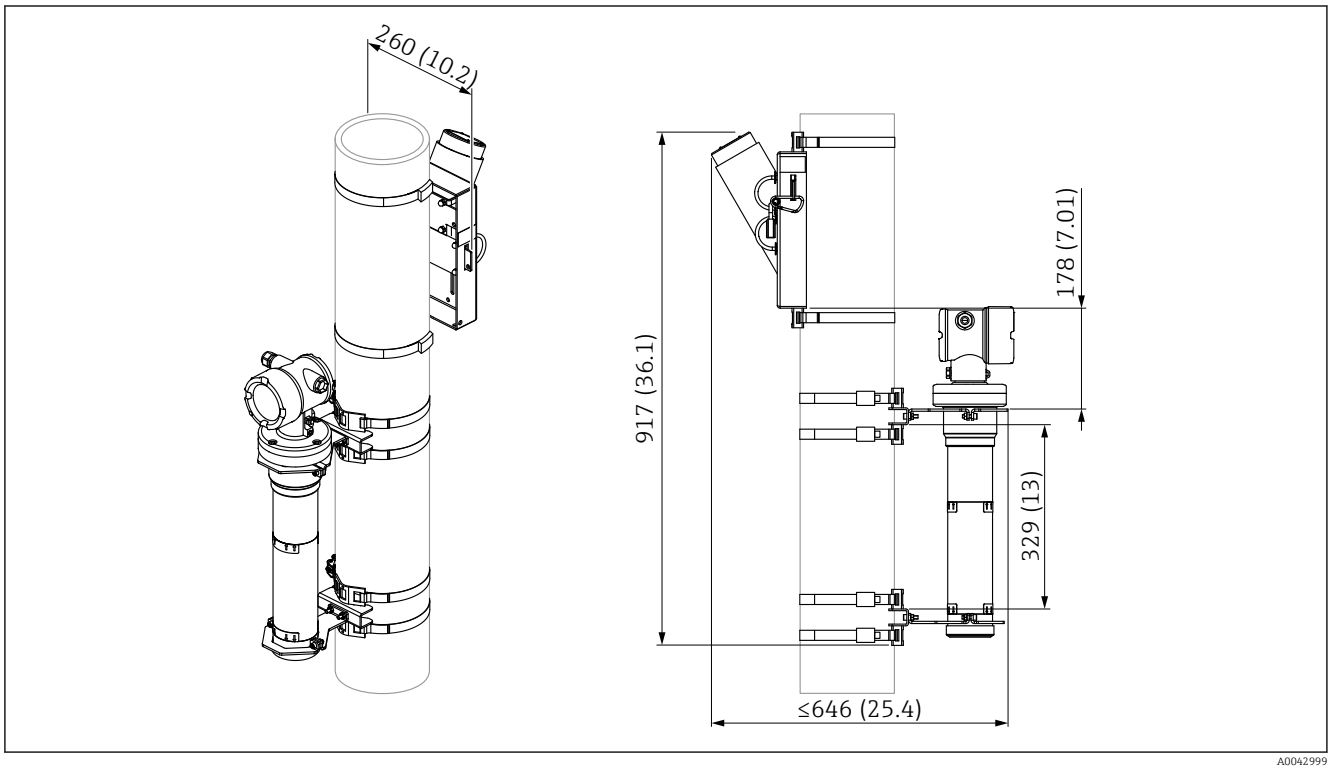
7 *Dimensions for sensor length 50×50 mm; NaI (Tl) crystal. Unit of measurement mm (in)*

- sensor length 50×100 mm; NaI (Tl) crystal



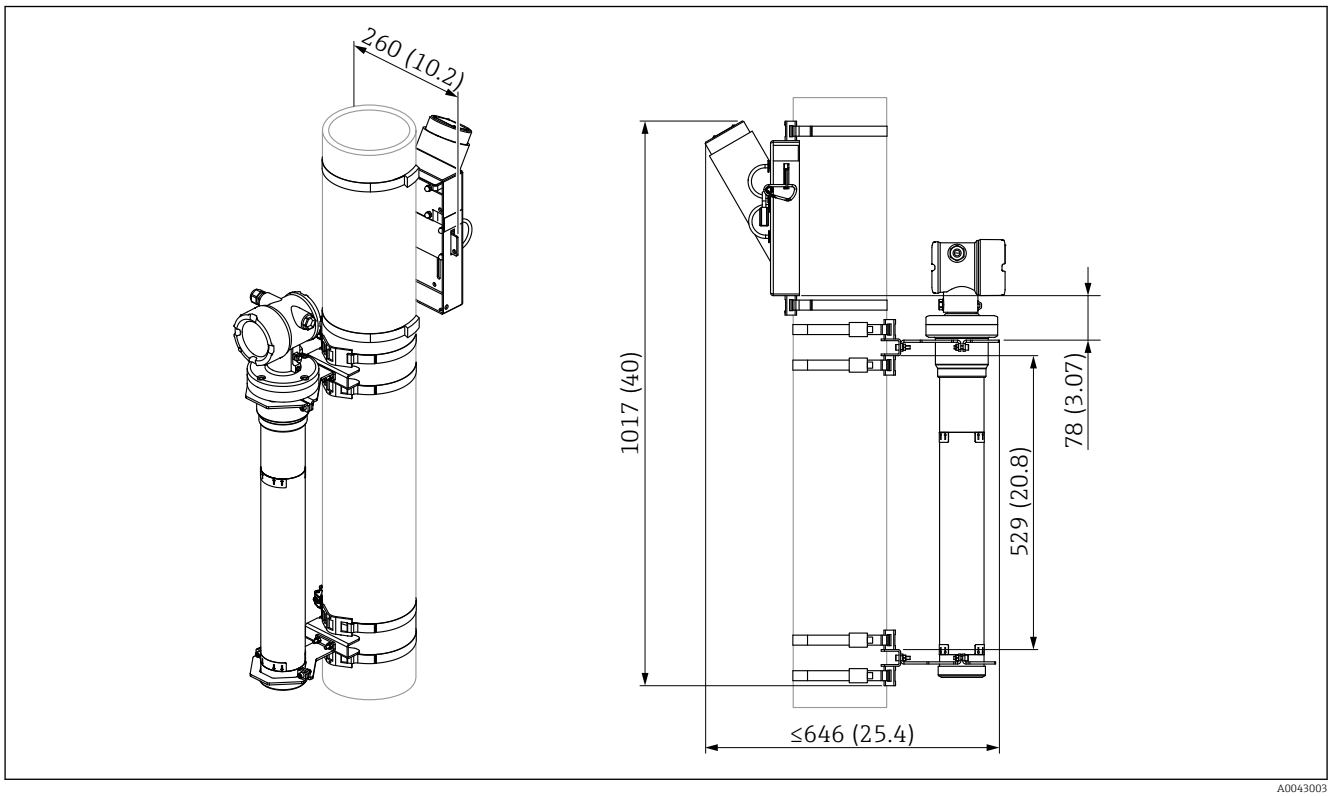
8 Dimensions for sensor length 50×100 mm; NaI (Tl) crystal. Unit of measurement mm (in)

- sensor length 50×200 mm; NaI (Tl) crystal and PVT 200 mm (7.87 in)



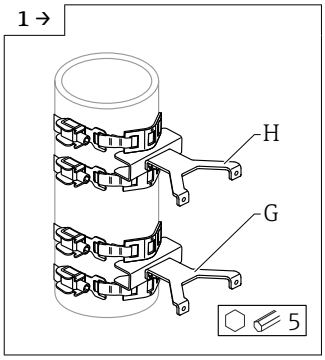
9 Dimensions for sensor length 50×200 mm, NaI (Tl) crystal and PVT 200 mm (7.87 in). Unit of measurement mm (in)

- sensor length PVT 400 mm (15.75 in)

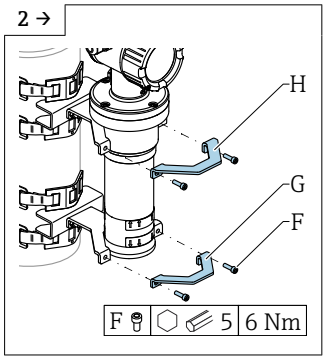


10 Dimensions for sensor length PVT 400 mm (15.75 in). Unit of measurement mm (in)

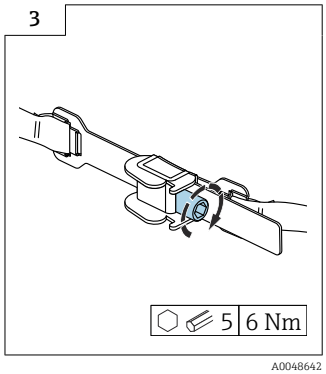
FMG50 mounting steps



- Mount the clamp on the pipe, observing the distance indicated on the dimensional drawing.

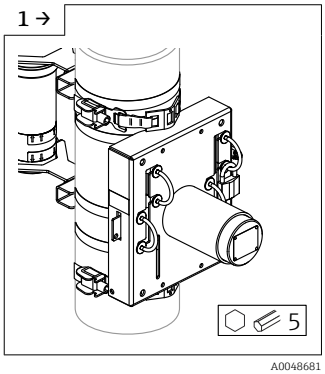


- Mount the Gammapilot.

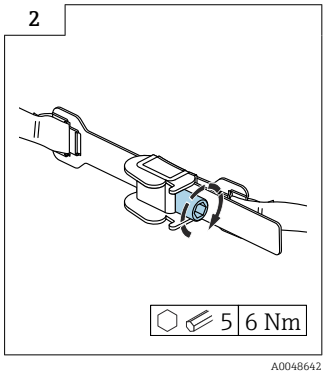


- Connect the turnbuckle by tightening the screws, and retighten the tensioning band.

FQG60 mounting steps



- Alignment of radiation source and Gammapilot; mount the source container (distance as per dimensional drawing).



- Connect the turnbuckle by tightening the screws, and retighten the tensioning band.

Weight

Weight: approx. 2 kg (excluding detector and source container)

Supplementary documentation

The following supplementary documentation is available in the Downloads section of the Endress+Hauser website (www.endress.com/downloads):

Gammapilot FMG50

BA01966F

Source container FQG60

TI00445F