



# HEIDENHAIN

Mounting Instructions  
*Montageanleitung*  
Instructions de montage  
*Istruzioni di montaggio*  
Instrucciones de montaje  
取付説明書  
安裝說明  
安裝指導手冊  
설치 지침

## TT 160

3/2015

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**Warnings**  
**Warnhinweise**  
**Avertissement**  
**Avvertenze**  
**Notas de aviso**



**Note:** Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.

**Achtung:** Die Montage und Inbetriebnahme ist von einer qualifizierten Fachkraft unter Beachtung der örtlichen Sicherheitsvorschriften vorzunehmen.

**Attention:** le montage et la mise en service doivent être assurés par un personnel qualifié dans le respect des consignes de sécurité locales.

**Attenzione:** Il montaggio e la messa in funzione devono essere eseguite da personale qualificato nel rispetto delle norme di sicurezza locali.

**Atención:** El montaje y la puesta en marcha deben ser realizados por un especialista cualificado, observando las prescripciones locales de seguridad.

Calibrate the touch probe with the calibration cycle of the control before commissioning.

*Tastsystem vor Inbetriebnahme mit Kalibrierzyklus der Steuerung kalibrieren.*

Avant la mise en service, étalonner le palpeur avec le cycle d'étalonnage de la commande.

*Calibrare il tastatore prima della messa in funzione con il ciclo di calibrazione del controllo numerico.*

Calibrar el palpador, antes de la puesta en marcha, con el ciclo de calibración del control.

## Warnings

注意事項

提示

警告

경고



**Note:** Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.

注意：取付け及び試運転は設置国の安全規格のもとで有資格の専門家により実施するようにしてください。

注意： 安装和调试时必须符合当地安全要求并由具有资质的专业人员操作

注意：安装與調整要經由已認證的專業人員指導以符合當地安全規範要求。

주의: 설치 및 조정은 한국의 안전도 규정에 의하여 작업을 수행할 수 있는 공인된 기술자에 의해 수행되어야 합니다.

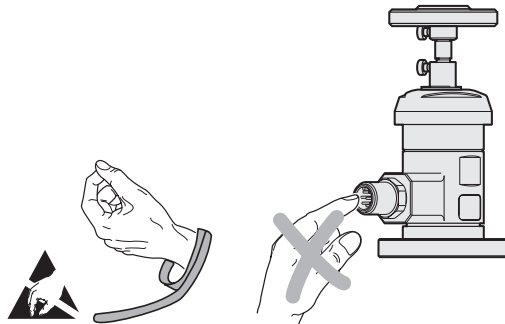
Calibrate the touch probe with the calibration cycle of the control before commissioning.

試運転の前に制御装置の校正サイクルによってタッチプローブ/工具測長器を校正してください。

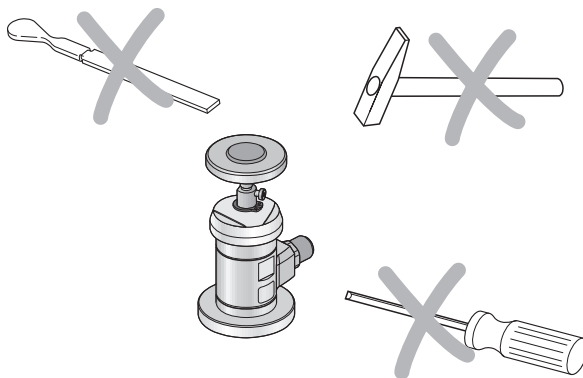
调试开始前用数控系统的校准循环校准测头。

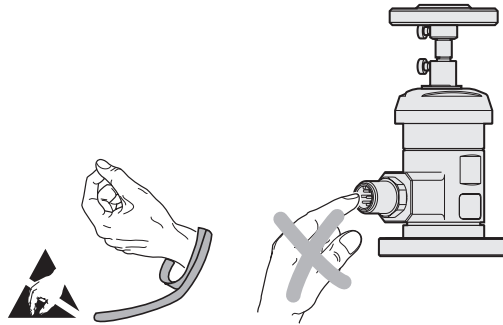
調試之前請先使用控制器的校準程式以校準接觸探頭。

커미셔닝 하기 전에 컨트롤의 교정 사이클로 터치 프로브를 교정합니다.

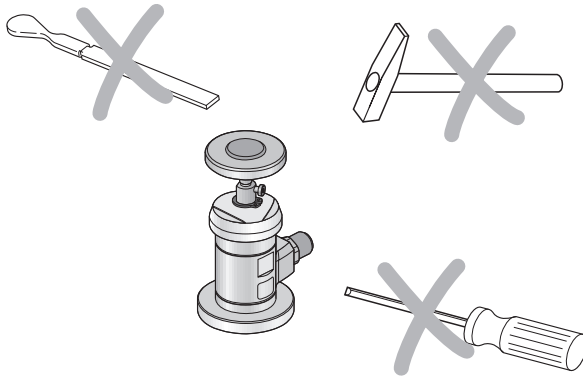


Do not drop the touch probe.  
*Tastsystem nicht fallen lassen.*  
Ne pas laisser tomber le palpeur.  
*Non far cadere il tastatore.*  
No dejar caer el palpador.

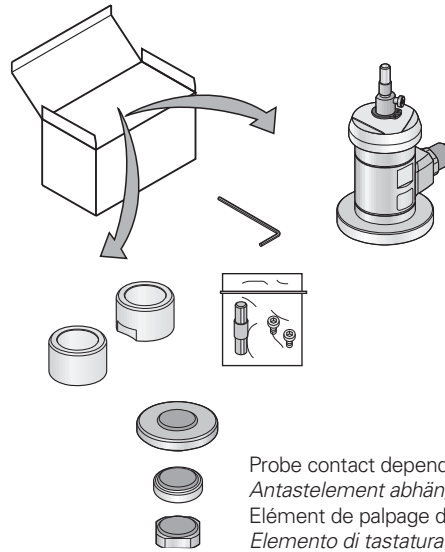




Do not drop the touch probe.  
タッチプローブを落とさないでください。  
请不要使测头跌落。  
探針請勿掉落。  
터치 프로브를 떨어뜨리면 안 됩니다.



**Items supplied**  
**Lieferumfang**  
**Objet de la fourniture**  
**Standard di forniture**  
**Elementos suministrados**



Probe contact depends on device variant  
*Antastelement abhängig von Gerätevariante*  
Élément de palpation dépendant de la version  
*Elemento di tastatura a seconda della variante del sistema*  
El elemento de palpación depende de la variante del aparato

Additional connection pin (rated break point ID 559758-01)  
*zusätzlicher Verbindungsstift (mit Sollbruchstelle ID 559758-01)*  
tige de liaison supplémentaire (avec point de rupture ID 559758-01)  
*spine di collegamento aggiuntive ( con punta di rottura nominale ID 559758-01)*  
vástago de unión adicional (con fusible mecánico ID 559758-01)

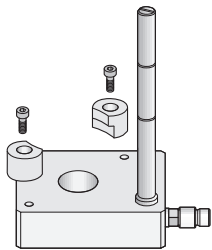


To be ordered separately:  
*Separat bestellen:*  
Commander séparément:  
*Da ordinare separatamente:*  
Pedir por separado:



ID 827590-01

Spare parts kit for connection pin  
*Ersatzteilkit Stift*  
Kit de rechange tige  
*Kit di sostituzione spine*  
Kit de recambio del vástago



ID 767594-01

Mounting base with blower/flusher jet  
*Montagesockel mit Abblasdüse*  
Socle de montage avec buses de soufflage  
*Base di montaggio con ugello di soffiaggio*  
Zócalo de montaje con boquilla de soplado



ID 574752-01

Probe contact  
*Antastelement*  
Élément de palpation  
*Elemento di tastatura*  
Elemento de palpación



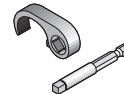
ID 527801-01

Probe contact  
*Antastelement*  
Élément de palpation  
*Elemento di tastatura*  
Elemento de palpación



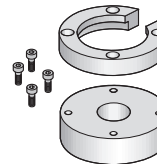
ID 676497-01

For lathe tool  
*für Drehwerkzeug*  
pour outil de tour  
*Per utensile per tornire*  
para cuchilla de torno



ID 1037830-01

Torque wrench adapter  
*Adapter Drehmomentschlüssel*  
Adaptateur clé dynamométrique  
*Adattatore chiave dinamometrica*  
Adaptador llave dinamométrica



ID 332400-01

Mounting base  
*Montagesockel*  
Socle de montage  
*Base di montaggio*  
Zócalo de montaje

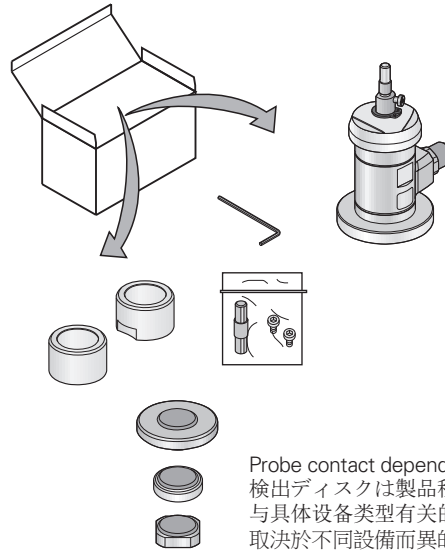
## Items supplied

梱包品

零部件

供應的項目

제공 품목



Probe contact depends on device variant  
検出ディスクは製品種類により異なります  
与具体设备类型有关的触盘  
取決於不同設備而異的接觸探盤。  
프로브 접점은 장치에 따라 달라집니다.

Additional connection pin (rated break point ID 559758-01)

結合ピン(過度な衝撃を受けると折れる機構付 ID 559758-01)

附加插針(額定斷点ID 559758-01)

額外的連結銷(具有額定斷點 ID 559758-01)

추가 연결 핀(정격 중단점 ID 559758-01)

To be ordered separately:

別売品:

需单独订购:

須另外訂購的項目:

별도로 주문하려면:



ID 827590-01

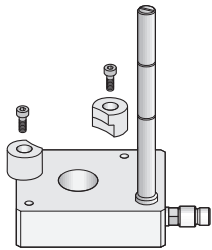
Spare parts kit for connection pin

結合ピン用の予備部品

插針的备件

連結銷零件包

연결 핀용 예비 파트 키트



ID 767594-01

Mounting base with blower/flusher jet

固定ベース (氣吹/水流噴射対応)

帶吹氣/沖洗噴嘴的安裝座

具備吹氣/沖水的安裝底座

설치 베이스(블로워/플러셔 제트)



ID 574752-01

Probe contact

檢出ディスク

觸盤

接觸探盤

프로브 접촉



ID 527801-01



ID 676497-01

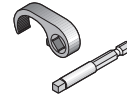
For lathe tool

旋盤用

車刀應用

對於車床

선반 공구용



ID 1037830-01

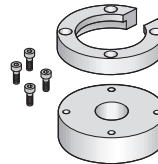
Torque wrench adapter

トルクレンチアダプタ

扭矩扳手工具

使用扭力扳手時的轉接配件

토크 렌치 어댑터



ID 332400-01

Mounting base

固定ベース

安裝座

安裝底座

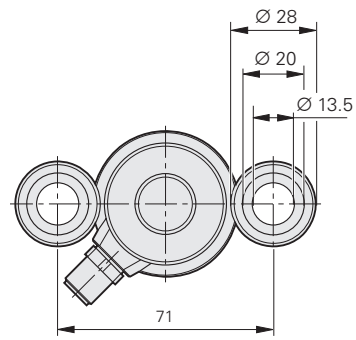
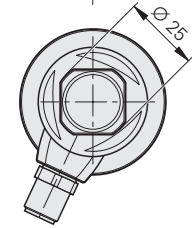
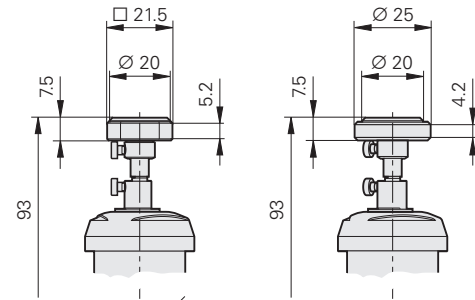
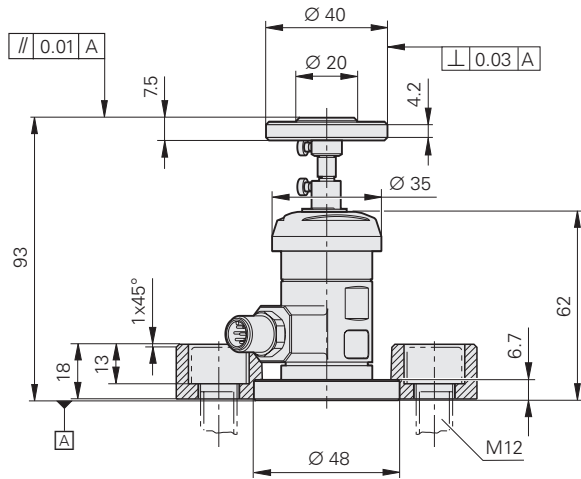
설치 베이스

**Dimensions**  
**Abmessungen**  
**Dimensioni**  
**Dimensiones**

mm



Tolerancing ISO 8015  
 ISO 2768 - m H  
 < 6 mm: ±0.2 mm

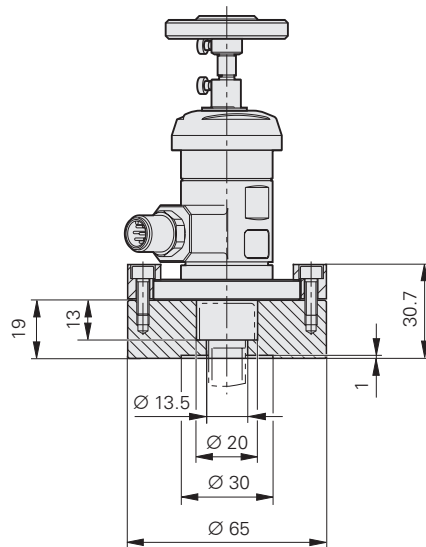


Mounting with fixing clamps  
 Befestigung mit Spannpratzen  
 Fixation avec griffes de serrage  
 Fissaggio con graffette  
 Fijación con garras excéntricas

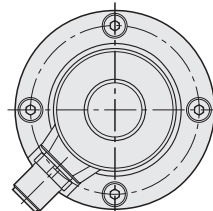
mm



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm



Fastening on mounting base (accessory)  
*Befestigung auf Montagesockel (Zubehör)*  
Fixation avec socle de montage (accessoire)  
*Fissaggio della dima di montaggio (accessorio)*  
Fijación sobre zócalo de montaje (accesorio)



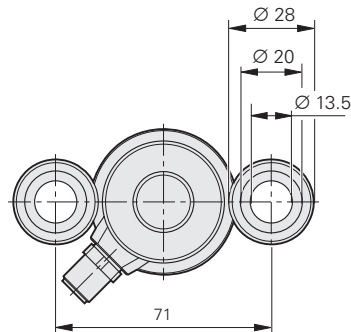
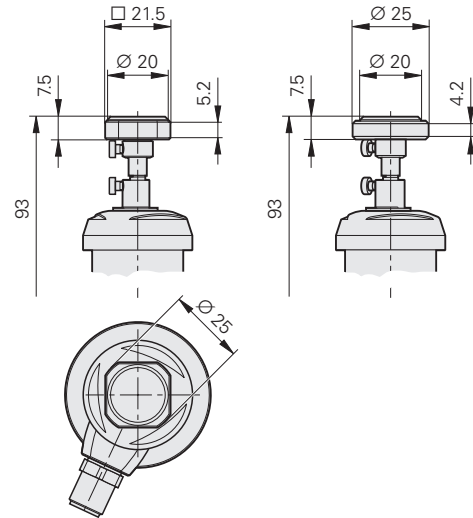
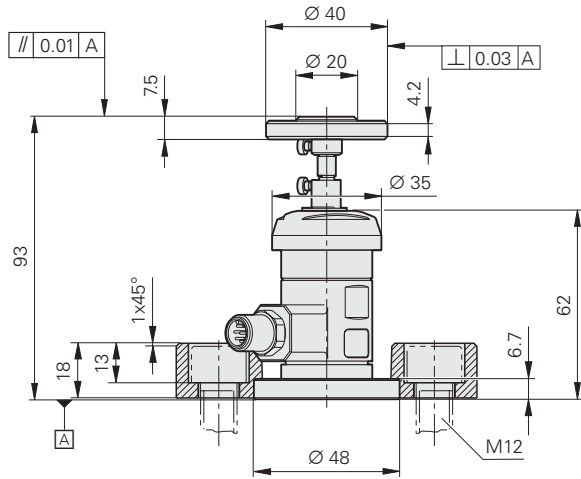
## Dimensions

寸法  
尺寸  
尺寸  
규격

mm



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm

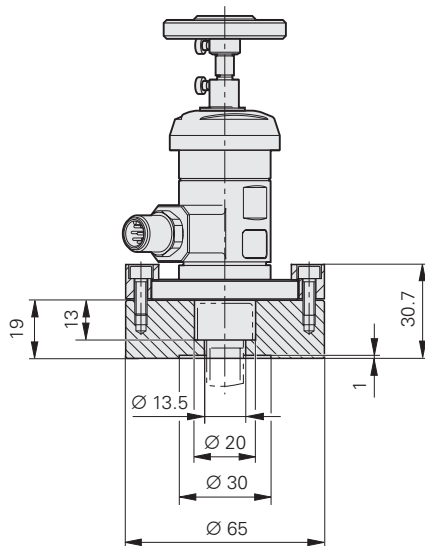


Mounting with fixing clamps  
固定クランプによる取付け  
用固定夹安装  
使用固定夹安装  
고정 클램프에 설치

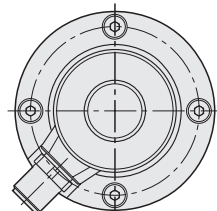
mm



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm



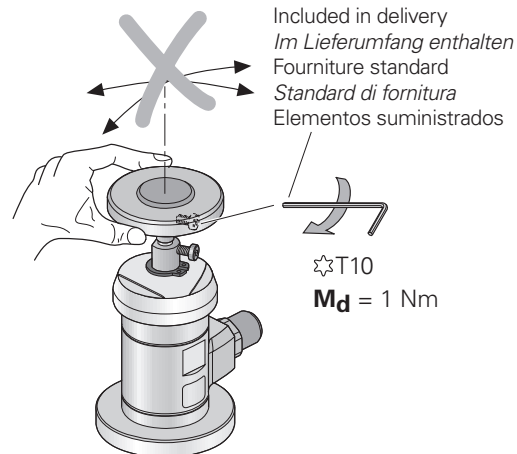
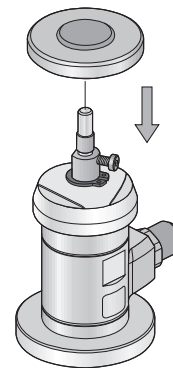
Fastening on mounting base (accessory)  
固定ベースを使用した取付け (別売品)  
固定在安裝座上 (配件)  
使用安裝基座 (配件) 固定  
설치 베이스에 고정(액세서리)



**Mounting the probe contact**  
**Montage Antastelement**  
**Montage élément de palpéage**  
**Montaggio dell'elemento di tastatura**  
**Montaje elemento de palpación**



**Caution:** Too much force can destroy the connection pin  
**Achtung:** *Krafteinwirkung kann Verbindungsstift zerstören*  
**Attention:** La force exercée peut détruire la tige de liaison  
**Attenzione:** *una forza eccessiva potrebbero rompere le spine di collegamento*  
**Atención:** La aplicación de fuerza puede dañar el vástago de unión





## Mounting the probe contact

検出ディスクの取付け

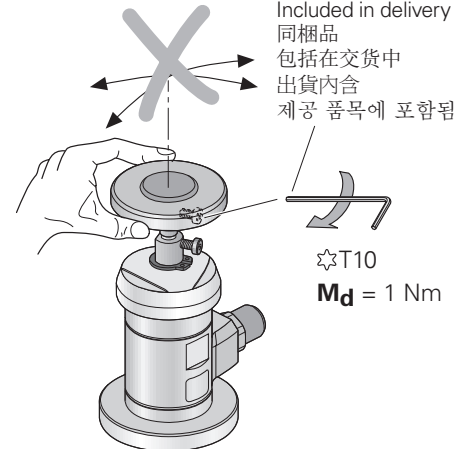
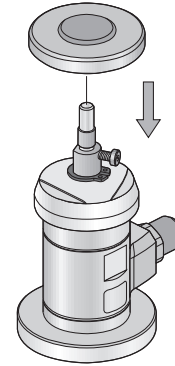
安裝触盘

安裝接觸探盤

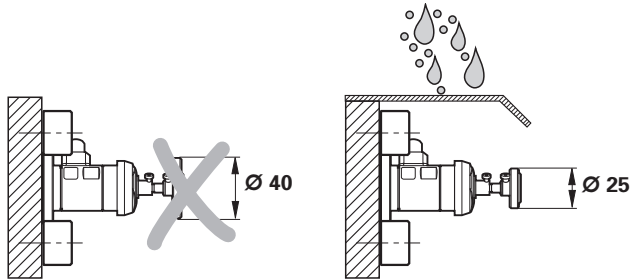
프로브 접촉 설치



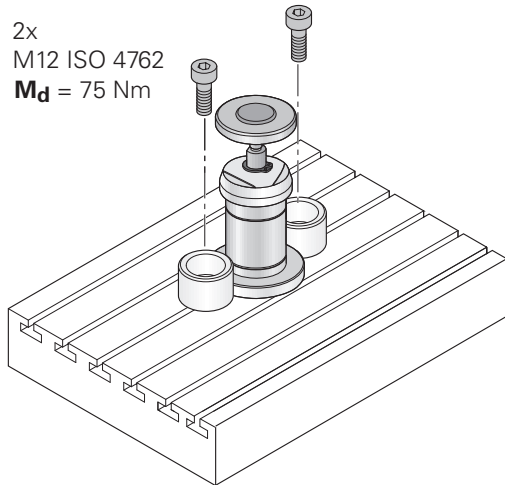
**Caution:** Too much force can destroy the connection pin  
**警告:** 力を加え過ぎると結合ピンが折れることがあります  
**小心:** 严禁对插针的作用力过大, 否则可导致其损坏  
**請注意:** 過大的力量可能破壞連結銷  
**주의:** 힘을 너무 세게 주면 연결 핀이 손상될 수 있습니다.



Assembly  
Montage  
Montage  
Montaggio  
Montaje

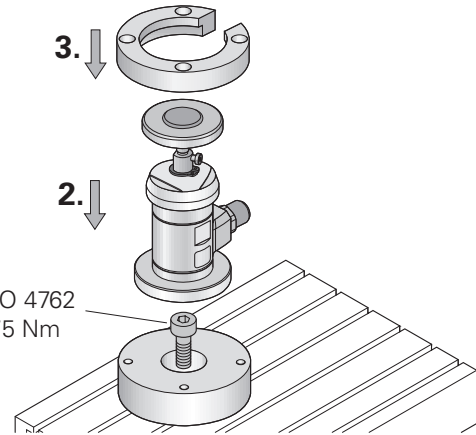


2x  
M12 ISO 4762  
 $M_d = 75 \text{ Nm}$



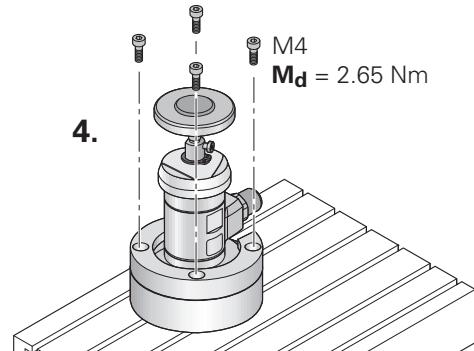
1.

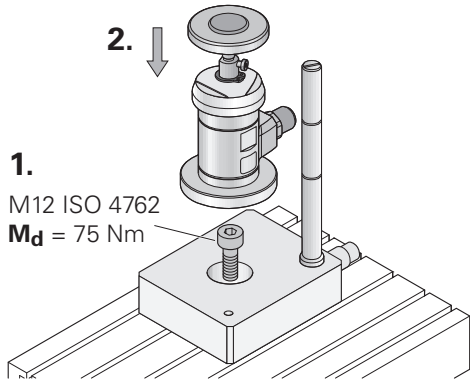
M12 ISO 4762  
 $M_d = 75 \text{ Nm}$



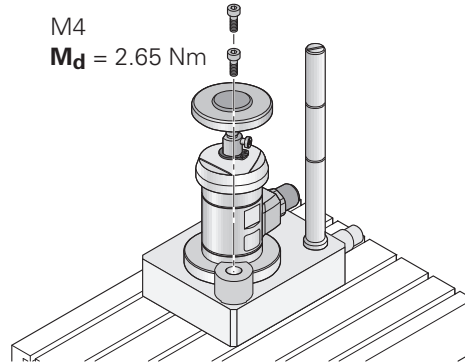
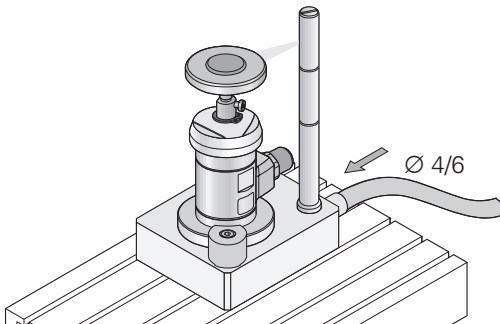
4.

M4  
 $M_d = 2.65 \text{ Nm}$

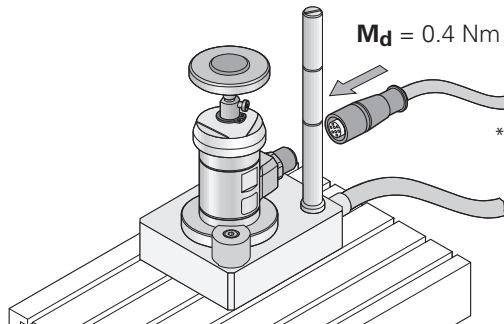




Connection for compressed air M5  
Anschluss Druckluft M5  
Raccordement d'air comprimé M5  
Attacco aria compressa M5  
Conexión aire comprimido M5



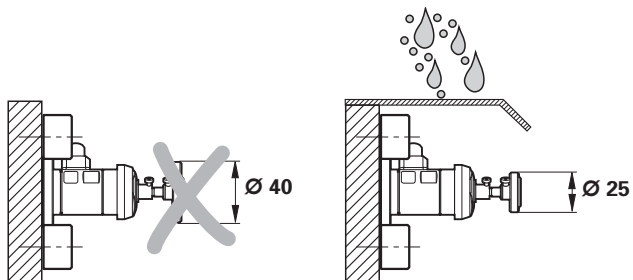
Screw on cable connection with torque adapter <sup>\*)</sup> ID 1037830-01  
Kabelverbindung mit Drehmomentadapter <sup>\*)</sup> ID 1037830-01 anschrauben  
Visser le câble avec l'adaptateur dynamométrique <sup>\*)</sup> ID 1037830-01  
Avvitare il cavo con adattatore dinamometrico <sup>\*)</sup> ID 1037830-01  
Enroscar el empalme de cable con adaptador del par <sup>\*)</sup> ID 1037830-01



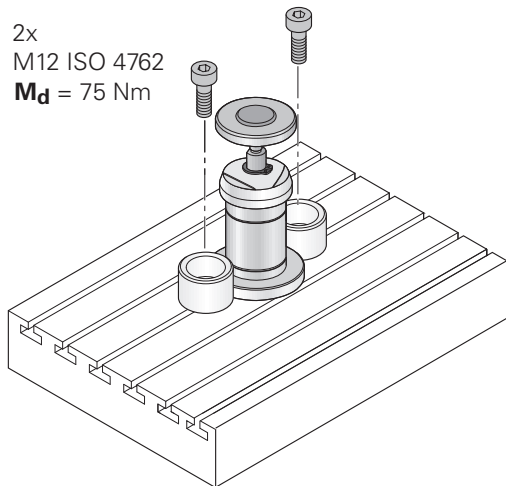
<sup>\*)</sup> Order separately  
Separat bestellen  
A commander séparément  
Da ordinare separatamente  
Para pedir por separado

## Mounting

取付け  
安裝  
安裝  
마운팅

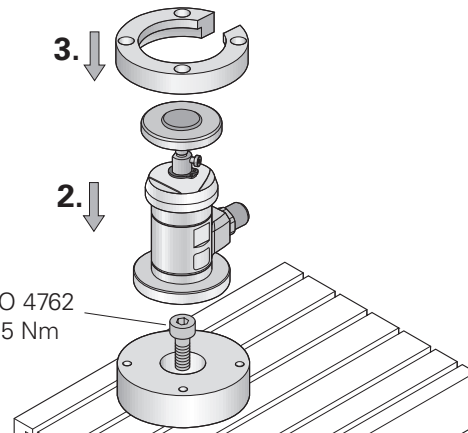


2x  
M12 ISO 4762  
 $M_d = 75 \text{ Nm}$



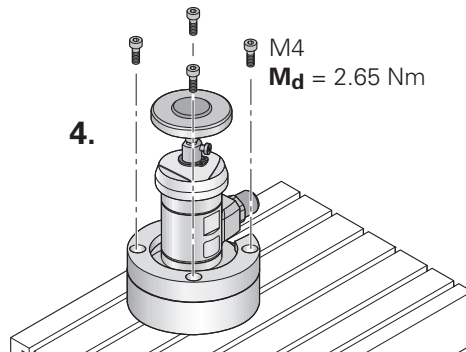
1.

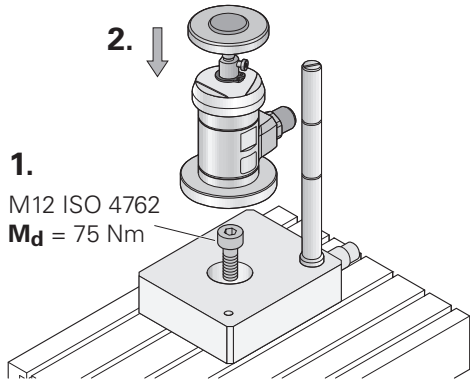
M12 ISO 4762  
 $M_d = 75 \text{ Nm}$



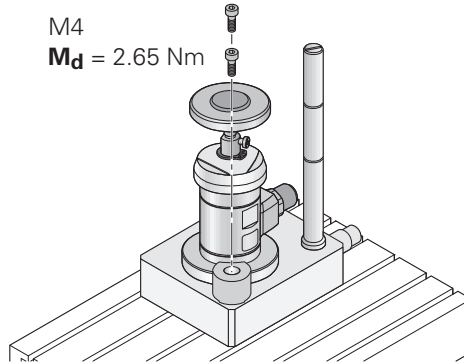
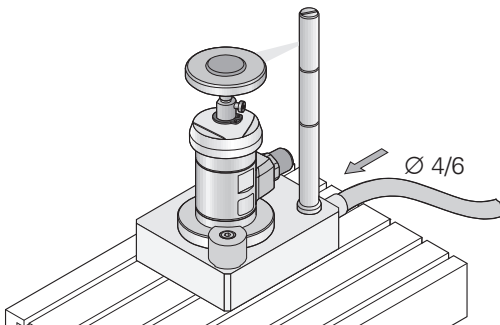
4.

M4  
 $M_d = 2.65 \text{ Nm}$

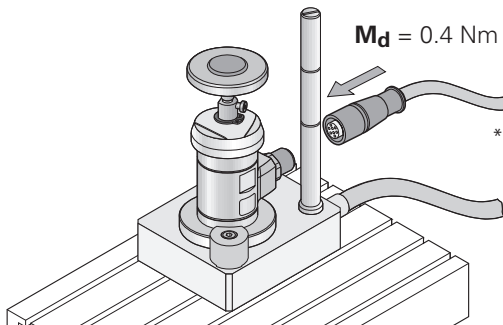




Connection for compressed air M5  
 圧縮空気接続口 M5  
 连接压缩空气M5  
 连接壓縮空氣的M5接頭  
 압축 공기 M5 연결

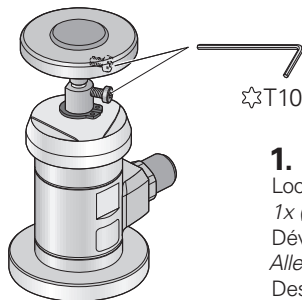


Screw on cable connection with torque adapter<sup>\*)</sup> ID 1037830-01  
 トルクレンチアダプタを用いてケーブル接続をねじ締めしてください<sup>\*)</sup> ID 1037830-01  
 用扭矩扳手紧固电缆接头<sup>\*)</sup> ID 1037830-01  
 使用扭力扳手的轉接配件鎖緊連接電纜<sup>\*)</sup> ID 1037830-01  
 토크 어댑터로 케이블 연결을 나사로 조입니다.<sup>\*)</sup> ID 1037830-01

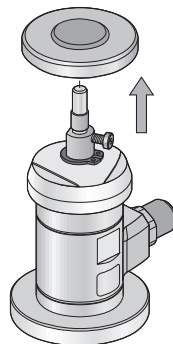


<sup>\*)</sup> Order separately  
 別途注文してください  
 单独订购  
 分別定購料件  
 별도 주문 품목

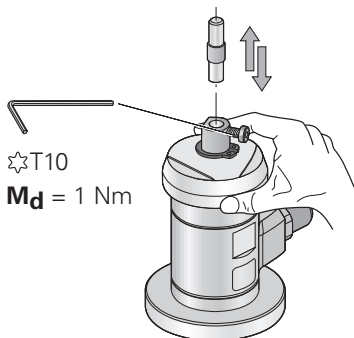
**Exchanging the connection pin / probe contact**  
**Verbindungsstift / Antastelement wechseln**  
**Remplacer la tige d'assemblage / l'élément de palpation**  
**Sostituzione di spina di collegamento/elemento di tastatura**  
**cambiar palpador / vástago de unión**



- 1.**  
Loosen 1 (2) screw(s)  
*1x (2x) lösen*  
Dévisser 1x (x2)  
*Allentare 1x (2x)*  
Desatornillar 1x (2x)

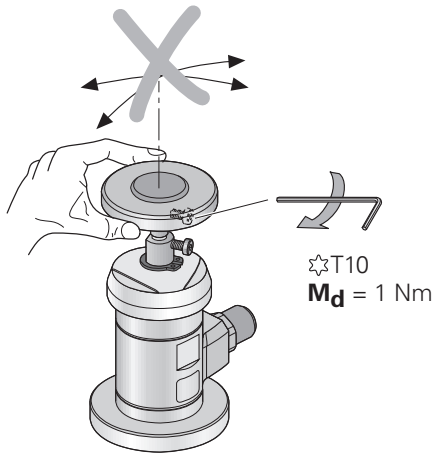


- 2.**  
Remove the probe contact  
*Antastelement entnehmen*  
Enlever l'élément de palpation  
*Rimuovere l'elemento di tastatura*  
Antastelement Retirar el elemento de palpación



- 3.**  
Exchange the connection pin  
*Verbindungsstift auswechseln*  
Remplacer la tige d'assemblage  
*Sostituire la spina di collegamento*  
Cambiar el vástago de unión

Use a new screw (included in items supplied)  
*neue Schraube verwenden (Lieferumfang)*  
utiliser des vis neuves (fourniture standard)  
*Utilizzare una vite nuova (standard di fornitura)*  
utilizar un tornillo nuevo (alcance del suministro)



#### 4.

Fasten the probe contact  
*Antastelement befestigen*  
 Fixer l'élément de palpage  
*Fissare l'elemento di tastatura*  
 Fijar el elemento de palpación

Use a new screw (included in items supplied)  
*neue Schraube verwenden (Lieferumfang)*  
 utiliser des vis neuves (fourniture standard)  
*Utilizzare una vite nuova (standard di fornitura)*  
 utilizar un tornillo nuevo (alcance del suministro)

☆T10  
 $M_d = 1 \text{ Nm}$

#### 5.

Recalibrate the touch probe (with calibration cycle of the control)  
*Tastsystem neu kalibrieren (durch Kalibrierzyklus der Steuerung)*  
 Réétalonner le palpeur (avec cycle d'étalonnage de la commande)  
*Ricalibrare il tastatore (con ciclo di calibrazione del controllo numerico)*  
 Calibrar de nuevo el palpador (con el ciclo de calibración del control)



**Caution:** Too much force can destroy the connection pin

**Achtung:** *Krafteinwirkung kann Verbindungsstift zerstören*

**Attention:** la force exercée peut détériorer la tige d'assemblage

**Attenzione:** *una forza eccessiva potrebbe rompere la spina di collegamento*

**Atención:** La aplicación de fuerza puede dañar el vástago de unión

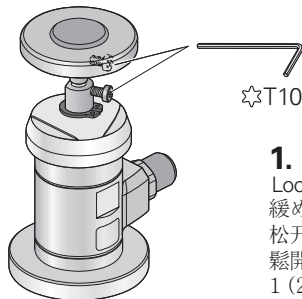
## Exchanging the connection pin / probe contact

結合ピン/検出ディスクの交換

更換插針 / 觸盤

更換連結銷/接觸探盤

연결 핀/프로브 접점을 교환합니다.



**1.**

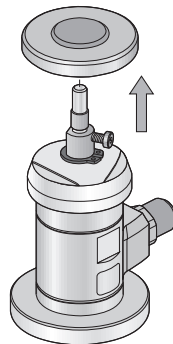
Loosen 1 (2) screw(s)

緩める1 (2) 締める(s)

松开1 (2) 螺丝

鬆開1 (2) 螺絲 (S)

1 (2) 나사의 조임을 풀니다.



**2.**

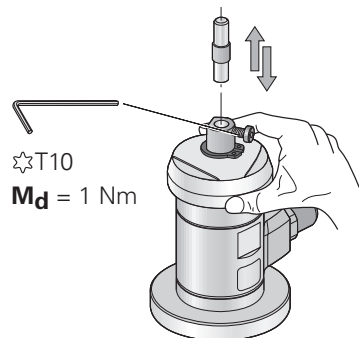
Remove the probe contact

検出ディスクを取外してください

拆下觸盤

拆下接觸探盤

프로브 접점을 제거합니다.



**3.**

Exchange the connection pin

結合ピンの交換

更換插針

更換連結銷

연결 핀 교환

Use a new screw (included in items supplied)

新しいねじを使用してください(同梱されています)

用新螺丝 (在所提供的零部件中)

使用新的螺絲 (包含在隨附的配件)

새 나사를 사용합니다(제공 품목에 포함).



#### 4.

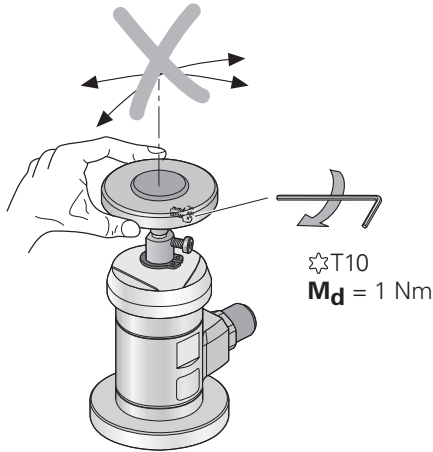
Fasten the probe contact

検出ディスクをしっかりと取付けてください

固定触盤

鎖固接觸探盤

프로브 접점을 조입니다.



Use a new screw (included in items supplied)

新しいねじを使用してください(同梱されています)

用新螺丝(在所提供的零部件中)

使用新的螺丝(包含在随附的配件)

새 나사를 사용합니다(제공 품목에 포함).

#### 5.

Recalibrate the touch probe (with calibration cycle of the control)

再度校正してください(制御装置の校正サイクルを使用)

校准测头(用数控系统的校准循环)

使用控制器的校准程式以重新校准接触探头

터치 프로브를 다시 교정합니다(컨트롤의 교정 사이클 사용).



**Caution:** Too much force can destroy the connection pin

**警告:** 力を加えすぎると結合ピンが折れることがあります

**小心:** 严禁对插针的作用力过大, 否则可导致其损坏

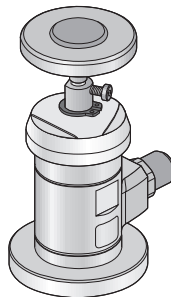
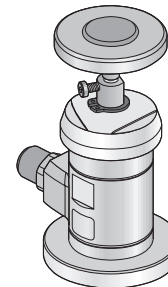
**請注意:** 過大的力量可能破壞連結銷

**주의:** 힘을 너무 세게 주면 연결 핀이 손상될 수 있습니다.

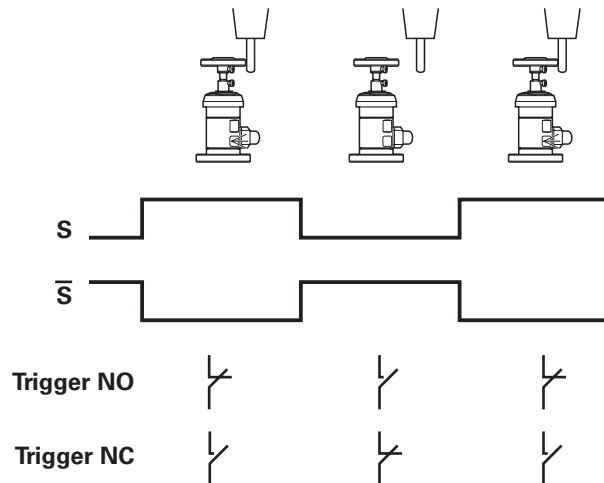
**Electrical data**  
**Elektrische Kennwerte**  
**Caractéristiques électriques**  
**Dati elettrici**  
**Catacteristicas eléctricas**

**$U_p = \text{DC } 10\text{V} \dots 30\text{V}$**   
 (max. 100 mA)

Without load  
*Ohne Last*  
 Sans charge  
*Senza carico*  
 Sin carga



**HTL**



**Electrical data**

電気仕様

电气参数

電気資料

전기 데이터

**U<sub>p</sub> = DC 10V ... 30V**

(max. 100 mA)

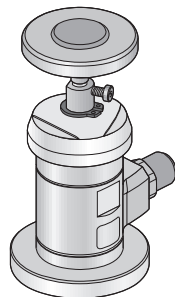
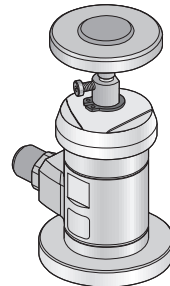
Without load

(負荷なし)

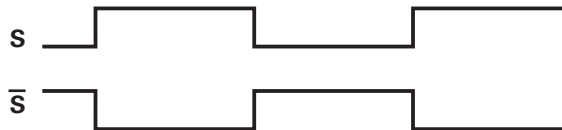
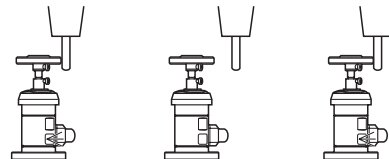
空載

無負載

부하 제외



**HTL**



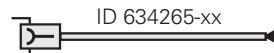
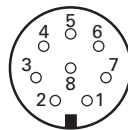
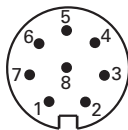
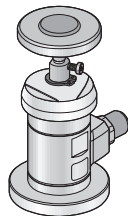
Trigger NO



Trigger NC



**Electrical connection**  
**Elektrischer Anschluss**  
**Raccordement électrique**  
**Collegamento elettrico**  
**Conexión eléctrica**

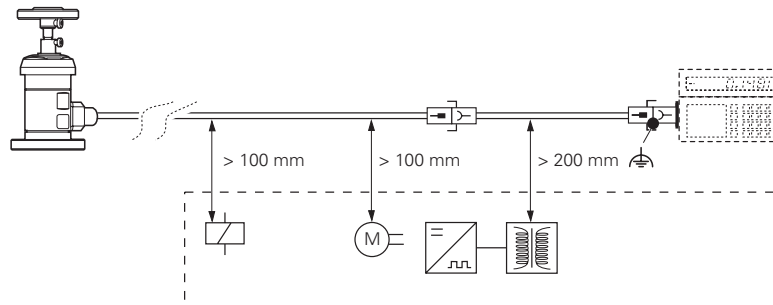


<b>2</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>8</b>
<b>U<sub>P</sub></b>	<b>0V</b>	<b>S</b>	<b><math>\bar{S}</math></b>	<b>B</b>	<b>Trigger NO</b>	<b>Trigger NC</b>	<b>Trigger 0V</b>
BU	VT	GY	PK	WH	WHGN	YE	BNGN

Cable shield connected to housing  
*Kabelschirm mit Gehäuse verbunden*  
 Blindage du câble relié au boîtier  
 Collegare lo schermo del cavo alla carcassa  
 Pantalla del cable conectada a carcasa

**Trigger NO** = normally open  
**Trigger NC** = normally closed

**B** = Ready signal  
*Bereitschaft*  
 En service  
 Segnale di pronto  
 Preparación



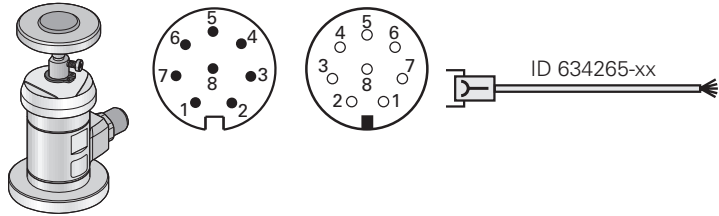
### Electrical connection

電氣的接続

电气连接

電氣連接

전기 연결



2	7	3	4	1	5	6	8
Up	0V	S	$\bar{S}$	B	Trigger NO	Trigger NC	Trigger 0V
BU	VT	GY	PK	WH	WHGN	YE	BNGN

Cable shield connected to housing

シールドはハウジングへ

電纜屏蔽層接外壳

電纜隔離層連結於外壳

하우징에 연결된 케이블 실드

Trigger NO = normally open

Trigger NC = normally closed

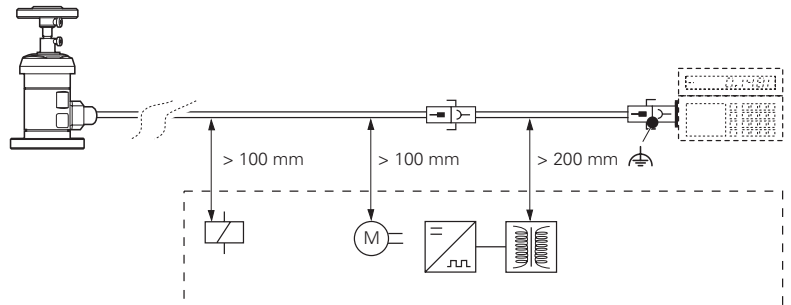
**B** = Ready signal

レディ信号

就绪信号

備妥信號

준비 신호



# HEIDENHAIN

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FAX +49 8669 5061

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