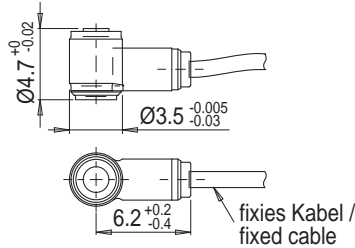


### Cavity pressure sensor, indirect

Measuring range: 0 - 250 N  
Sensitivity: -12 pC/N  
Operating temperature: 0 – 200°C



## 1. General information

- » Do not machine the sensor diameter  $\text{Ø}3.5$  mm or the front surface
- » Sensor surface may not be scratched or dirtied
- » When installing, handle the sensor carefully
- » To remove, do not pull the sensor cable

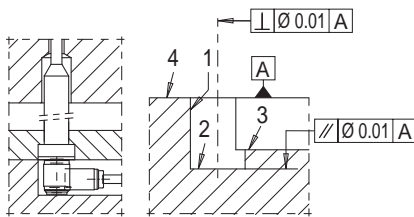
### 1.1. Conversion of force to pressure sensitivity

$$SP = A \times SF \times 0.1$$

SP Pressure sensitivity [pC/bar]  
A Surface of ejector pin (d1)  
SF Force sensitivity [pC/N], according to identification number

## 2. Sensor fixing

Fix sensor according to the following drawing and with consideration to the following points.



1. Fit for centring of sensor
2. Flat and even contact surface
3. No contact surface
4. Edge must be higher or at least flush with the sensor surface

## 3. Layout and installation

Indirect pressure sensors measure the pressure in the cavity via an ejector pin which is installed directly in front of the sensor. For this, the sensor is positioned with a hole in the ejector retaining plate.

For applications with several cavities where several sensors are arranged next to each other, it is advisable to provide a backing plate.

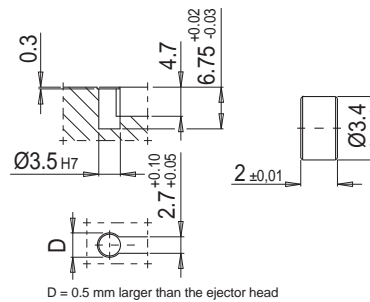
- » The entire sensor fixing must be clean and free from chips.

### 3.1. Sensor installation

- » The thread and hole must be clean and free from chips
- » Deburr the edges in the entire area of the cable guide to prevent damage to the cable

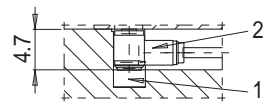
### 3.2. Sensor in ejector base plate

Manufacture the fitting hole (H7) and pocket in the ejector base plate, and provide the installation space for the supplied washer. The sensor may only rest on the washer. Note centring and position tolerances. The sensor surface must be at a right angle to the hole. If necessary, provide clearance for ejector head.



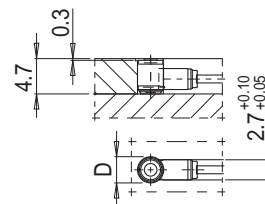
- » Always use the supplied retainer plate

#### 3.2.1. Sensor installation with washer



First introduce the washer (1.) in the sensor fixing then introduce the sensor (2.). Install the sensor flat and at right angles. The sensor measuring surface may not protrude.

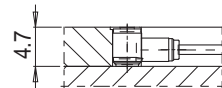
### 3.3. Sensor in backing plate



Manufacture the fitting hole (H7) and pocket in the backing plate. The sensor surface must be at a right angle to the hole and the contact surface must be flat.

- » Do not rest the sensor on the connector

#### 3.3.1. Sensor installation in backing plate

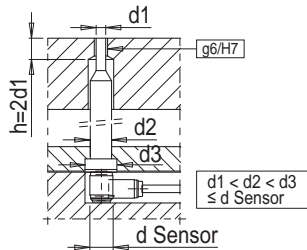


Introduce sensor in sensor fixing. The backing plate and the ejector base plate must be flush. Install the sensor flat at right angles. The sensor measuring surface may not protrude.

### 3.4. Ejector pin and guide

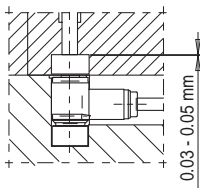
Only use ejector pins with g6 tolerance in combination with an H7 hole. Friction can be reduced by ejectors with DLC coating, for example.

The ejector pin can be adjusted to the mould contour. For this purpose provide anti-rotation protection.



- » Guide length corresponds to double pin diameter d1
- » Ejector diameter d1 ≥ 1mm
- » Diameter of ejector head d3 ≤ sensor Ø3.5mm
- » Do not engrave or mark ejector head

#### 3.4.1. Ejector play

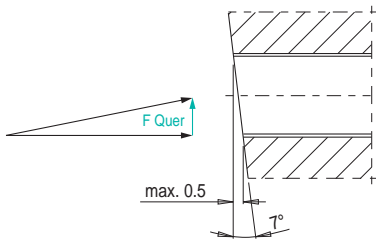


Do not preload ejector pin in either installation situation. After assembly, check if a **play of 0.03 - 0.05mm** is provided.

- » Do not preload sensor

#### 3.4.2. Machining of ejector pins

In order to keep the shear forces on the ejector pin as low as possible, the ejector surface can be ground to a maximum of up to 7°.

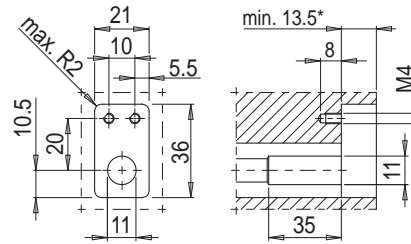


## 4. Cable guide and connector

- » Fixing the cables simplifies the mould assembly
- » Do not route cables directly past the heaters of hot runner systems
- » Deburr all sharp edges
- » Cover all open cable slots

### 4.1. Cable retainer for coaxial cable

The recess for the E 6770 Cable retainer and the cable slot are to be machined as follows.

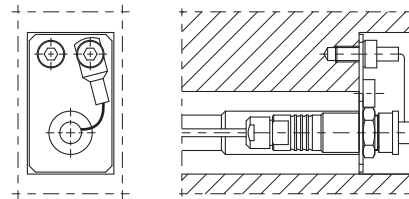


\* Optional for plug protection

## 5. Cable and plug connection

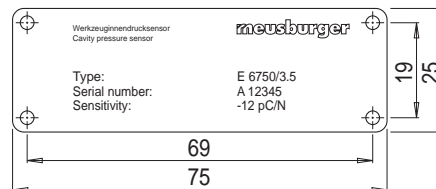
### 5.1. Cable retainer for coaxial cable

Install connector and mounting plate. Fasten cover with screw and place on connector.



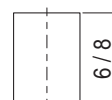
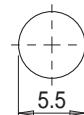
## 6. Mounting the identification label

Fasten the label on the mould side with rivets or with four M2.5 screws.



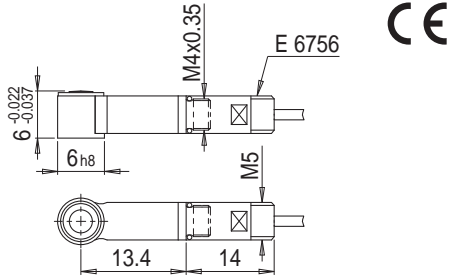
## 7. E 67501 Dummy sensor

When removing the sensor, for reuse in various moulds, the E 67501 dummy can be used instead of the sensor.



### Cavity pressure sensor, indirect

Measuring range: 0 - 2.5 kN  
 Sensitivity: -4.5 pC/N  
 Operating temperature: 0 – 150°C



### 1. General information

- » Do not machine the sensor diameter  $\varnothing 6$  mm or the front surface
- » Sensor surface may not be scratched or dirtied
- » When installing, handle the sensor carefully
- » To remove, do not pull the sensor cable

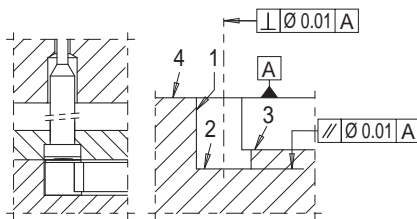
#### 1.1. Conversion of force to pressure sensitivity

$$SP = A \times SF \times 0.1$$

SP Pressure sensitivity [pC/bar]  
 A Surface of ejector pin (d1)  
 SF Force sensitivity [pC/N], according to identification number

### 2. Sensor fixing

Fix sensor according to the following drawing and with consideration to the following points.



1. Fit for centring of sensor
2. Flat and even contact surface
3. No contact surface
4. Edge must be higher or at least flush with the sensor surface

### 3. Layout and installation

Indirect pressure sensors measure the pressure in the cavity indirectly via an ejector pin which is installed directly in front of the sensor. For this, the sensor is positioned with a hole in the ejector retaining plate.

For applications with several cavities where several sensors are arranged next to each other, it is advisable to provide a backing plate.

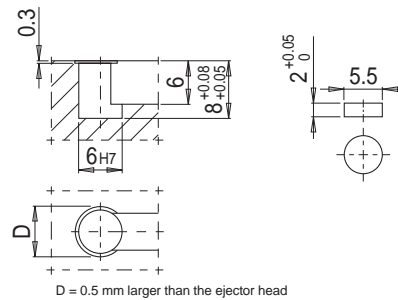
- » The entire sensor fixing must be clean and free from chips.

### 3.1. Sensor installation

- » The thread and hole must be clean and free from chips
- » Deburr the edges in the entire area of the cable guide to prevent damage to the cable

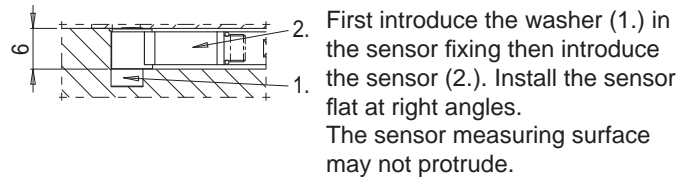
### 3.2. Sensor in ejector base plate

Manufacture the fitting hole (H7) and pocket in the ejector base plate, and provide the installation space for the supplied washer. The sensor may only rest on the washer. Note centring and position tolerances. The sensor surface must be at a right angle to the hole. If necessary, provide clearance for ejector head.



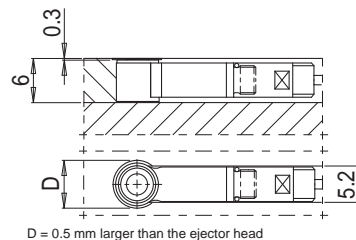
- » Always use the supplied retainer plate

#### 3.2.1. Sensor installation with washer



### 3.3. Sensor in backing plate

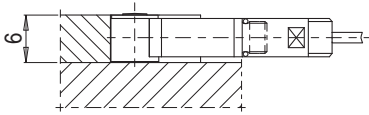
Manufacture the fitting hole (H7) and pocket in the backing plate. The sensor surface must be at a right angle to the hole and the contact surface must be flat. If necessary, provide clearance for ejector head.



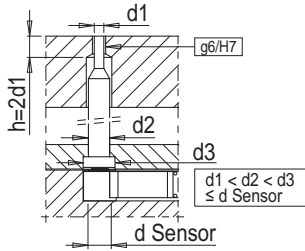
- » Do not rest the sensor on the connector

### 3.3.1. Sensor installation in backing plate

Introduce sensor in sensor fixing.  
The backing plate and the ejector base plate must be flush.  
Install the sensor flat at right angles. The sensor measuring surface may not protrude.



### 3.4. Ejector pin and guide

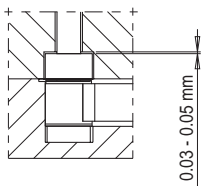


Only use ejector pins with g6 tolerance in combination with an H7 hole. Friction can be reduced by ejectors with DLC coating, for example.

The ejector pin can be adjusted to the mould contour, for this purpose provide anti-rotation protection.

- » Guide length corresponds to double pin diameter  $d1$
- » Ejector diameter  $d1 \geq 1\text{mm}$
- » Diameter of ejector head  $d3 \leq \text{sensor } \varnothing 6\text{mm}$
- » Do not engrave or mark ejector head

#### 3.4.1. Ejector play

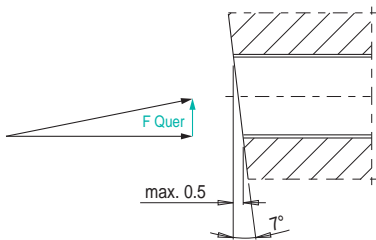


Do not preload ejector pin in either installation situation. After assembly, check if a **play of 0.03 - 0.05mm** is provided.

- » Do not preload sensor

#### 3.4.2. Machining of ejector pins

In order to keep the shear forces on the ejector pin as low as possible, the ejector surface can be ground to a maximum of up to  $7^\circ$ .

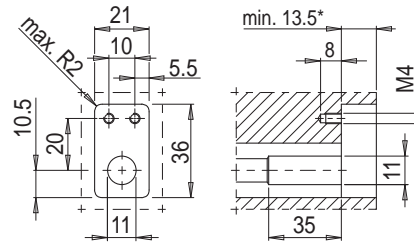


## 4. Cable guide and connector

- » Fixing the cables simplifies the mould assembly
- » Do not route cables directly past the heaters of hot runner systems
- » Deburr all sharp edges
- » Cover all open cable slots

## 4.1. Cable retainer for coaxial cable

The recess for the E 6770 Cable retainer and the cable slot are to be machined as follows.

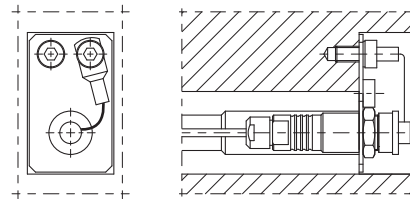


\* Optional for plug protection

## 5. Cable and plug connection

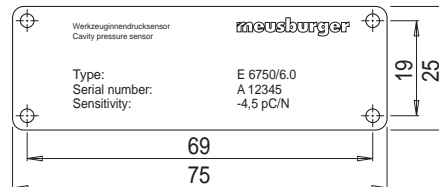
### 5.1. Cable retainer for coaxial cable

Install connector and mounting plate.  
Fasten cover with screw and place on connector.



## 6. Mounting the identification label

Fasten the label on the mould side with rivets or with four M2.5 screws.



## 7. E 67501 Dummy sensor

When removing the sensor, for reuse in various moulds, the E 67501 dummy can be used instead of the sensor.

