



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

9/2013

Contents
Inhalt
Sommaire
Indice
Índice

Page

4	Warnings
8	Items supplied
12	Dimensions
16	Mounting the probe contact
18	Mounting
22	Exchanging the connection pin / probe contact
26	Electrical data
28	Electrical connection

Seite

4	<i>Warnhinweise</i>
8	<i>Lieferumfang</i>
12	<i>Abmessungen</i>
16	<i>Montage Antastelement</i>
18	<i>Montage</i>
22	<i>Verbindungsstift / Antastelement wechseln</i>
26	<i>Elektrische Kennwerte</i>
28	<i>Elektrischer Anschluss</i>

Page

4	Avertissement
8	Objet de la fourniture
12	Dimensions
16	Montage élément de palpé
18	Montage
22	Remplacer la tige d'assemblage / élément de palpé
26	Caractéristiques électriques
28	Raccordement électrique

Pagina

4	<i>Avvertenze</i>
8	<i>Standard di fornitura</i>
12	<i>Dimensioni</i>
16	<i>Montaggio dell'elemento di tastatura</i>
18	<i>Montaggio</i>
22	<i>Sostituzione di spina di collegamento / elemento di tastatura</i>
26	<i>Dati elettrici</i>
28	<i>Collegamento elettrico</i>

Página

4	Notas de aviso
8	Elementos suministrados
12	Dimensiones
16	Montaje elemento de palpación
18	Montaje
22	cambiar palpador / vástago de unión
26	Catacterísticas eléctricas
28	Conexión eléctrica

Contents

目次
目录
目錄
목차

Page

5 Warnings
10 Items supplied
14 Dimensions
17 Mounting the probe contact
20 Mounting
24 Exchanging the connection pin / probe contact
27 Electrical data
29 Electrical connection

페이지

5 注意事項
10 梱包品
14 寸法
17 検出ディスクの取付け
20 取付け
24 結合ピン/検出ディスクの
検出ディスク
27 電気仕様
29 電氣的接続

页

5 提示
10 零部件
14 尺寸
17 安装触盘
20 安装
24 更换断点插针 /
触盘
27 电气参数
29 电气连接

頁碼

5 警告
10 供應的項目
14 尺寸
17 安裝接觸探盤
20 安裝
24 更換連結銷 /
探測板偏斜
27 電氣數據
29 電氣連接

페이지

5 경고
10 제공 품목
14 규격
17 프로브 접점 설치
20 설치
24 연결 핀 교환 /
프로브 접점
27 전기 데이터
29 전기 연결

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.

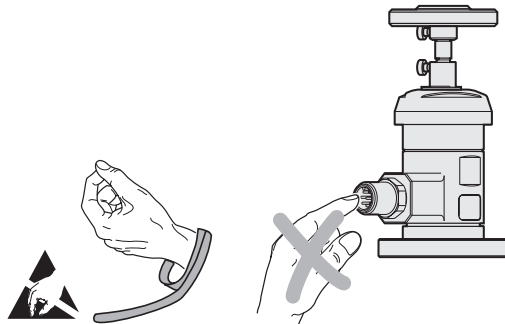
Calibrate the touch probe with the calibration cycle of the control before commissioning.

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。

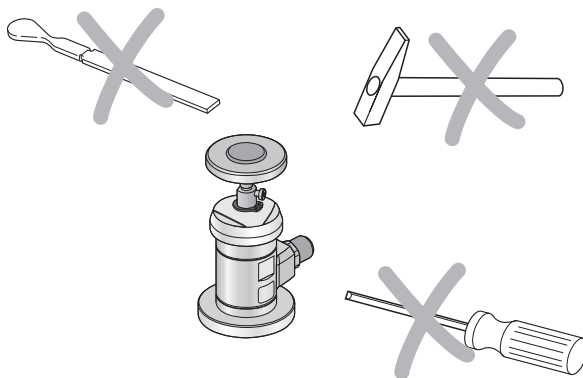
调试开始前用数控系统的校准循环校准测头。

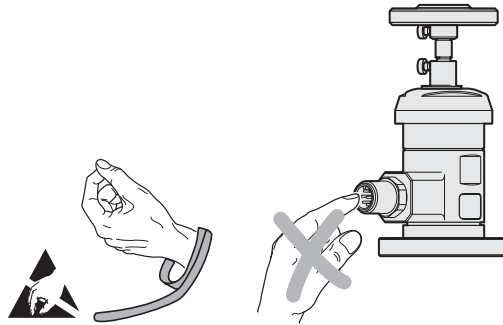
調試之前請先使用控制器的校準程式以校準接觸探頭。

커미셔닝 하기 전에 컨트롤의 교정 사이클로 터치 프로브를 교정합니다.

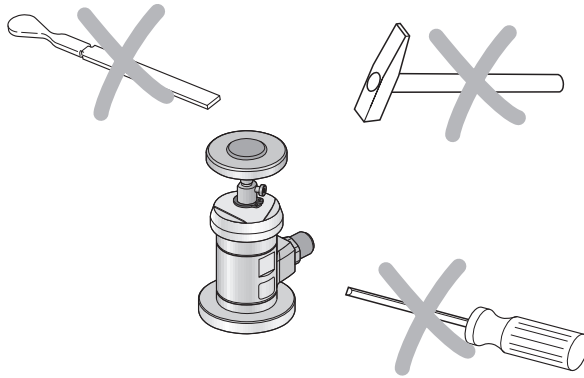


Do not drop the touch probe.
Tastsystem nicht fallen lassen.
Ne pas laisser tomber le palpeur.
Non far cadere il tastatore.
No dejar caer el palpador.

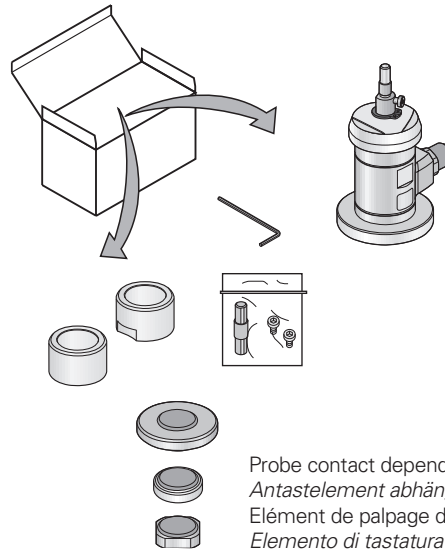




Do not drop the touch probe.
タッチプローブを落とさないでください。
请不要使测头跌落。
探針請勿掉落。
터치 프로브를 떨어뜨리면 안 됩니다.



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

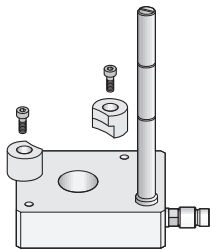
Additional connection pin (rated break point ID 559758-01)
zusätzlicher Verbindungsstift (mit Sollbruchstelle ID 559758-01)
tige de liaison supplémentaire (avec point de rupture ID 559758-01)
spine di collegamento aggiuntive (con punta di rottura nominale ID 559758-01)
vástago de unión adicional (con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



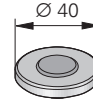
ID 767594-01

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 palpage
Elemento di tastatura
Elemento de palpación

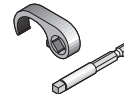


ID 527801-01



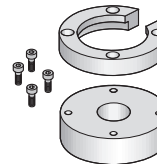
ID 676497-01

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

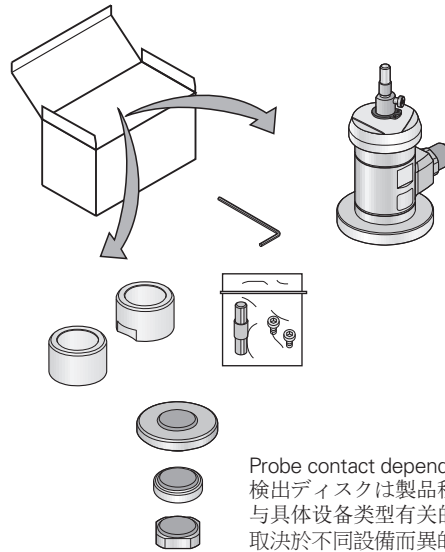
Items supplied

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

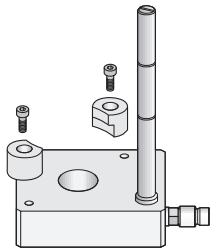
Spare parts kit for connection pin

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

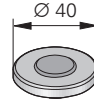
Probe contact

檢出ディスク

觸盤

接觸探盤

프로브 접촉



ID 527801-01



ID 676497-01

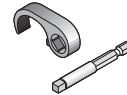
For lathe tool

旋盤用

車刀應用

對於車床

선반 공구용



ID 1037830-01

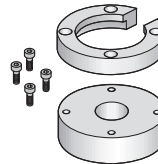
Torque wrench adapter

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

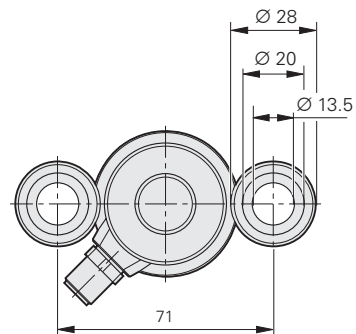
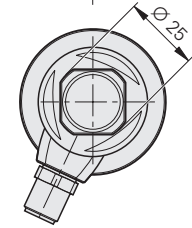
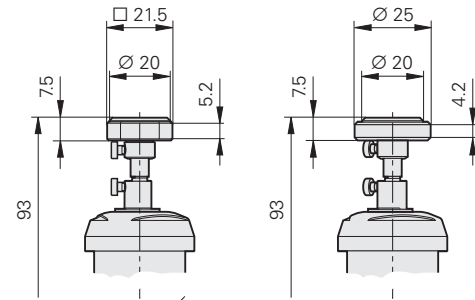
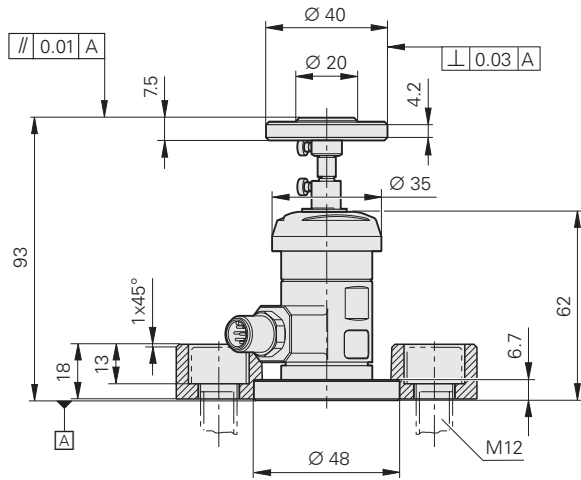
설치 베이스

Dimensions
Abmessungen
Dimensioni
Dimensiones

mm



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

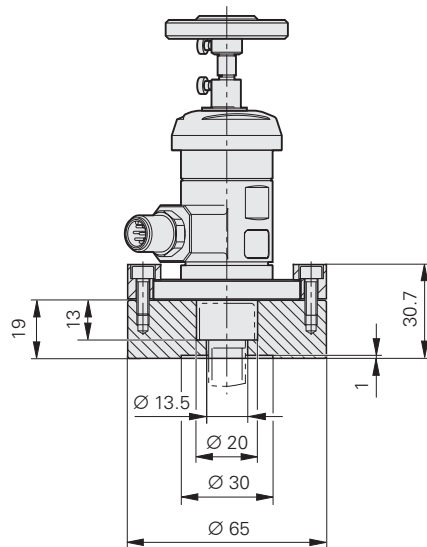


Mounting with fixing clamps
Befestigung mit Spannpratzen
 Fixation avec griffes de serrage
Fissaggio con graffette
 Fijación con garras excéntricas

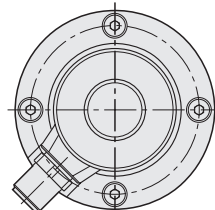
mm



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



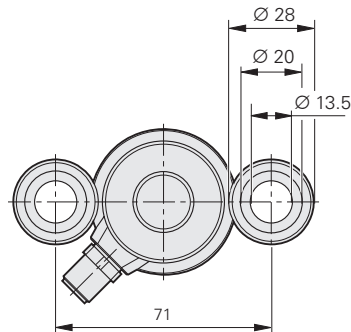
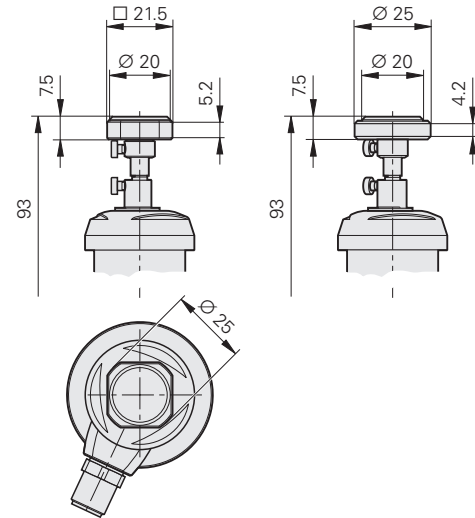
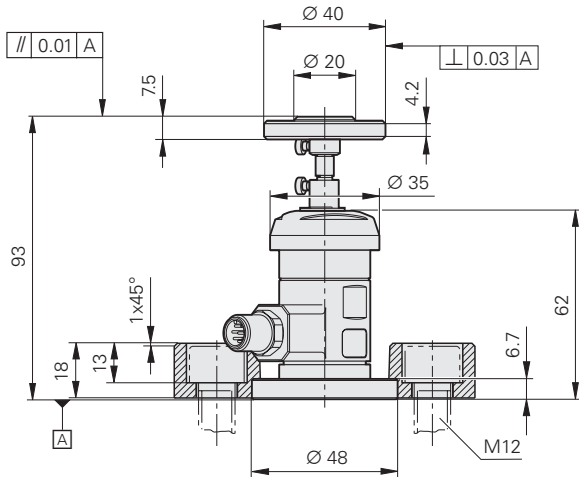
Dimensions

寸法
尺寸
尺寸
규격

mm



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

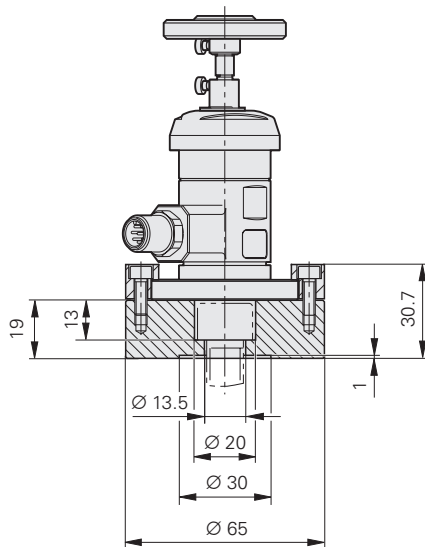


Mounting with fixing clamps
固定クランプによる取付け
用固定夾安裝
使用固定夾安裝
고정 클램프에 설치

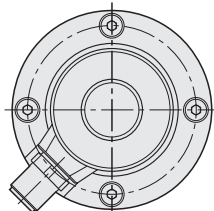
mm



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



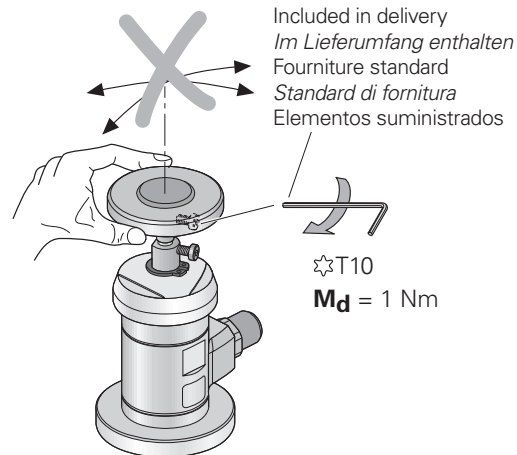
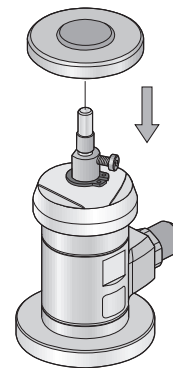
Fastening on mounting base (accessory)
固定ベースを使用した取付け (別売品)
固定在安裝座上 (輔件)
使用安裝基座 (配件) 固定
설치 베이스에 고정(액세서리)



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

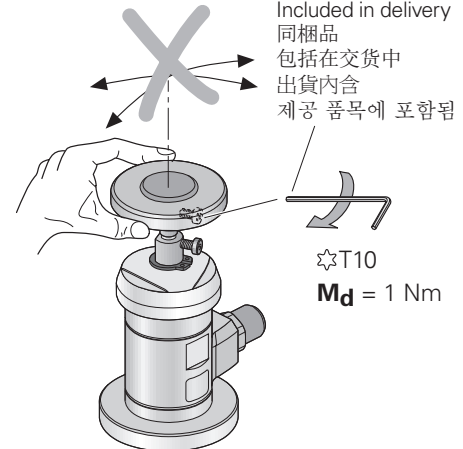
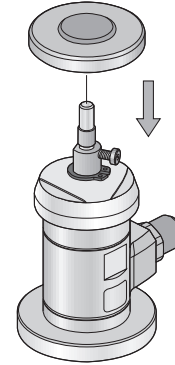
安裝触盘

安裝接觸探盤

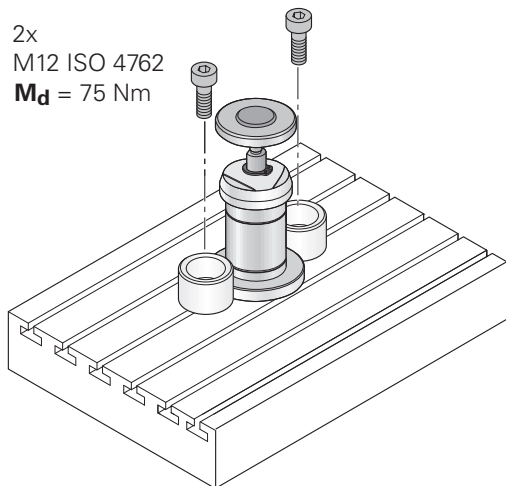
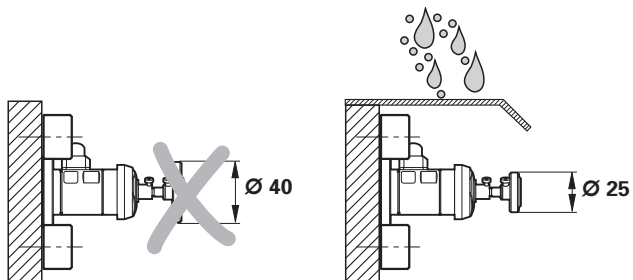
프로브 접촉 설치



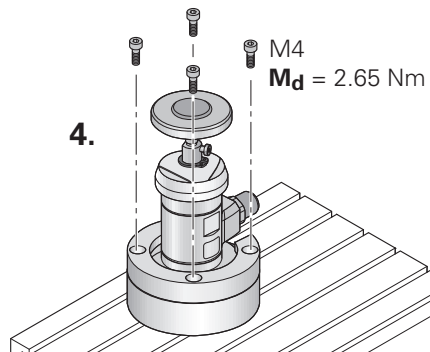
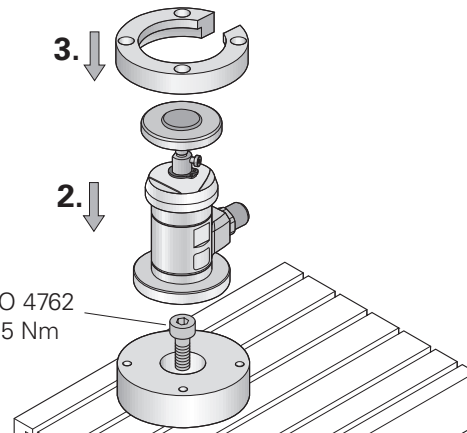
Caution: Too much force can destroy the connection pin
警告: 力を加え過ぎると結合ピンが折れることがあります
小心: 严禁对插针的作用力过大, 否则可导致其损坏
請注意: 過大的力量可能破壞連結銷
주의: 힘을 너무 세게 주면 연결 핀이 손상될 수 있습니다.

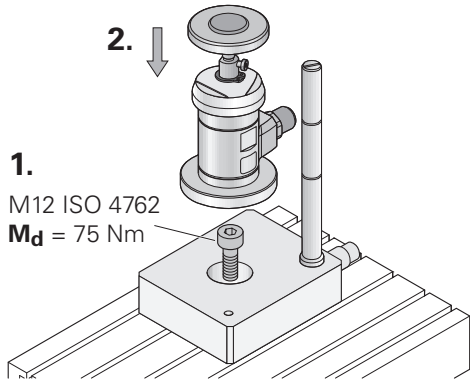


Assembly
Montage
Montage
Montaggio
Montaje

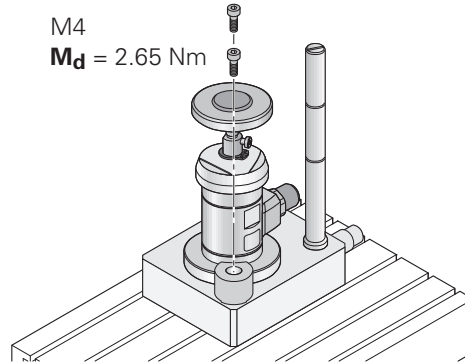
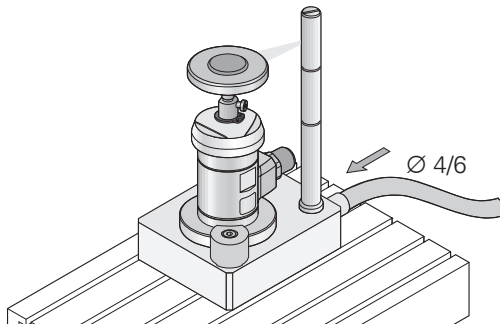


1.
M12 ISO 4762
M_d = 75 Nm

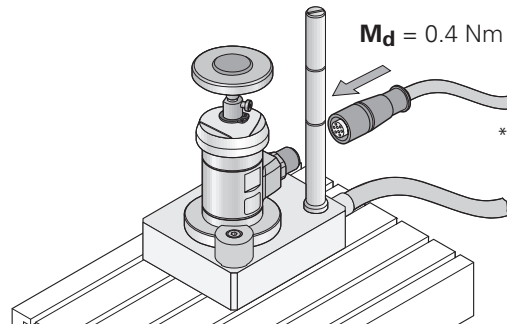




Connection for compressed air M5
Anschluss Druckluft M5
Raccordement d'air comprimé M5
Attacco aria compressa M5
Conexión aire comprimido M5



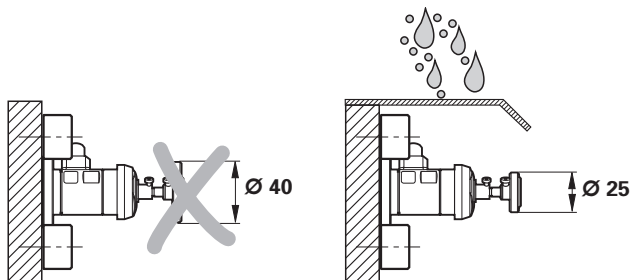
Screw on cable connection with torque adapter ^{*)} ID 1037830-01
Kabelverbindung mit Drehmomentadapter ^{*)} ID 1037830-01 anschrauben
Visser le câble avec l'adaptateur dynamométrique ^{*)} ID 1037830-01
Avvitare il cavo con adattatore dinamometrico ^{*)} ID 1037830-01
Enrosar el empalme de cable con adaptador del par ^{*)} ID 1037830-01



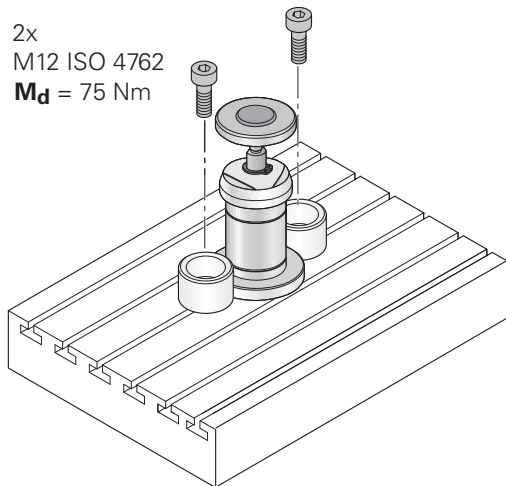
^{*)} Order separately
Separat bestellen
A commander séparément
Da ordinare separatamente
Para pedir por separado

Mounting

取付け
安裝
安裝
마운팅

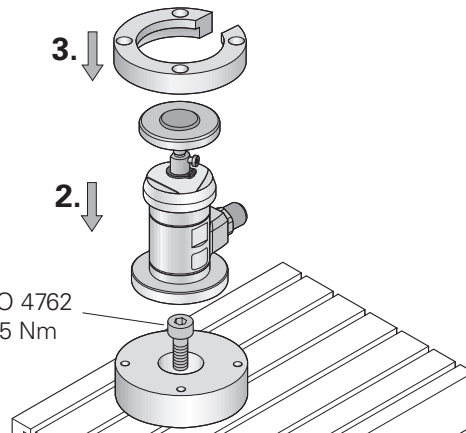


2x
M12 ISO 4762
 $M_d = 75 \text{ Nm}$



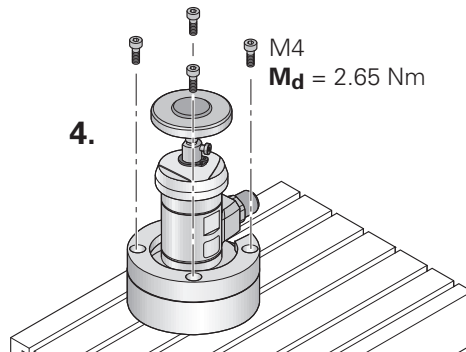
1.

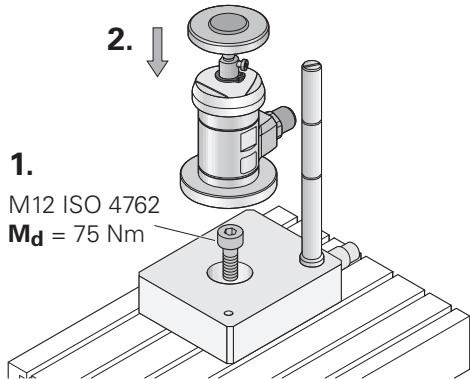
M12 ISO 4762
 $M_d = 75 \text{ Nm}$



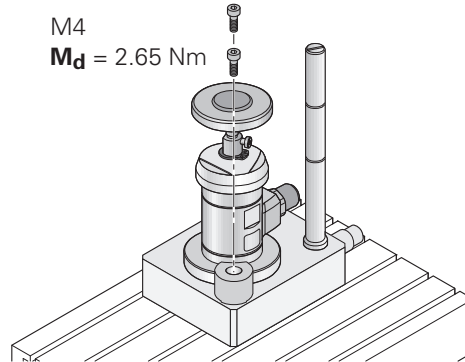
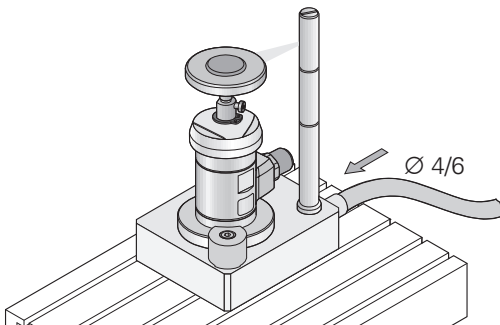
4.

M4
 $M_d = 2.65 \text{ Nm}$

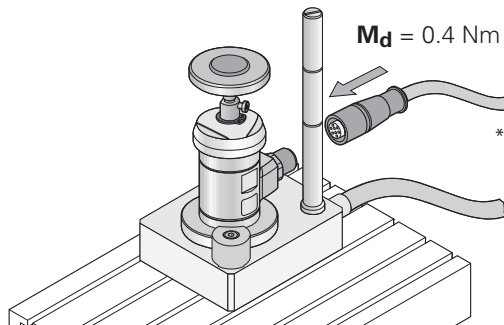




Connection for compressed air M5
 圧縮空気接続口 M5
 连接压缩空气M5
 连接壓縮空氣的M5接頭
 압축 공기 M5 연결

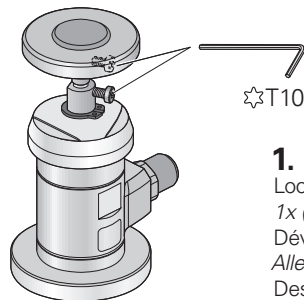


Screw on cable connection with torque adapter^{*)} ID 1037830-01
 トルクレンチアダプタを用いてケーブル接続をねじ締めしてください^{*)} ID 1037830-01
 用扭矩扳手紧固电缆接头^{*)} ID 1037830-01
 使用扭力扳手的轉接配件鎖緊連接電纜^{*)} ID 1037830-01
 토크 어댑터로 케이블 연결을 나사로 조입니다.^{*)} ID 1037830-01

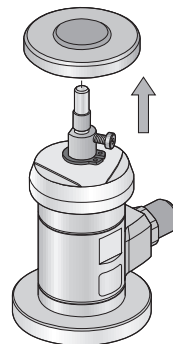


^{*)} Order separately
 別途注文してください
 单独订购
 分別定購料件
 별도 주문 품목

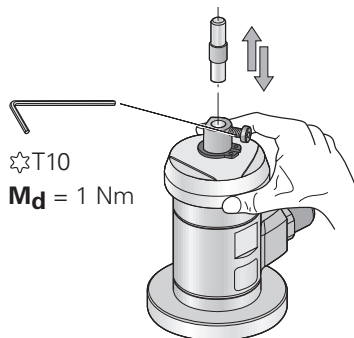
Exchanging the connection pin / probe contact
Verbindungsstift / Antastelement wechseln
Remplacer la tige d'assemblage / l'élément de palpation
Sostituzione di spina di collegamento/elemento di tastatura
cambiar palpador / vástago de unión



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

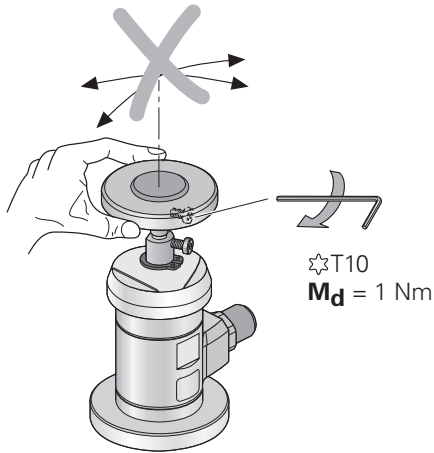


- 2.**
Remove the probe contact
Antastelement entnehmen
Enlever l'élément de palpation
Rimuovere l'elemento di tastatura
Antastelement Retirar el elemento de palpación



- 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 palpge
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

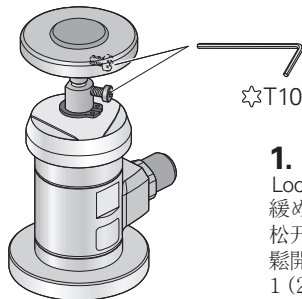
Exchanging the connection pin / probe contact

結合ピン/検出ディスクの交換

更換插針 / 觸盤

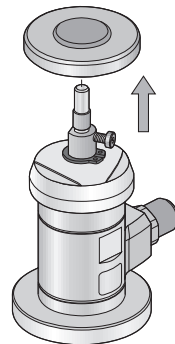
更換連結銷/接觸探盤

연결 핀/프로브 접점을 교환합니다.



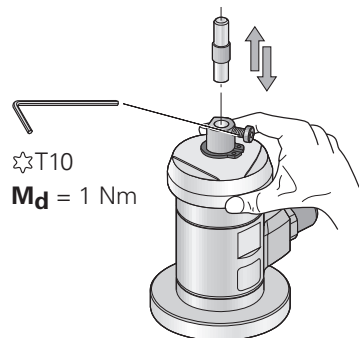
1.

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.

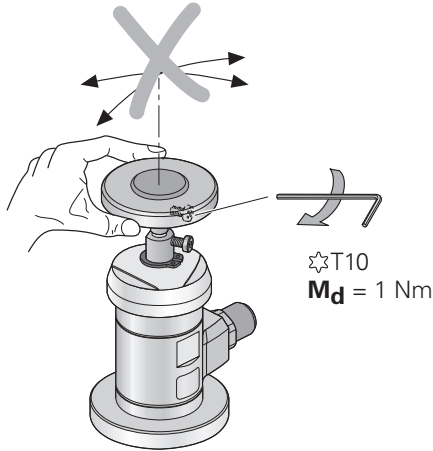
Fasten the probe contact

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

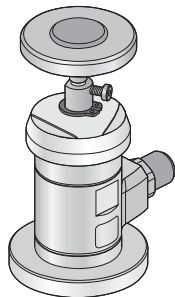
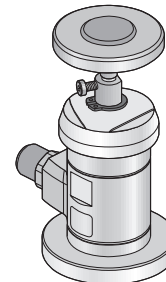
주의: 힘을 너무 세게 주면 연결 핀이 손상될 수 있습니다.

Electrical data
Elektrische Kennwerte
Caractéristiques électriques
Dati elettrici
Catacterísticas eléctricas

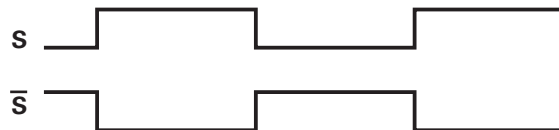
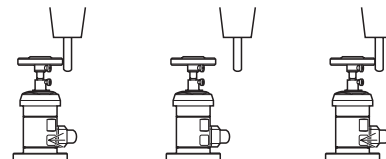
EN 50 178
 PELV \perp EN 60 204-1

Up = DC 10V ... 30V
 (max. 100 mA)

Without load
Ohne Last
 Sans charge
Senza carico
 Sin carga



HTL



Trigger NO



Trigger NC



Electrical data

電気仕様

电气参数

電気資料

전기 데이터

EN 50 178

PELV \leq EN 60 204-1

$U_p = DC 10V \dots 30V$

(max. 100 mA)

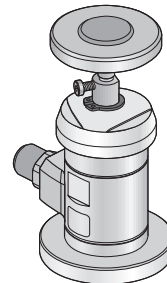
Without load

(負荷なし)

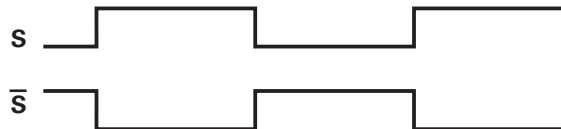
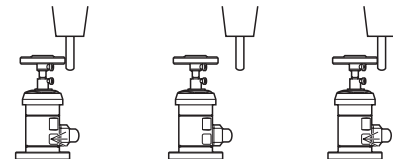
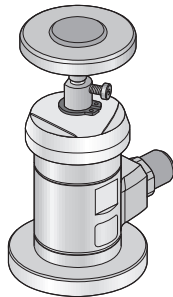
空載

無負載

부하 제외



HTL



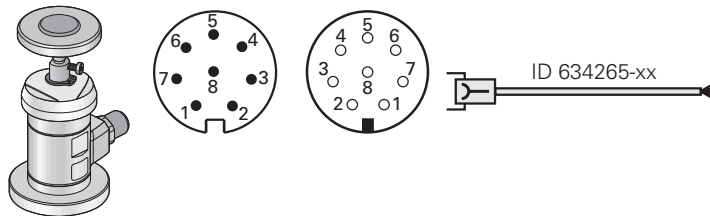
Trigger NO



Trigger NC



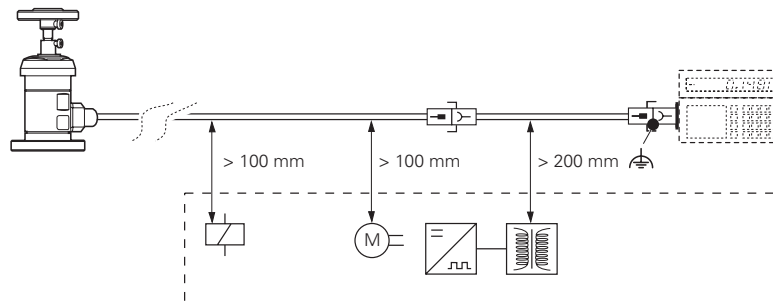
Electrical connection
Elektrischer Anschluss
Raccordement électrique
Collegamento elettrico
Conexión eléctrica



2	7	3	4	1	5	6	8
U_P	0V	S	\bar{S}	B	Trigger NO	Trigger NC	Trigger 0V
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

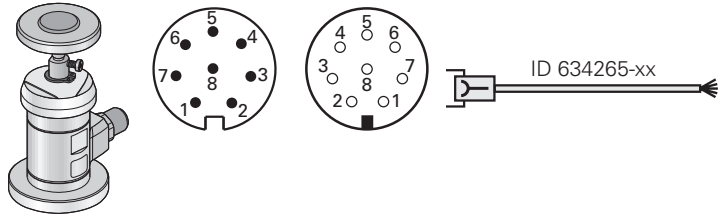
Electrical connection

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

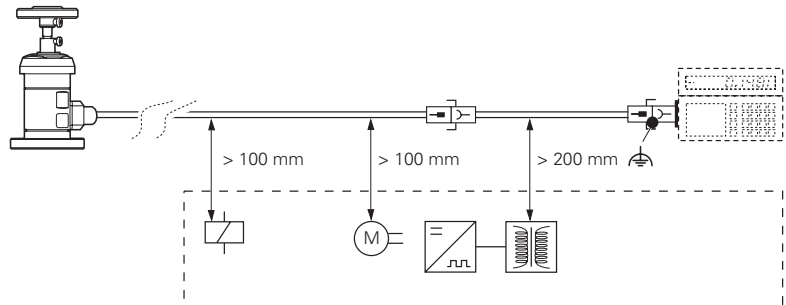
B = Ready signal

レディ信号

就绪信号

備妥信號

준비 신호



HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH

Dr.-Johannes-Heidenhain-Straße 5

83301 Traunreut, Germany

☎ +49 8669 31-0

FAX +49 8669 5061

E-mail: info@heidenhain.de

Technical support FAX +49 8669 32-1000

Measuring systems ☎ +49 8669 31-3104

E-mail: service.ms-support@heidenhain.de

TNC support ☎ +49 8669 31-3101

E-mail: service.nc-support@heidenhain.de

NC programming ☎ +49 8669 31-3103

E-mail: service.nc-pgm@heidenhain.de

PLC programming ☎ +49 8669 31-3102

E-mail: service.plc@heidenhain.de

Lathe controls ☎ +49 8669 31-3105

E-mail: service.lathe-support@heidenhain.de

www.heidenhain.de

