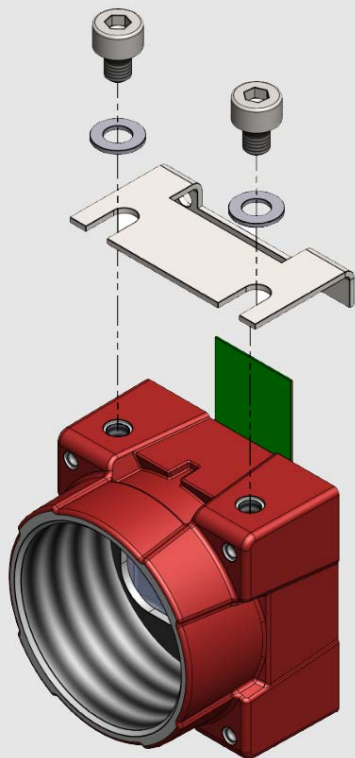




ALVIUM MIPI CSI-2 CAMERAS

FH55 Retaining Plate

User Guide

V1.2.0

**Quick links**

- [This document at a glance](#) on page 9
- [Contact us](#) on page 10
- [Contents](#) on page 11

Read before use

EN - English

Safety

Before using the product, read these safety instructions. Observe the warnings at all times. Use the product only as stated in the [Intended use](#) on page 16.

**CAUTION****Injury by a falling product**

The falling product can cause injury.

Intended use

Intended use of Allied Vision product is the integration into vision systems by professionals. All Allied Vision product is sold in a B2B setting.

DA - Dansk

Sikkerhed

Læs sikkerhedsanvisningerne, før produkt bruges. Overhold alle advarsler. Brug kun produkt som anført i [Intended use](#) på side 16.

**FORSIGTIG****Kvæstelser, hvis produkt falder ned**

Falder produkt ned, kan dette forårsage kvæstelser.

Tilsigtet brug

Allied Vision produktets tilsigtede brug er en indbygning i et visionssystem, udført af fagfolk. Alle Allied Vision produkter sælges i B2B.

DE - Deutsch

Sicherheit

Bevor Sie das Produkt benutzen, lesen Sie diese Sicherheitshinweise. Beachten Sie diese Hinweise immer. Verwenden Sie das Produkt nur wie beschrieben in [Intended use](#) auf Seite 16.



VORSICHT

Verletzung durch das fallende Produkt

Das fallende Produkt kann Verletzungen verursachen.

Bestimmungsgemäßer Gebrauch

Allied Vision Produkte sind bestimmt für die Integration in Bildverarbeitungssysteme durch Fachpersonal. Alle Allied Vision Produkte werden in einer B2B-Umgebung verkauft.

ES - Español

Seguridad

Antes de utilizar el producto lea estas instrucciones de seguridad. Observe las advertencias en todo momento. Utilice el producto solo tal y como se estipula en el [Intended use](#) en la página 16.



ATENCIÓN

Lesiones en caso de que el producto se cae

Si el producto se cae puede provocar lesiones.

Uso previsto

El uso previsto del producto Allied Vision es la integración en el sistema de visión por parte de profesionales. Todos los productos Allied Vision se venden dentro de una relación B2B.

FI - Suomi

Turvallisuus

Lue nämä turvallisuusohjeet ennen tuotteen käyttöä. Noudata tuotetta joka hetki. Käytä tuotteen ainoastaan kohdassa [Intended use](#) sivulla 16 kuvatulla tavalla.



HUOMIO

Putoavan tuotteen aiheuttamat vammat

Putoava tuote voi aiheuttaa vammoja.

Käyttötarkoitus

Allied Vision-tuotteen käyttötarkoitus on integrointi kuvajärjestelmiin ammattilaisten toimesta. Kaikki Allied Vision-tuotteet myydään B2B-ympäristössä.

FR - Français

Sécurité

Veuillez lire ces consignes de sécurité avant d'utiliser le produit. Respectez continuellement les avertissements. Utilisez le produit uniquement comme indiqué sous [Intended use](#), page 16.



ATTENTION

Blessures en cas de chute du produit

La chute de la produit peut entraîner des blessures.

Utilisation prévue

L'utilisation prévue du produit Allied Vision est son intégration dans des systèmes de vision par le soin de professionnels. Tout produit Allied Vision est vendu dans un cadre B2B.

עברית - HE

בטיחות

לפני השימוש במוצר, עליך לקרוא את הוראות הביטחון האלו. עליך לממש הוראות ביטחון אלו תמיד. השימוש במצלמה הוא רק לפי מה שכתוב ב"כוונת השימוש" ([Intended use](#) בעמוד 16).

זהירות

פגיעה מנפילת המוצר

נפילת המוצר עלולה לגרום לפגיעה.



שימוש מיועד

מוצרי AlliedVision מיועדים לשילוב במערכות ממוחשבת לעיבוד צילומים ע"י אנשי מקצוע. כל מוצרי AlliedVision נמכרים לשימוש בסביבת B2B.

IT - Italiano

Sicurezza

Leggere queste istruzioni per la sicurezza prima di utilizzare il prodotto. Osservare sempre tutte le avvertenze. Utilizzare il prodotto come descritto alla sezione [Intended use](#) a pagina 16.



ATTENZIONE

Lesioni dovute alla caduta del prodotto

Il prodotto può causare delle lesioni.

Uso previsto

Il prodotto Allied Vision è concepito per essere integrato in sistemi di monitoraggio in campo professionale. Tutti i prodotti Allied Vision sono venduti in uno scenario B2B.

JA – 日本語

安全性

本製品を使用する前に、この安全ガイドをお読みください。警告を必ず守ってください。必ず21ページの[Intended use](#) 16 ページに従って使用してください。



注意

製品の落下によるケガ

本製品が落下すると、けがをするおそれがあります。

用途

Allied Vision製品は、専門家が視覚装置に統合することを意図したものです。すべてのAllied Vision製品は、企業間取り引き用に販売されています。

NL - Nederlands

Veiligheid

Lees deze veiligheidsinstructies voordat u het product gebruikt. Neem deze waarschuwingen altijd in acht. Gebruik het product uitsluitend, zoals aangegeven in het [Intended use](#) op pagina 16.



VOORZICHTIG

Letsel door het vallende product

Het vallende product kan verwondingen veroorzaken.

Beoogd gebruik

Het beoogde gebruik van het Allied Vision-product is de integratie in optische systemen door professionals. Alle Allied Vision-producten worden verkocht in de B2B-markt.

NO - Norsk

Sikkerhet

Les disse sikkerhetsinstruksene før du bruker produkt. Følg advarslene til en hver tid. Bruk kun produkt i samsvar med [Intended use](#) på side 16.



FORSIKTIG

Skade ved det fallende produktet

Det fallende produktet kan forårsake skade.

Tiltenkt bruk

Den tiltenkte bruken av Allied Vision-produktet er integrering i visjonssystemer av profesjonelle. Alle Allied Vision-produkter selges i en forretning til forretning-situasjon.

SV - Svenska

Säkerhet

Läs igenom säkerhetsinstruktionerna innan du använder produkten. Var hela tiden särskilt uppmärksam på varningarna. Använd enbart produkten på det sätt som anges i [Intended use](#) på sida 16.



VARNING

Risk för skador från fallande produkter

Fallande produkter kan förorsaka skador.

Avsedd användning

Den avsedda användningen av Allied Vision-produkter är integrering i visionssystem av fackmän. Samtliga Allied Vision-produkter säljs i en B2B-miljö.

ZH - 简体中文版

安全需知

在使用产品之前，请阅读这些安全说明。请务必遵守相关警告和 [Intended use](#) 于第 16 页。



注意事项

由坠落的产品造成的伤害

产品可能会坠落并造成伤害。

预期用途

Allied Vision 产品的预期用途是由专业人士整合到视觉系统中。所有 Allied Vision 的产品均通过 B2B 渠道销售。

This document at a glance



Read this document carefully

Learn to use the FH55 retaining plate in the most safe and efficient way and avoid damage to your Alvium CSI-2 camera.

Purpose of the FH55 retaining plate

FPC cables connected to Alvium CSI-2 cameras must be secured by a strain relief to avoid malfunctions or damage to the camera. The FH55 retaining plate can be used with housed standard Alvium CSI-2 models to improve strain relief, but it cannot replace a strain relief.

If the FPC connector breaks, the camera must be replaced. You may use the FH55 retaining plate instead of a strain release for evaluation purposes on your own risk. However, an additional strain relief is required for final products.

Shipping contents

The deliveries of housed Alvium CSI-2 cameras and most modular options include the retaining plate set. **Bare board, Flex, and Frame are excluded.**

22648 - Retaining Plate Sets for FH55 Connector can be ordered separately.

The delivery consists of:

- 1 × FH55 retaining plate
- 2 × M3×4 cylinder screw ISO 4762 DIN 912
- 2 × washer 3.2 ISO 7092 DIN 433



Shipping content quantities

Current 22648 includes 1 retaining plate, **previous 16298** included 2 pieces.

What else do you need?

This is a selection of helpful downloads:

Document	Link
Alvium CSI-2 Cameras User Guide	www.alliedvision.com/en/support/technical-documentation/alvium-csi-2-documentation
FPC cables and adapter boards for MIPI CSI-2 connections	www.alliedvision.com/en/products/accessories/interface-connections
Accessories for Alvium CSI-2 cameras	www.alliedvision.com/en/products/accessories

Table 1: Document downloads for the FH55 retaining plate

Contact us

Website, email

General

www.alliedvision.com/en/contact

info@alliedvision.com

Distribution partners

www.alliedvision.com/en/avt-locations/avt-distributors

Support

www.alliedvision.com/en/support

www.alliedvision.com/en/about-us/contact-us/technical-support-repair/-/rma

Offices

Europe, Middle East, and Africa (Headquarters)

Allied Vision Technologies GmbH
Taschenweg 2a
07646 Stadtroda, Germany
T// +49 36428 677-0 (Reception)
T// +49 36428 677-230 (Sales)
F// +49 36428 677-28

North, Central, and South America, Canada

Allied Vision Technologies Canada Inc.
300 – 4621 Canada Way
Burnaby, BC V5G 4X8, Canada
T// +1 604 875 8855

USA

Allied Vision Technologies, Inc.
102 Pickering Way- Suite 502
Exton, PA 19341, USA
Toll-free// +1-877-USA-1394
T// +1 978 225 2030

Asia-Pacific

China

Allied Vision Technologies Shanghai Co Ltd.
B-510, Venture International Business Park
2679 Hechuan Road
Minhang District, Shanghai 201103
People's Republic of China
T// +86 21 64861133

Japan

Allied Vision Technologies
Yokohama Portside Bldg. 10F
8-1 Sakae-cho, Kanagawa-ku
Yokohama-shi, Kanagawa, 221-0052
T// +81 (0) 45 577 9527

Singapore

Allied Vision Technologies Asia Pte. Ltd
82 Playfair Rd, #07-01 D'Lithium
Singapore 368001
T// +65 6634 9027

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Document history and conventions



This chapter includes:

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Conventions used in this user guide.....	13

Document history

Version	Date	Remarks
V1.2.0	2025-Aug-11	- Updated Shipping contents on page 9 - Updated contents in Specifications on page 20. - Applied editorial changes.
V1.1.1	2025-Jul-11	Removed contents for ISO 13485 and updated definitions for Intended use on page 16.
V1.1.0	2024-Jul-15	Added Read before use on page 2. Updated addresses in Contact us on page 10.
V1.0.0	2021- Sep-21	Initial version

Table 2: Document history

Conventions used in this user guide

To give this user guide an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

Typographical styles

Style	Function
Emphasis	Highlighting important things
Web links and references	Links to webpages and internal cross references

Table 3: Typographical styles

Symbols and notes



CAUTION

Injury by falling cameras

Precautions are described.



NOTICE

Material damage

Precautions are described.

**Practical tip**

Additional information helps to understand or ease handling the camera.

**Additional information**

Web address or reference to an external source with more information is shown.

Safety and intended use



This chapter includes:

Intended use	16
Copyright and trademarks	16
Your safety	17
Product safety	17

Intended use

Allied Vision's objective is the development, design, production, maintenance, servicing and distribution of digital cameras and components for image processing. We are offering standard products as well as customized solutions.

Intended use of Allied Vision product is the integration into Vision systems by professionals. All Allied Vision product is sold in a B2B setting.

Unless expressly agreed otherwise, we design, manufacture, and supply in accordance with the standards of the machine vision industry.

In the event of requirements going beyond this, the customer must:

- Notify us of the special use for each model before the first order is placed so that the models in question can be separated out from the standard processes using their own part numbers, and
- Conclude a quality assurance agreement with us prior to purchasing, to define its requirements in a legally secure manner.

This may require a surcharge, as our prices are very tightly tailored to standard requirements.

Copyright and trademarks

All text, pictures, and graphics are protected by copyright and other laws protecting intellectual property. All content is subject to change without notice.

All trademarks, logos, and brands cited in this document are property and/or copyright material of their respective owners. Use of these trademarks, logos, and brands does not imply endorsement.

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Your safety

This section informs about issues related to your personal safety. Descriptions explain how to avoid hazards and use FH55 retaining plates safely.

Camera mounting

Housed cameras must be mounted using the mounting threads.

If cameras are not mounted properly, cameras can disconnect from the mounting base. Falling cameras can hurt you. To avoid personal injury:

- Mount the camera according to the instructions in the Alvium CSI-2 Cameras User Guide, using the specified screw length and torque.
- Include the thickness of the FH55 retaining plate when you select the screw length.

Product safety

Observe the instructions and safety notes in this document to avoid damage to the camera.

FH55 retaining plates

To avoid damage to the camera, observe the following:

- FH55 retaining plates cannot replace a strain relief.
- FH55 retaining plates must be mounted so that no force is applied to the camera and the FPC connector.

FPC connectors

Hirose FH55-22S-0.5SH FPC connectors enable compact camera design.

The small-sized connectors are sensitive to mechanical stress and are specified for maximum 20 mating and unmating cycles. Especially if you are inexperienced with this connector, be very cautious. If the FPC connector is broken, the camera must be replaced. To install and operate cameras safely, read this section carefully.

- Avoid stress to FPC connectors.
- Allow only the FPC cable to touch conductors.

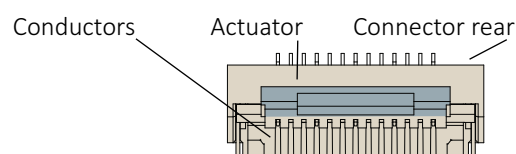


Figure 1: Hirose FH55-22S-0.5SH FPC connector



Additional information

For technical data and more instructions on the Hirose FH55-22S-0.5SH connector, see the manufacturer data sheet at www.hirose.com.

Handling the actuator

- Move the actuator only between 0 degrees (locked position) and 105 degrees (open position).
- Carefully flip the actuator at the middle with your finger nail, see [Connecting FPC cable and FPC connectors](#) on page 24.

MIPI CSI-2 FPC cables

FPC cable position

Short circuits of the FPC cable can damage the camera or connected hardware.

- Insert the FPC cable into the connector with cable guiding tabs matching the connector's side guides. See [Connecting FPC cable and FPC connectors](#) on page 24.
- Connect the camera and the embedded board (adapter) only as shown by the arrow printed on the FPC cable, see [Connecting FPC cable and FPC connectors](#) on page 24.

FPC cables and stress

Over-stressed FPC cables can damage the camera and connected hardware. When camera and embedded board are twisted against each other or pulled apart from each other with too much force, the FPC cable is over-stressed. Spring contacts of FPC connectors are worn out, causing short circuits and unreliable electrical connections.

- Insert the FPC cable into the FPC connector at 12 degrees to the PCB board surface. See [Connecting FPC cable and FPC connectors](#) on page 24.
- Allow only slight bending of the FPC cable (minimum bending radius: 10 mm).
- Provide strain relief to avoid short cuts and malfunctions.

No hot-plugging for MIPI CSI-2

Alvium CSI-2 cameras do not support hot-plugging. Hot-plugging can destroy the camera and connected hardware by high inrush current.

Disconnect power supplies before connecting FPC cables.

Specifications and technical drawing



This chapter includes:

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Specifications

Feature	Specification
Current product code (1 retaining plate) ¹	22648
Previous product code (2 retaining plates) ¹	16298
Sheet thickness	0.7 mm
Height adding to camera dimensions (including screws and washers)	3.5 mm
Length adding to camera dimensions	0.7 mm
Mass (including screws and washers)	5 g
Supported cameras	Housed Alvium CSI-2 models, excluding bare board, Frame or Flex options
¹ See Shipping contents on page 9.	

Table 4: FH55 retaining plate specifications

Technical drawing

Figure 2 shows the camera with FH55 retaining plate attached.

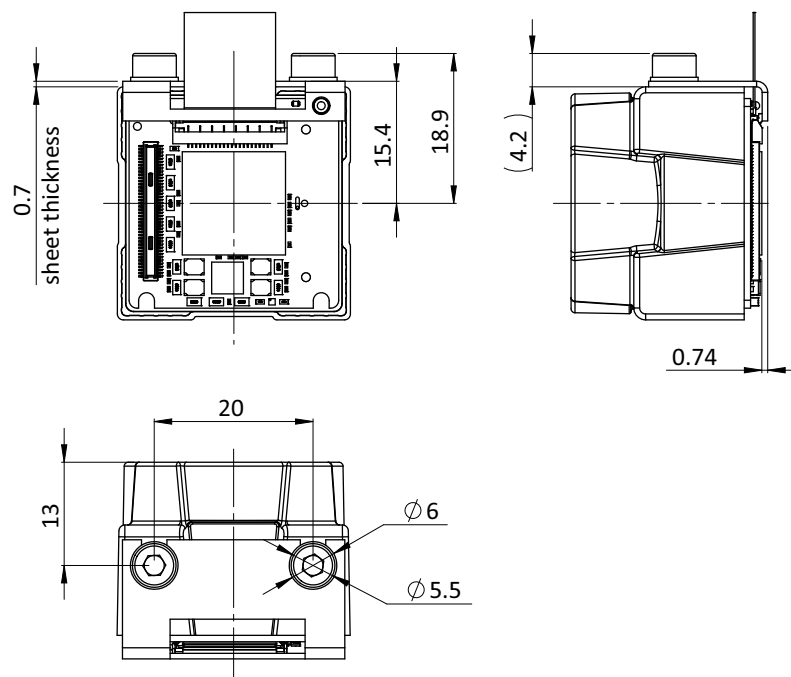


Figure 2: Alvium CSI-2 camera with FH55 retaining plate dimensions

Mounting FH55 retaining plates



This chapter includes:

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Mounting instructions	23

Preconditions

Required components and tools

You need the following items to mount FH55 retaining plates:

- Alvium CSI-2 Camera
- FPC cable
- 1 × FH55 retaining plate (shipping contents)
- 2 × M3×4 cylinder screw ISO 4762 DIN 912 (shipping contents)
- 2 × washer 3.2 ISO 7092 DIN 433 (shipping contents)
- Clean desktop or work bench
- Compatible 2.3 mm hexagon screwdriver
- Flat plastic tool to lift up the actuator (optional)

About FPC cables and connectors

Figure 3 shows how the FPC cable connects to the FPC connector.

Follow the instructions to connect the FPC cable to the camera and to the embedded board.

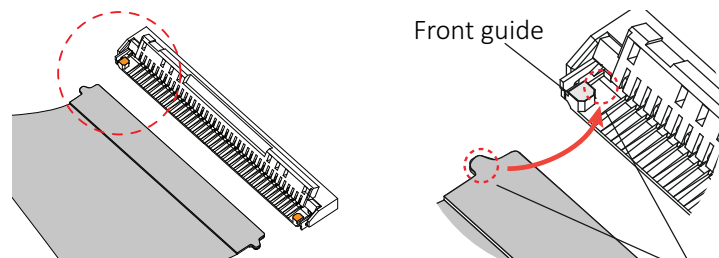


Figure 3: FPC cable and FPC connector (open position)

1. Opening the FPC connector:
With your fingernail*, flip the actuator to open position at 105 degrees to the PCB surface, see Figure 4.

*Or a plastic tool, because metal tools can damage the actuator.

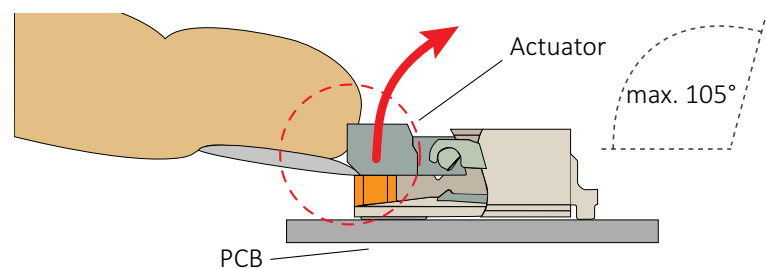


Figure 4: Opening the FPC connector

Mounting instructions



NOTICE

Damage to the camera

The FPC cable must be disconnected from power before you follow the instructions.



To ease handling...

We recommend you to read the instructions before you take actions to get an overview.

Sliding the FH55 retaining plate onto the FPC cable

1. Hold the FPC cable with the **Camera** print facing the ground.
2. Slide the FH55 retaining plate over the top end of the FPC cable with the slotted mounting holes of the FH55 retaining plate facing the same direction as the conductors of the FPC cable.

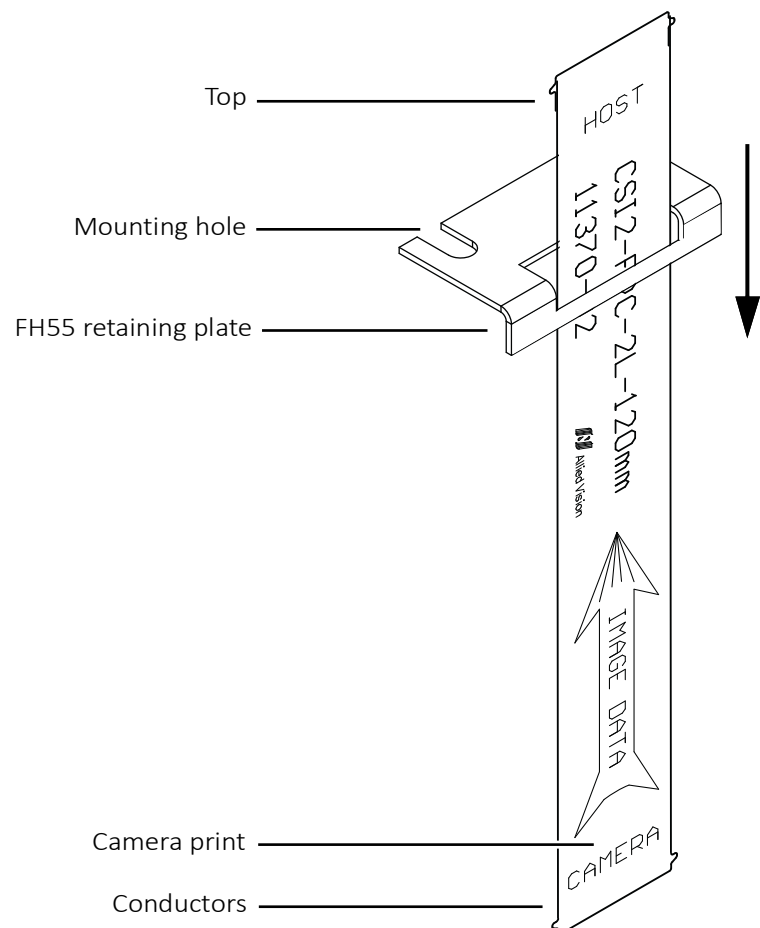


Figure 5: Sliding the FH55 retaining plate onto the FPC cable

Connecting FPC cable and FPC connectors



NOTICE

Damage to the camera by reverse polarity

If Alvium CSI-2 cameras are powered with reverse polarity, camera electronics is damaged.

- Before connecting camera power and I/O power, carefully read the description in the Alvium CSI-2 Cameras User Guide.
- Connect the cable as shown in this section.

Embedded
board or
adapter board



Camera

Figure 6: FPC cable and image data direction

3. **Ensuring proper cable direction between host and camera**, take the FPC cable with conductors facing the FPC connector conductors (see Figure 7).

4. Inserting the FPC cable:
At a horizontal angle of 90 degrees to the connector's rear (see Figure 7) and at a vertical angle of 12 degrees to the PCB (see Figure 8), slowly insert the FPC cable into the actuator...

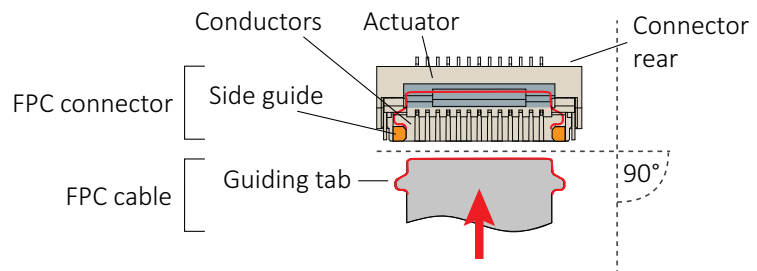


Figure 7: FPC cable and FPC connector

5. ...until cable guiding tabs are caught between connector rear and side guides (see Figure 7). Pull the cable slightly to ensure guiding tabs are properly engaged.
6. Holding the FPC cable in position, flap down the actuator to closed position (see Figure 8).

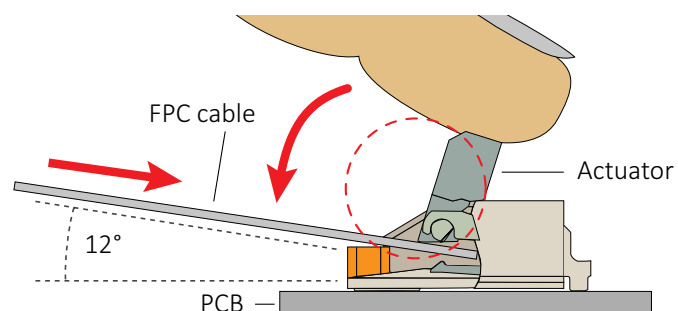


Figure 8: Engaging the FPC cable in the FPC connector



NOTICE

Damage to FPC connectors

A bended FPC cable can break the FPC connector's actuator.
Provide sufficient strain relief at both ends of the cable.

Mounting FH55 retaining plates



CAUTION

Injury by falling cameras

A falling camera can cause injury.

- Mount the camera according to the instructions in the Alvium CSI-2 Cameras User Guide, using the specified screw length and torque.
- Include the thickness of the FH55 retaining plate when you select the screw length.



NOTICE

Damage to the camera

If the FPC connector breaks, the camera must be replaced.

- Avoid force to actuator of the FPC connector.

This instruction describes **mounting the FH55 retaining plate directly**.

If you want to mount cameras to a mounting base with the FH55 retaining plate included, see the Alvium CSI-2 Cameras User Guide.

1. With one hand holding the FPC cable in position, slide the FH55 retaining plate onto the top of the camera housing.
2. For the following steps, keep the FH55 retaining plate in contact with the FPC connector.
3. Insert the screws (with washers engaged) into the top mounting holes of the camera.
4. **The torque value applies only, if the FH55 retaining plate is mounted directly, using the screws and washers delivered in the 16298 - Retaining Plate Set for FH55 Connector.**

Tighten the screws with the hexagon screwdriver at 0.58 Nm maximum torque.

You are done.

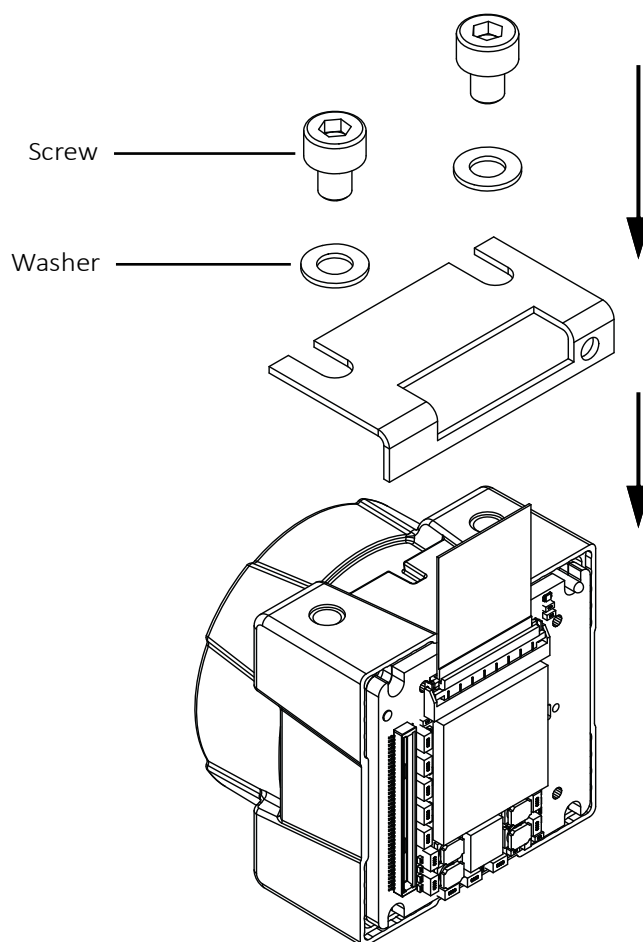


Figure 9: Mounting the FH55 retaining plate