



# HEIDENHAIN

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

**TS 460**  
**TS 462**

7/2013

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## Warnings

**Warnhinweise**

**Avertissement**

**Avvertenze**

**Notas de aviso**



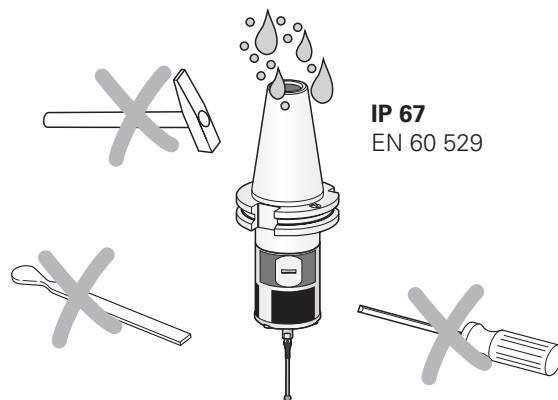
**Note:** Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.

**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.



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.

## Warnings

注意事項

提示

警告

경고



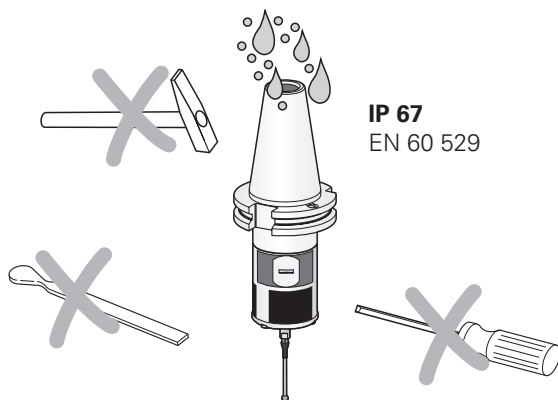
**Note:** Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.

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：安裝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.



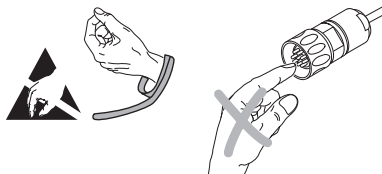
Do not drop the touch probe.

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 프루브를 떨어뜨리면 안됩니다.



Use a coin to open the battery compartment.

*Batteriefach mit einer Münze öffnen.*

*Batteriefach mit einer Münze öffnen.*

*Batteriefach mit einer Münze öffnen.*

*Batteriefach mit einer Münze öffnen.*

Provide power to position encoders only from PELV systems (EN 50178).

Provide high-frequency grounding with low impedance (EMC chapter in EN 60204-1).

*Positionsmessgeräte nur aus PELV-Systemen (EN 50178) speisen.*

*Hochfrequent niederohmige Erdung (EN 60204-1 Kap. EMV) vorsehen.*

*Positionsmessgeräte nur aus PELV-Systemen (EN 50178) speisen.*

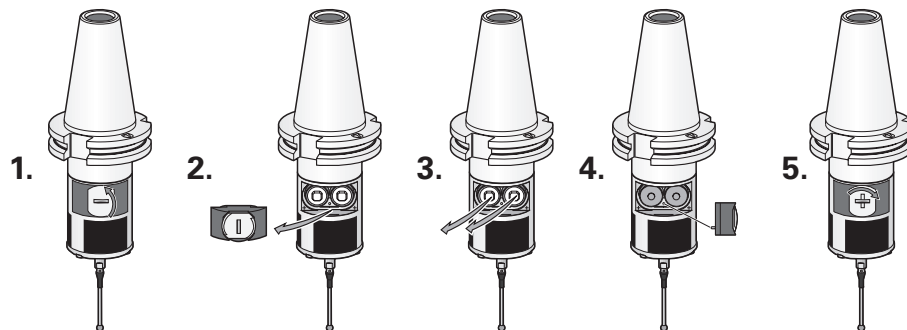
*Hochfrequent niederohmige Erdung (EN 60204-1 Kap. EMV) vorsehen.*

*Positionsmessgeräte nur aus PELV-Systemen (EN 50178) speisen.*

*Hochfrequent niederohmige Erdung (EN 60204-1 Kap. EMV) vorsehen.*

*Positionsmessgeräte nur aus PELV-Systemen (EN 50178) speisen.*

*Hochfrequent niederohmige Erdung (EN 60204-1 Kap. EMV) vorsehen.*



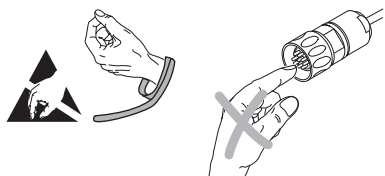
Remove the battery's protective cap before initial operation.

*Vor erster Inbetriebnahme die Schutzkappe der Batterie entfernen.*

*Enlever le capot de protection de la batterie avant la première mise en service.*

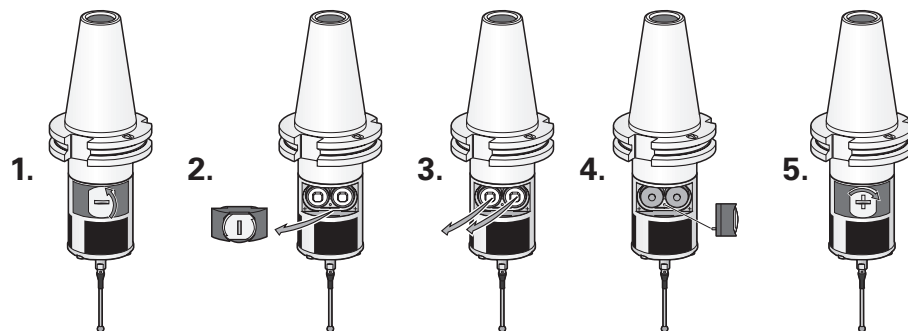
*Prima della messa in funzione rimuovere la protezione della batteria.*

*Retirar la tapa de protección de la batería antes de la primera puesta en marcha.*



Use a coin to open the battery compartment.  
 Use a coin to open the battery compartment.  
 Use a coin to open the battery compartment.  
 Use a coin to open the battery compartment.  
 Use a coin to open the battery compartment.

Provide power to position encoders only from PELV systems (EN 50178).  
 Provide high-frequency grounding with low impedance (EMC chapter in EN 60204-1).  
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 Provide high-frequency grounding with low impedance (EMC chapter in EN 60204-1).  
 Provide power to position encoders only from PELV systems (EN 50178).



Remove the battery's protective cap before initial operation.  
 初期運転の前にバッテリーの保護キャップを取り外してください。  
 开始工作前拆下电池保护盖。  
 “初始操作必須先行拆下電池保護蓋。”  
 초기 가동 전 보호 캡을 제거하세요.

## Approval for radio transmission

**Funkerlaubnis**

**Funkerlaubnis**

**Funkerlaubnis**

**Funkerlaubnis**

For operation in radio mode (see page 19).

*Für den Betrieb im Funkmodus (siehe Seite 19).*

*Für den Betrieb im Funkmodus (siehe Seite 19).*

*Für den Betrieb im Funkmodus (siehe Seite 19).*

*Für den Betrieb im Funkmodus (siehe Seite 19).*

**USA** FCC ID YJKTSX6TTX6

## FCC User information (USA only)

### acc. Section 15.19

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

### acc. Section 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### acc. Section 15.105

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Europe** 

DR. JOHANNES HEIDENHAIN GmbH hereby declares that the TS460 and TS462 touch probe systems are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.  
The EC Declaration of Conformity can be requested from

DR. JOHANNES HEIDENHAIN GmbH  
Dr.-Johannes-Heidenhain-Straße 5  
83301 Traunreut, Germany

or [www.heidenhain.de](http://www.heidenhain.de)

*Die DR. JOHANNES HEIDENHAIN GmbH erklärt hiermit, dass sich die Tastsysteme TS460 und TS462 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befinden.  
Die Konformitätserklärung kann unter folgender Adresse angefordert werden:*

DR. JOHANNES HEIDENHAIN GmbH  
Dr.-Johannes-Heidenhain-Straße 5  
83301 Traunreut, Germany

oder [www.heidenhain.de](http://www.heidenhain.de)

**Canada** IC: 11148A-TSX6TTX6

**RSS Gen Issue 3 Sect. 7.1.3**

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**Approval for radio transmission**  
**Approval for radio transmission**  
**Approval for radio transmission**  
**Approval for radio transmission**  
**Approval for radio transmission**

For operation in radio mode (see page 20.)  
For operation in radio mode (see page 20).  
For operation in radio mode (see page 20).  
For operation in radio mode (see page 20).  
For operation in radio mode (see page 20).

**Japan**                      TBD

**China**                      TBD

**Taiwan**                      TBD

**Korea**                      TBD

**Specifications of the following pages are preliminary**

## Items supplied

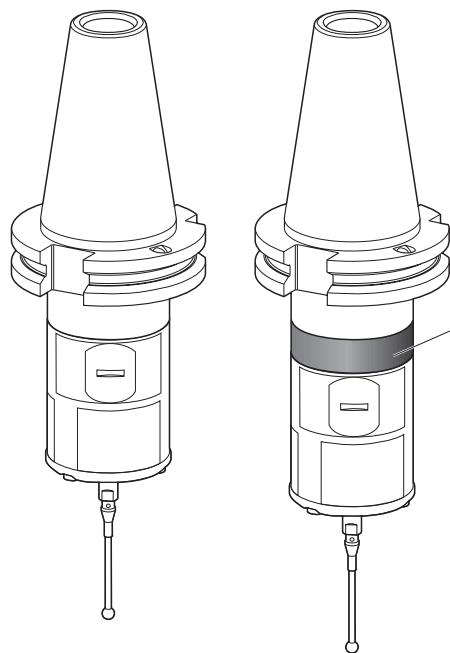
*Lieferumfang*

*Objet de la fourniture*

*Standard di fornitura*

*Suministro*

### TS 460



Items supplied depend on product variant

*Lieferumfang abhängig von Gerätevariante*

*Lieferumfang abhängig von Gerätevariante*

*Lieferumfang abhängig von Gerätevariante*

*Lieferumfang abhängig von Gerätevariante*

Collision protection

*Kollisionsschutz*

*Kollisionsschutz*

*Kollisionsschutz*

*Kollisionsschutz*



Replacement stylus

*Ersatzstift*

*Ersatzstift*

*Ersatzstift*

*Ersatzstift*



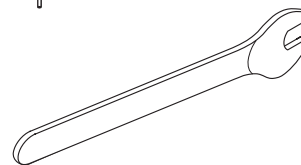
Assembly tool

*Montagewerkzeug*

*Montagewerkzeug*

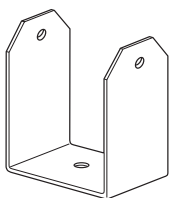
*Montagewerkzeug*

*Montagewerkzeug*



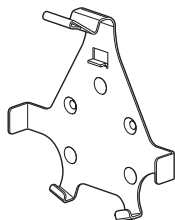
To be ordered separately:  
*Separat bestellen:*  
 Commander séparément:  
*Da ordinare separatamente:*  
 Pedir por separado:

ID 370827-01



Holder for SE 64x  
*Halter für SE 64x*  
 Support de SE 64x  
*Supporto per SE 64x*  
 Soporte para SE 64x

ID 744677-01



Holder for SE 660  
*Halter für SE 660*  
 Support de SE 660  
*Supporto per SE 660*  
 Soporte para SE 660

ID 1034244-01



Wrench for taper mounting  
*Schlüssel für Kegelmontage*  
 Clef pour le montage du cône  
*Chiavi per il montaggio dei coni*  
 Llave para el montaje del cono

## SE 640

ID 631225-xx



## SE 642

ID 652792-xx



## SE 660

ID 744719-01



## SE 540

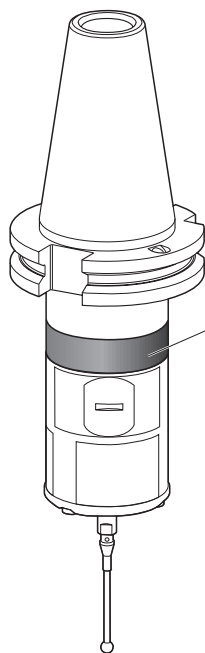
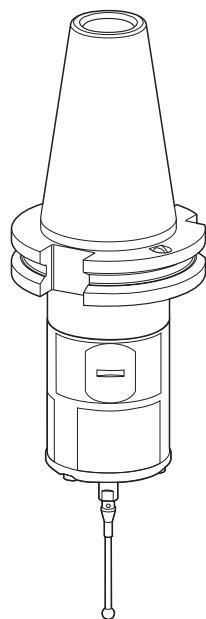
ID 626001-xx



# Items supplied

梱包品  
零部件  
供應的項目  
제공 품목

## TS 46x



Items supplied depend on product variant  
Items supplied depend on product variant  
Items supplied depend on product variant  
Items supplied depend on product variant  
Items supplied depend on product variant

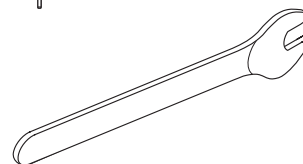
Collision protection  
Collision protection  
Collision protection  
Collision protection  
Collision protection



Replacement stylus  
Replacement stylus  
Replacement stylus  
Replacement stylus  
Replacement stylus



Assembly tool  
Assembly tool  
Assembly tool  
Assembly tool  
Assembly tool



To be ordered separately:

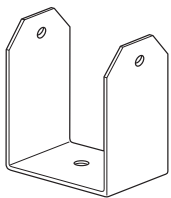
別売品:

需单独订购:

須另外訂購的項目:

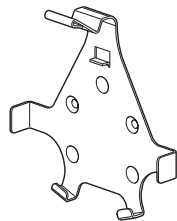
별도로 주문하려면:

ID 370827-01



Holder for SE 64x  
SE 64x用ホルダー  
SE 64x 支架  
SE 64x 安裝支架  
SE 64x용 홀더

ID 744677-01



Holder for SE 660  
SE 660用ホルダー  
SE 660 支架  
SE 660 安裝支架  
SE 660용 홀더

ID 1034244-01



Wrench for taper mounting  
シャンクへの取付け用レンチ  
用于锥柄安裝的扳手  
使用板手固鎖螺牙  
홀더를 설치하기 위한 렌치

**SE 640**

ID 631225-xx



**SE 642**

ID 652792-xx



**SE 660**

ID 744719-01



**SE 540**

ID 626001-xx

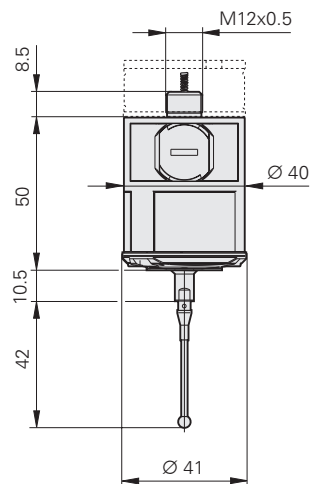


**Dimensions**  
**Abmessungen**  
**Dimensions**  
**Dimensioni**  
**Dimensiones**

mm



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



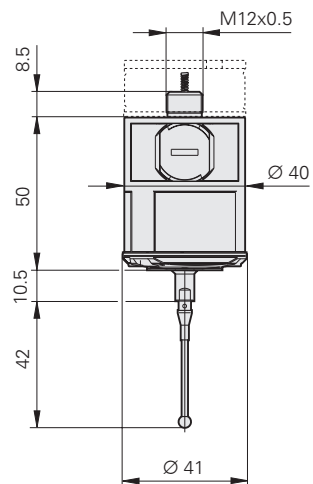
# Dimensions

寸法  
尺寸  
尺寸  
규격

mm



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



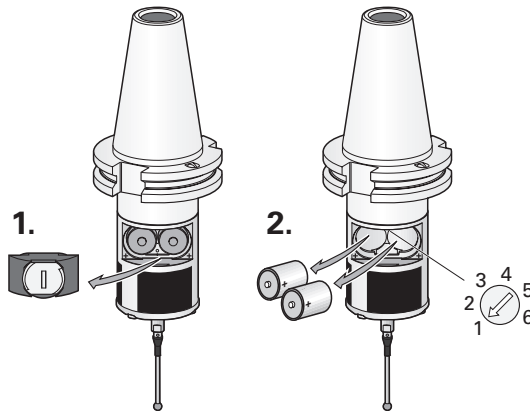
## Protocol of log

*Darstellung des Protokolls*

*Darstellung des Protokolls*

*Darstellung des Protokolls*

*Darstellung des Protokolls*



Rotary switch  
*Drehschalter*  
Commutateur rotatif  
*Interruttore*  
Conmutador giratorio



**Caution:** Conduct electronic recentering after switching between IR and RF modes, page 30.

**Achtung:** Bei Änderung der Betriebsart IR -> RF, RF -> IR elektronisch neu zentrieren, S.30.

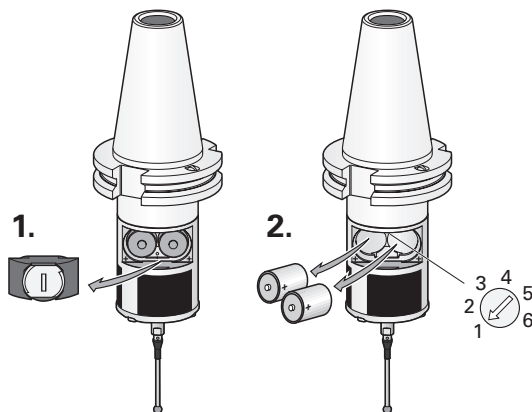
**Achtung:** Bei Änderung der Betriebsart IR -> RF, RF -> IR elektronisch neu zentrieren, S.30.

**Achtung:** Bei Änderung der Betriebsart IR -> RF, RF -> IR elektronisch neu zentrieren, S.30.

**Achtung:** Bei Änderung der Betriebsart IR -> RF, RF -> IR elektronisch neu zentrieren, S.30.

| Switch position<br><i>Schalterstellung</i><br>Schalterstellung<br><i>Schalterstellung</i><br>Schalterstellung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Activation<br><i>Aktivierung</i><br>Aktivierung<br><i>Aktivierung</i><br>Aktivierung                  | Transmission<br><i>Übertragung</i><br>Übertragung<br><i>Übertragung</i><br>Übertragung | Transmission unit<br><i>Sendeeinheit</i><br>Sendeeinheit<br><i>Sendeeinheit</i><br>Sendeeinheit |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | IR <sup>1)</sup>                                                                                      | IR                                                                                     | SE540 <sup>3)</sup> , SE64x <sup>3)</sup> , SE 660 <sup>4)</sup>                                |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RF <sup>2)</sup>                                                                                      | IR, RF                                                                                 | SE 660 <sup>4)</sup>                                                                            |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | IR                                                                                                    | IR                                                                                     | SE 540 <sup>3)</sup> , SE 64x <sup>3)</sup>                                                     |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Shank switch<br><i>Kegelschalter</i><br>Kegelschalter TS 642<br><i>Kegelschalter</i><br>Kegelschalter | IR                                                                                     | SE540 <sup>3)</sup> , SE64x <sup>3)</sup> , SE 660 <sup>4)</sup>                                |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | –                                                                                                     | –                                                                                      | –                                                                                               |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Shank switch<br><i>Kegelschalter</i><br>Kegelschalter TS 642<br><i>Kegelschalter</i><br>Kegelschalter | IR                                                                                     | SE 540 <sup>3)</sup> , SE 64x <sup>3)</sup>                                                     |
| <p>1) Infrared      2) Radio      3) SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01<br/> <i>Infrarot</i>      <i>Funk</i>      <i>SE 540: ab ID 626001-xx</i>      <i>SE 640: ab ID 631225-xx</i>      <i>SE 642: ab ID 652792-01</i><br/> Infrarot      Funk      SE 540: ab ID 626001-xx      SE 640: ab ID 631225-xx      SE 642: ab ID 652792-01<br/> <i>Infrarot</i>      <i>Funk</i>      <i>SE 540: ab ID 626001-xx</i>      <i>SE 640: ab ID 631225-xx</i>      <i>SE 642: ab ID 652792-01</i><br/> Infrarot      Funk      SE 540: ab ID 626001-xx      SE 640: ab ID 631225-xx      SE 642: ab ID 652792-01</p> <p>4) For transmission unit settings, please refer to the SE 660 operating instructions.<br/> <i>Einstellungen an der Sendeeinheit entnehmen Sie bitte der Betriebsanleitung SE 660</i><br/> Einstellungen an der Sendeeinheit entnehmen Sie bitte der Betriebsanleitung SE 660<br/> <i>Einstellungen an der Sendeeinheit entnehmen Sie bitte der Betriebsanleitung SE 660</i><br/> Einstellungen an der Sendeeinheit entnehmen Sie bitte der Betriebsanleitung SE 660</p> |                                                                                                       |                                                                                        |                                                                                                 |

Protocol of log  
 Protocol of log  
 Protocol of log  
 Protocol of log  
 Protocol of log



Rotary switch  
 Rotary switch  
 Rotary switch  
 Rotary switch  
 Rotary switch



**Caution:** Conduct electronic recentering after switching between IR and RF modes, page 32.  
**Caution:** Conduct electronic recentering after switching between IR and RF modes, page 32.  
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                        |                                                              |                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|
| Switch position<br>Switch position<br>Switch position<br>Switch position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Activation<br>Activation<br>Activation<br>Activation                                   | Transmission<br>Transmission<br>Transmission<br>Transmission | Transmission unit<br>Transmission unit<br>Transmission unit<br>Transmission unit |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IR <sup>1)</sup>                                                                       | IR                                                           | SE540 <sup>3)</sup> , SE64x <sup>3)</sup> , SE 660 <sup>4)</sup>                 |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RF <sup>2)</sup>                                                                       | IR, RF                                                       | SE 660 <sup>4)</sup>                                                             |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IR                                                                                     | IR                                                           | SE 540 <sup>3)</sup> , SE 64x <sup>3)</sup>                                      |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Shank switch<br>Shank switch<br>Shank switch<br>Shank switch<br>Shank switch<br>TS 642 | IR                                                           | SE540 <sup>3)</sup> , SE64x <sup>3)</sup> , SE 660 <sup>4)</sup>                 |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | –                                                                                      | –                                                            | –                                                                                |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Shank switch<br>Shank switch<br>Shank switch<br>Shank switch<br>Shank switch<br>TS 642 | IR                                                           | SE 540 <sup>3)</sup> , SE 64x <sup>3)</sup>                                      |
| <p>1) Infrared      2) Radio      3) SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01<br/> Infrared      Radio      SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01<br/> Infrared      Radio      SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01<br/> Infrared      Radio      SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01<br/> Infrared      Radio      SE 540: as of ID 626001-xx      SE 640: as of ID 631225-xx      SE 642: as of ID 652792-01</p> <p>4) For transmission unit settings, please refer to the SE 660 operating instructions.<br/> For transmission unit settings, please refer to the SE 660 operating instructions.<br/> For transmission unit settings, please refer to the SE 660 operating instructions.<br/> For transmission unit settings, please refer to the SE 660 operating instructions.<br/> For transmission unit settings, please refer to the SE 660 operating instructions.</p> |                                                                                        |                                                              |                                                                                  |

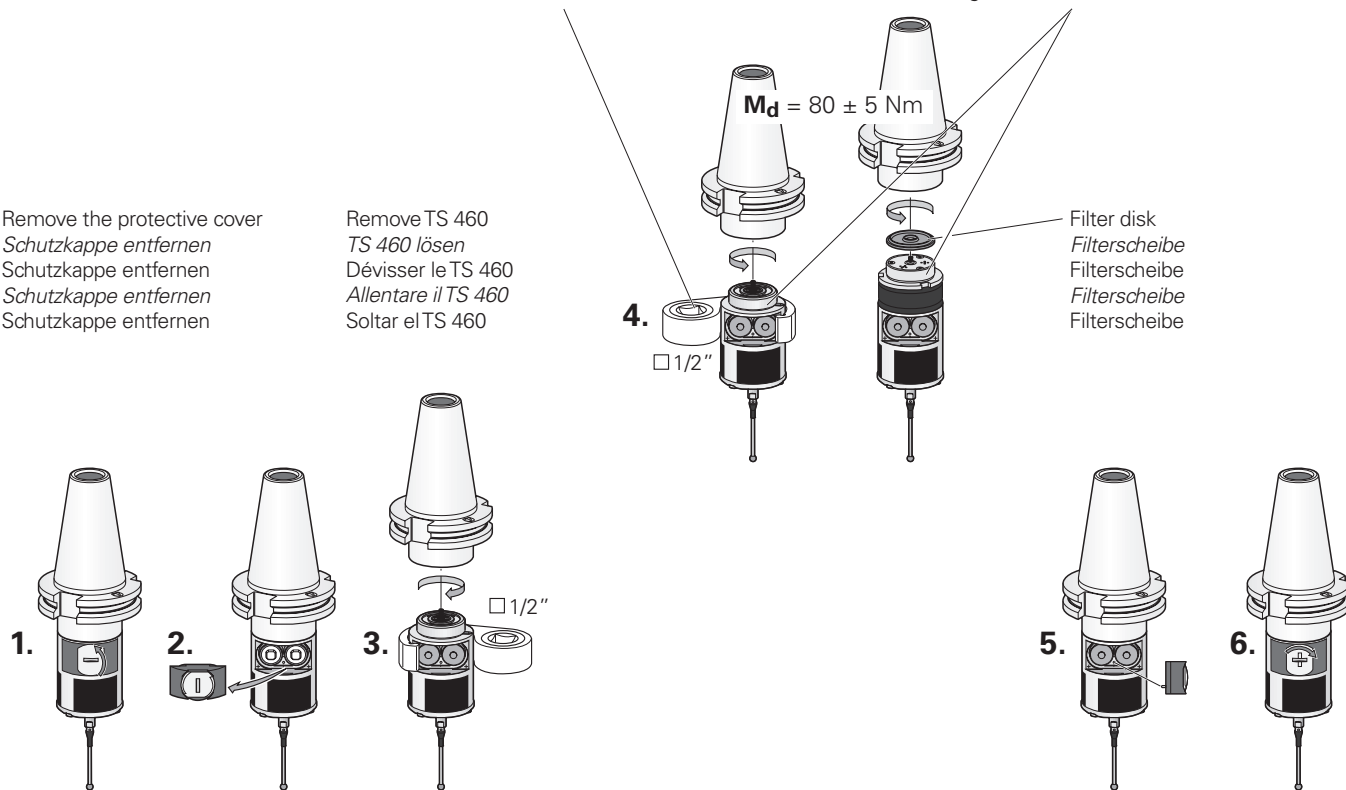
**Taper mounting**  
**Kegelmontage**  
**Montage du cône**  
**Montaggio del cono**  
**Montaje del cono**

Remove the protective cover  
*Schutzkappe entfernen*  
*Schutzkappe entfernen*  
*Schutzkappe entfernen*  
*Schutzkappe entfernen*

Remove TS 460  
*TS 460 lösen*  
*Dévisser le TS 460*  
*Allentare il TS 460*  
*Soltar el TS 460*

Attach TS 460 with torque wrench  
*TS 460 mit Drehmomentschlüssel anschrauben*  
*Visser le TS 460 avec une clef dynamométrique*  
*Avvitare il TS 460 con chiave dinamometrica*  
*Aatornillar el TS 460 con una llave dinamométrica*

M30 x 0.5  
 Secure the thread with Loctite 222/S8  
*Gewinde mit Loctite 222/S8 sichern*  
*Freinage des filetages avec Loctite 222/S8*  
*Bloccare il filetto con Loctite 222/S8*  
*Asegurar la rosca con Loctite 222/S8*



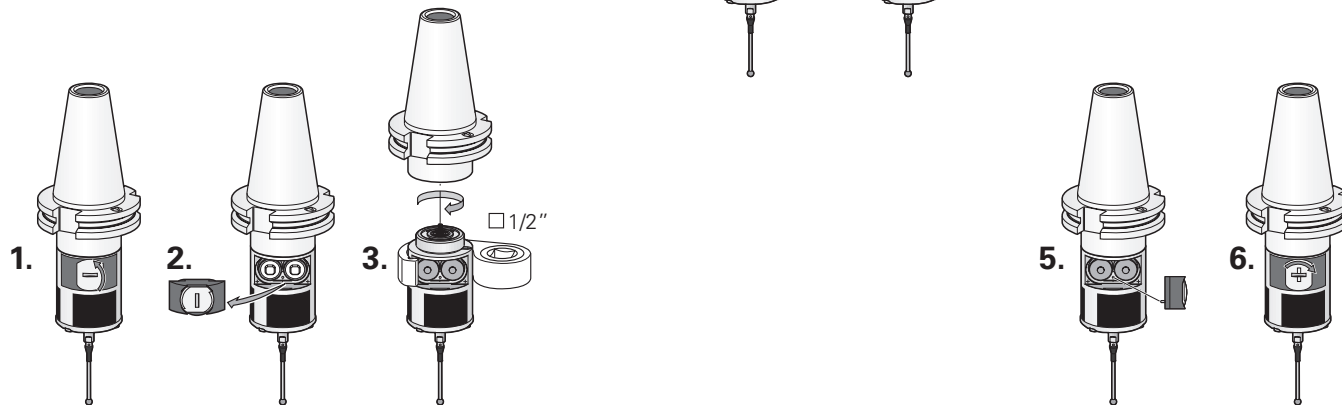
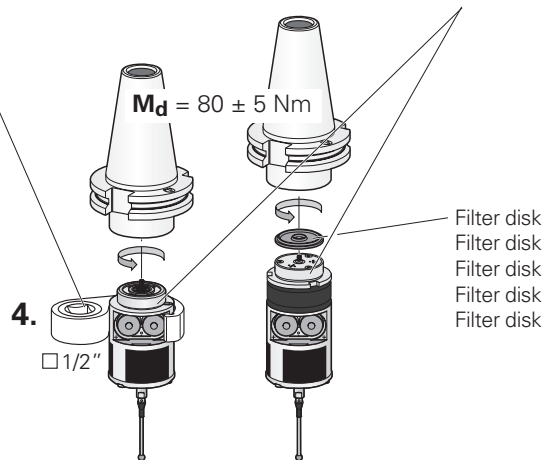
**Taper mounting**  
 シャンクへの取付け  
 安裝椎柄  
 安裝刀把  
 테이퍼 설치

Attach TS 460 with torque wrench  
 トルクレンチでTS 460を取り付けてください  
 用扭矩扳手安裝TS 460  
 使用扭力板手固鎖 TS 460  
 토크 렌치로 TS 460를 연결합니다.

M30 x 0.5  
 Secure the thread with Loctite 222/S8  
 Loctite 222/S8でネジを固定してください  
 用Loctite 222/S8固定螺紋  
 使用螺絲固定劑 Loctite 222/S8 固定螺牙  
 Loctite 222/S8로 나사를 고정합니다.

Remove the protective cover  
 Remove the protective cover  
 Remove the protective cover  
 Remove the protective cover  
 Remove the protective cover

Remove TS 460  
 TS 460を取外してください。  
 拆下TS 460  
 移除 TS 460  
 TS 460를 제거합니다.



**Stylus exchange**  
**Taststiftwechsel**  
**Changement de la tige de palp**  
**Sostituzione dello stilo**  
**Cambio del vástago**



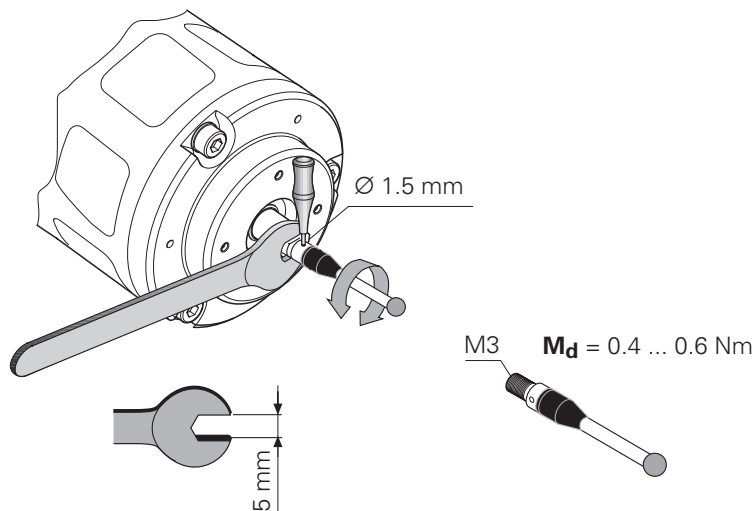
**Note:** Recenter, see pages 30 and 31

**Achtung:** Neu zentrieren, siehe Seite 30 und 31

**Attention:** recentrage, voir pages 30 et 31

**Attenzione:** ripetere il centraggio, vedere pagina 30 e 31

**Atención:** centrar de nuevo, ver pág. 30 y 31



## Stylus exchange

スタイラスの交換

测针更换

探針交換

스타일러스 교체



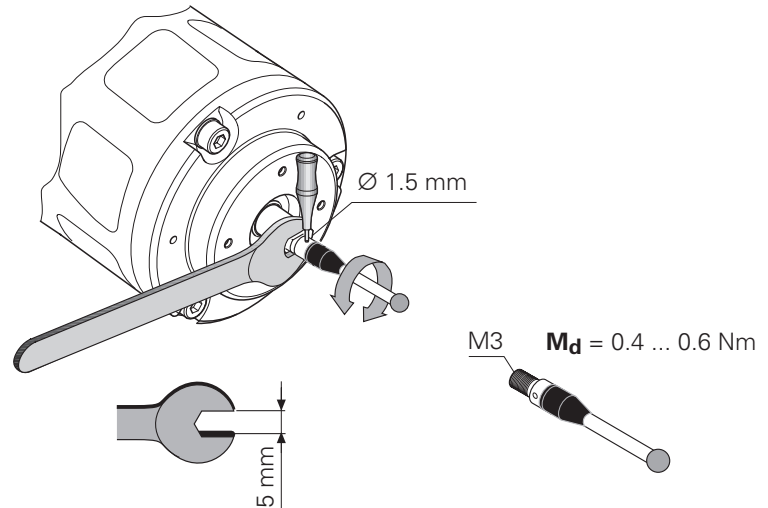
**Note:** Recenter, see pages 32 and 33

注意：再センタリング。32および33ページを参照ください。

注意：重新定心时，参见第32和33页

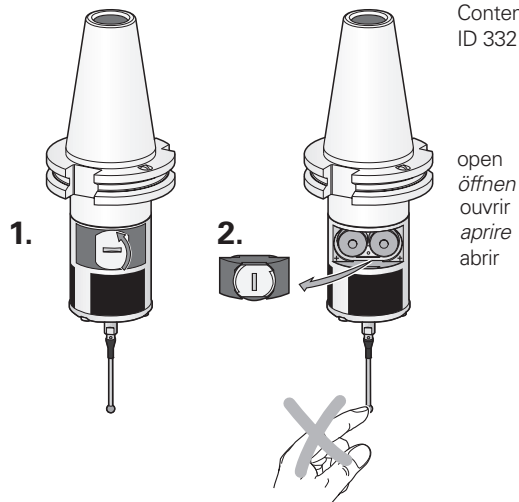
附註：重校中心，請參考頁碼 32 及 33

유의사항: 재센터링은 32, 33페이지를 참조하십시오.



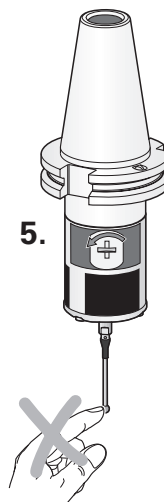
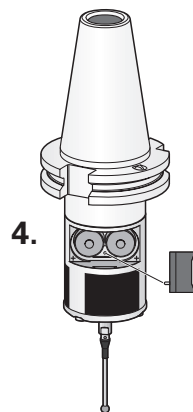
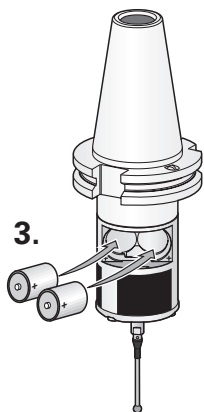
**Battery exchange**  
**Batterienwechsel**  
**Changement des batteries**  
**Sostituzione delle batterie**  
**Cambio de batería**

Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)  
*Im Lieferumfang enthalten: 2 Stück Batterien LITHIUM 3.6 V 1/2 AA*  
*ID 332775-05. (Batterien nicht aufladbar)*  
Inclus dans la fourniture: 2 x batteries LITHIUM 3.6 V 1/2 AA  
ID 332775-05. (Batteries non rechargeables)  
*Lo standard di fornitura comprende: 2x batterie LITHIUM 3,6 V 1/2 AA*  
*ID 332775-05. (batterie non ricaricabili)*  
Contenido entre los elementos suministrados: 2x baterías LITHIUM 3.6 V 1/2 AA  
ID 332 775-04. (baterías no recargables)



The stylus must hang loose for the self-calibration  
*Wegen Selbstkalibrierung muss Taststift frei sein*  
*La tige de palpée doit être libre à cause de l'auto-calibration*  
*Lo stilo deve essere libero per autocalibrazione*  
Por motivo de la autocalibración, el vástago debe estar suelto

Alkaline batteries or NiMH accumulators with 1 to 4 V can also be used.  
*Alkaline-Batterien oder NIMH-Akkus mit 1 bis 4 V sind ebenfalls verwendbar.*  
Utilisation possible des batteries alcalines ou accus NIMH de 1 à 4 V.  
*Possono essere impiegate batterie alcaline o NIMH da 1 a 4 V.*  
Asimismo pueden utilizarse baterías o acumuladores NIMH de 1 hasta 4 V.



close  
schließen  
Fermer  
chiudere  
cerrar

## Battery exchange

電池交換

更換電池

更換電池

배터리 교체

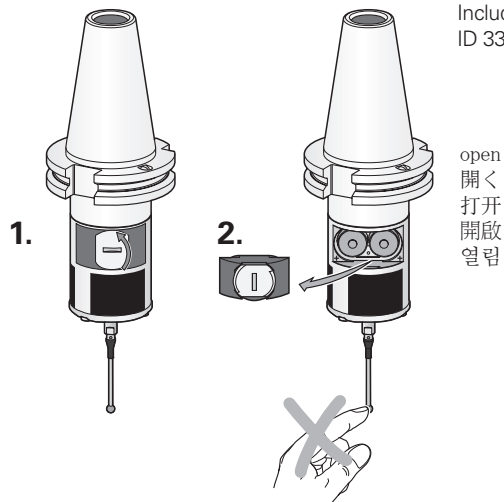
Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)

Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)

Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)

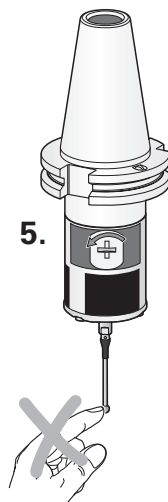
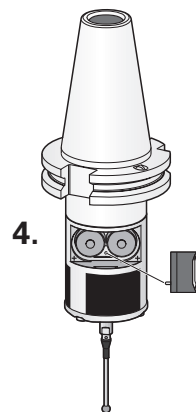
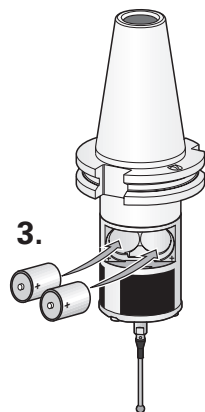
Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)

Included in the delivery: 2 LITHIUM batteries, 3.6 V, 1/2 AA  
ID 332775-05. (Batteries not rechargeable)



The stylus must hang loose for the self-calibration  
自己校正時にスタイラスへ力を加えないでください  
測針必須在自然下垂状态进行自我校准  
自動校正時探針必須無碰觸  
자체 교정 중에는 스타일러스를 느슨히 해야 합니다.

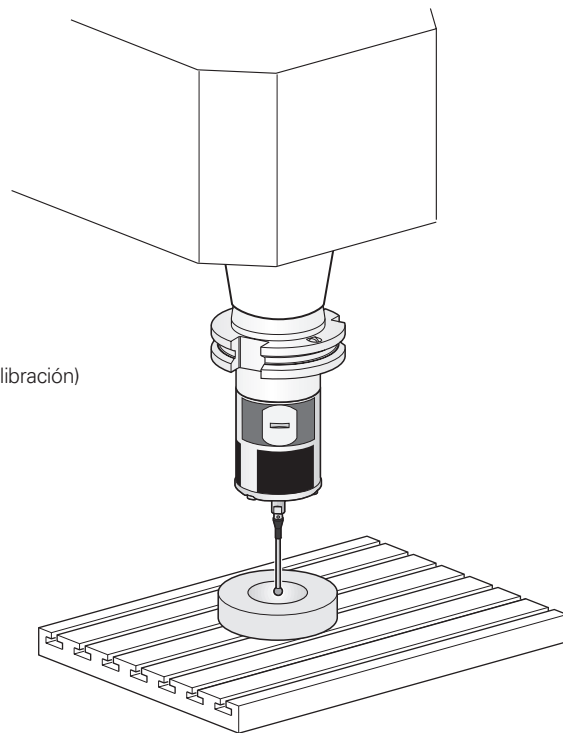
Alkaline batteries or NiMH accumulators with 1 to 4 V can also be used.  
アルカリ電池もしくはニッケル水素電池（1～4V）も使用可能です。  
也可用电压在1至4 V之间的碱性电池或NiMH镍氢电池。  
任何 1 至 4 伏特碱性電池或鎳氫電池皆可使用。  
1~4V의 알칼리 배터리 또는 NiMH 축전지를 사용할 수도 있습니다.



close  
閉める  
关闭  
關閉  
단합

**Centering**  
**Zentrieren**  
**Centrage**  
**Centraggio**  
**Centrado**

Electronic centering: In NC through probing from opposite directions (calibration ring)  
*Elektronisch Zentrieren: in NC durch Umschlagmessung (Kalibrierring)*  
Centrage électronique: dans la CN via rotation à 180° (bague d'étalonnage)  
*Centraggio elettronico: tramite NC eseguire la tastatura su due punti diametralmente opposti (anello di calibrazione)*  
Centrado electrónico: en NC a través del palpado en direcciones opuestas (anillo de calibración)





## Centering

センタリング (校正)

定心

中心定位

센터링

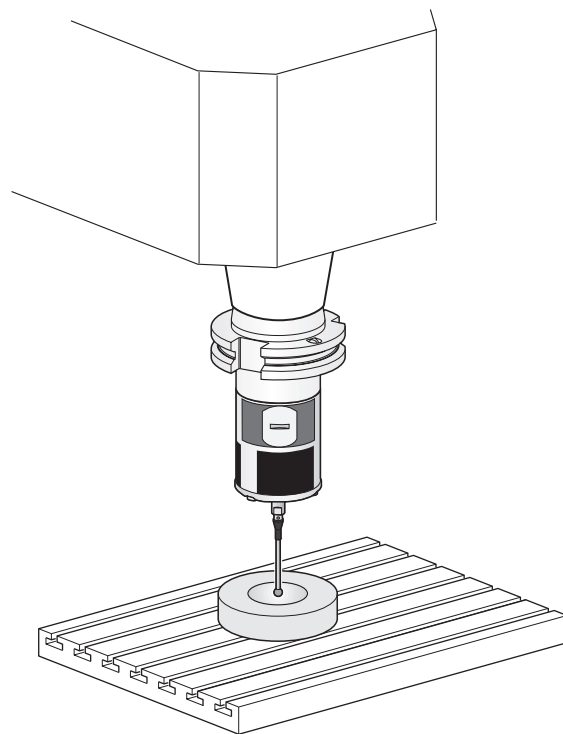
Electronic centering: In NC through probing from opposite directions (calibration ring)

電氣的センタリング: 反対方向からプローブしてNCに (校正リング)

电子定心: 用NC程序的探测功能进行相向探测 (标准环规)

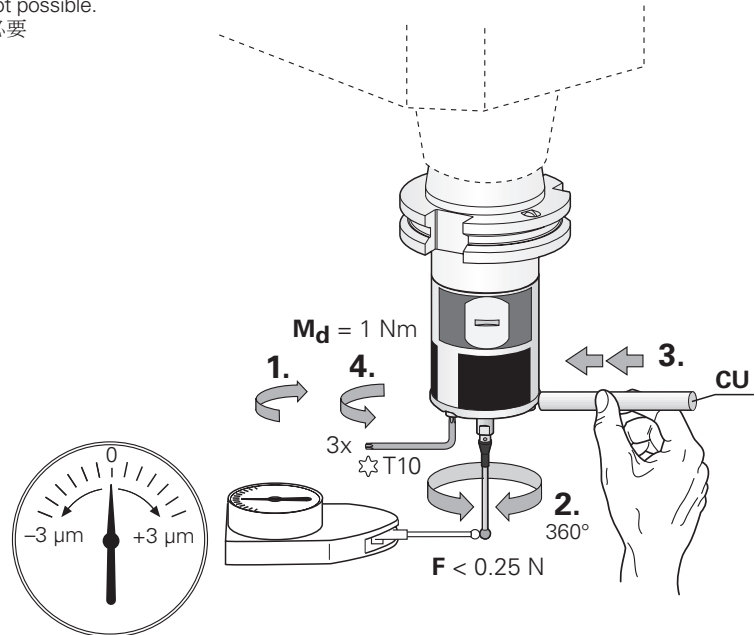
電子對心: 於 NC 機台上探測對應方向 (校正環規)

자동 센터링: NC의 반대 방향에서 프로빙(교정 링)



Spindle or tool-setting device  
スピンドルもしくは工具設定機器  
主轴或对刀仪设备  
主轴或刀具设定設備  
스핀들 또는 공구 설정 장치

Mechanical centering. Only necessary if electronic centering is not possible.  
機械的センタリング 電氣的センタリングが不可能のときのみ必要  
机械定心。只适用于不能进行电子定心时。  
機械對心。只有電子對心無效才需要。  
기계식 센터링. 자동 센터링이 불가능한 경우에만 필요합니다.



## Functional principle of collision protection

*Funktionsweise des Kollisionsschutzes*

*Funktionsweise des Kollisionsschutzes*

*Funktionsweise des Kollisionsschutzes*

*Funktionsweise des Kollisionsschutzes*

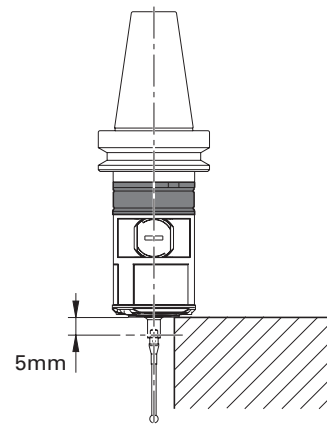
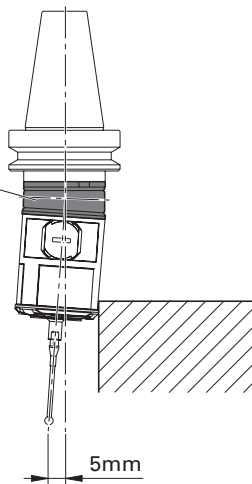
Collision protection adapter

*Kollisionsschutzadapter*

*Kollisionsschutzadapter*

*Kollisionsschutzadapter*

*Kollisionsschutzadapter*



The ready status switches off and the NC stops (the NC must monitor the readiness!).

After a collision, be sure to start the automatic NC calibration cycle, see p. 30.

*Das Bereitschaftssignal fällt weg, die NC stoppt (die NC muss die Bereitschaft abfragen!).*

*Nach Kollision, automatischen Tastsystem-Kalibrierzyklus der NC durchführen, siehe S. 30.*

Bereitschaft fällt weg, NC stoppt. Nach Kollision automatischer

NC-Kalibrierzyklus, siehe S.30.

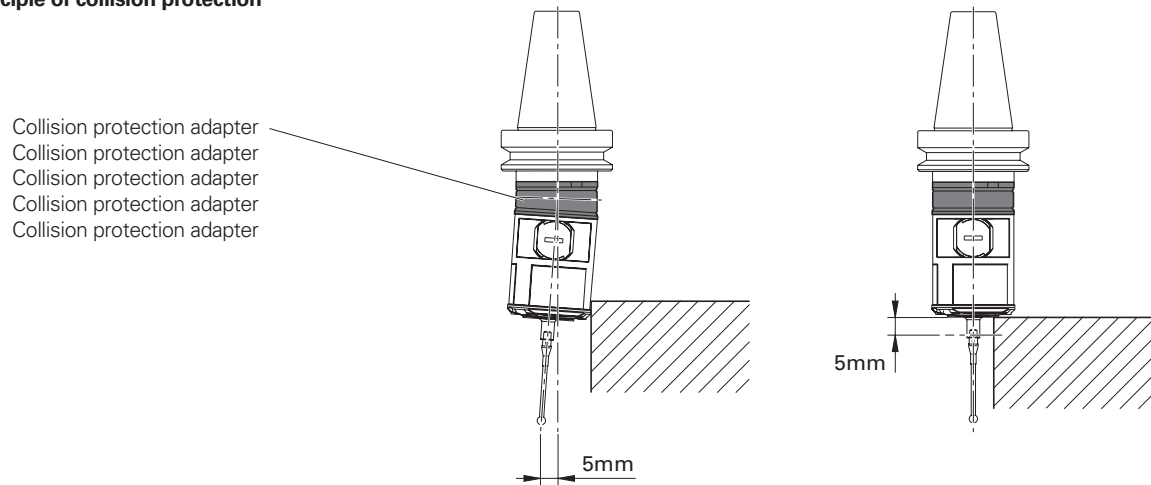
*Bereitschaft fällt weg, NC stoppt.*

*Nach Kollision automatischer NC-Kalibrierzyklus, siehe S.30.*

Bereitschaft fällt weg, NC stoppt.

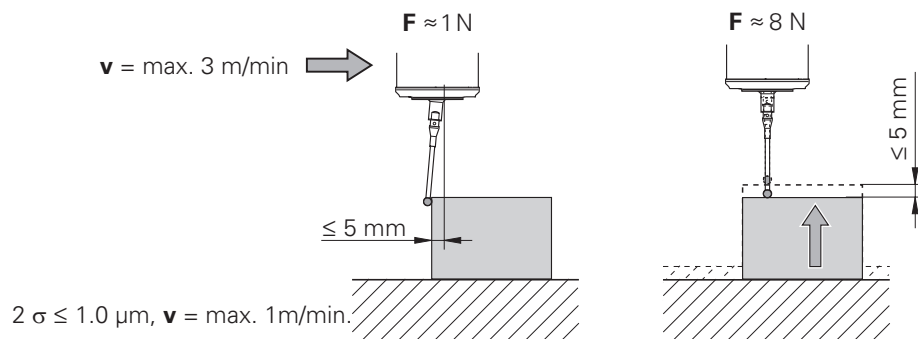
Nach Kollision automatischer NC-Kalibrierzyklus, siehe S.30.

**Functional principle of collision protection**  
**Functional principle of collision protection**  
**Functional principle of collision protection**  
**Functional principle of collision protection**  
**Functional principle of collision protection**

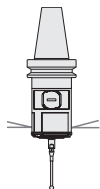


The ready status switches off and the NC stops (the NC must monitor the readiness!).  
After a collision, be sure to start the automatic NC calibration cycle, see p. 32.  
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After a collision, be sure to start the automatic NC calibration cycle, see p. 32.

**Specifications**  
**Technische Kennwerte**  
**Caractéristiques techniques**  
**Dati tecnici**  
**Características técnicas**



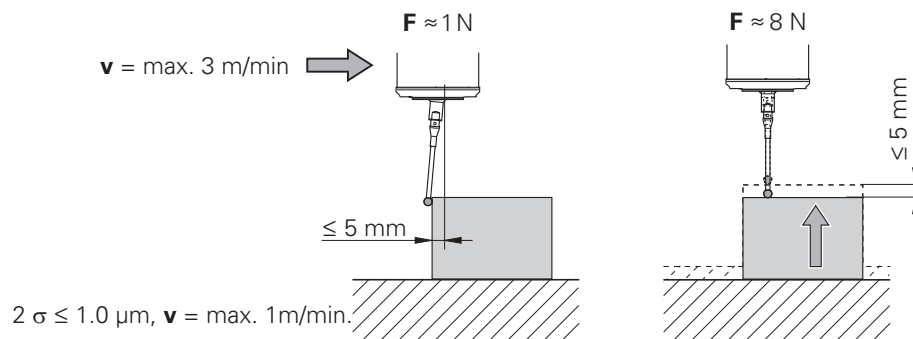
Status of the touch probe  
 Zustand des Tastsystems  
 Etat du palpeur  
 Stato del sistema di tastatura  
 Estado del sistema de palpación



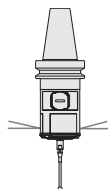
|                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Blue blinking<br/> <i>blau blinkend</i><br/>         blau blinkend<br/> <i>blau blinkend</i><br/>         blau blinkend</p>                                                              | <p><i>Touch probe ready, stylus at rest</i><br/>         Tastsystem bereit, Taststift in Ruhelage<br/>         Palpeur prêt, tige de palpation au repos<br/> <i>sistema pronto, stilo in posizione di riposo</i><br/>         Palpador preparado; vástago en posición de reposo</p>                        |
| <p>Blue continuous<br/> <i>blau Dauerleuchten</i><br/>         blau Dauerleuchten<br/> <i>blau Dauerleuchten</i><br/>         blau Dauerleuchten</p>                                        | <p><i>Touch probe ready, stylus deflected</i><br/>         Tastsystem bereit, Taststift ausgelenkt<br/>         Palpeur prêt, tige de palpation déviée<br/> <i>sistema pronto, stilo deflesso</i><br/>         Palpador preparado; vástago deflexionado</p>                                                |
| <p>Red LED, fast blinking<br/> <i>rote LED, schnell blinkend</i><br/>         rote LED, schnell blinkend<br/> <i>rote LED, schnell blinkend</i><br/>         rote LED, schnell blinkend</p> | <p>Possible error. Contact HEIDENHAIN service agency<br/> <i>evtl. Fehler, HEIDENHAIN - Service kontaktieren</i><br/>         evtl. Fehler, HEIDENHAIN - Service kontaktieren<br/> <i>evtl. Fehler, HEIDENHAIN - Service kontaktieren</i><br/>         evtl. Fehler, HEIDENHAIN - Service kontaktieren</p> |

# Specifications

仕様  
技术参数  
規格  
사양

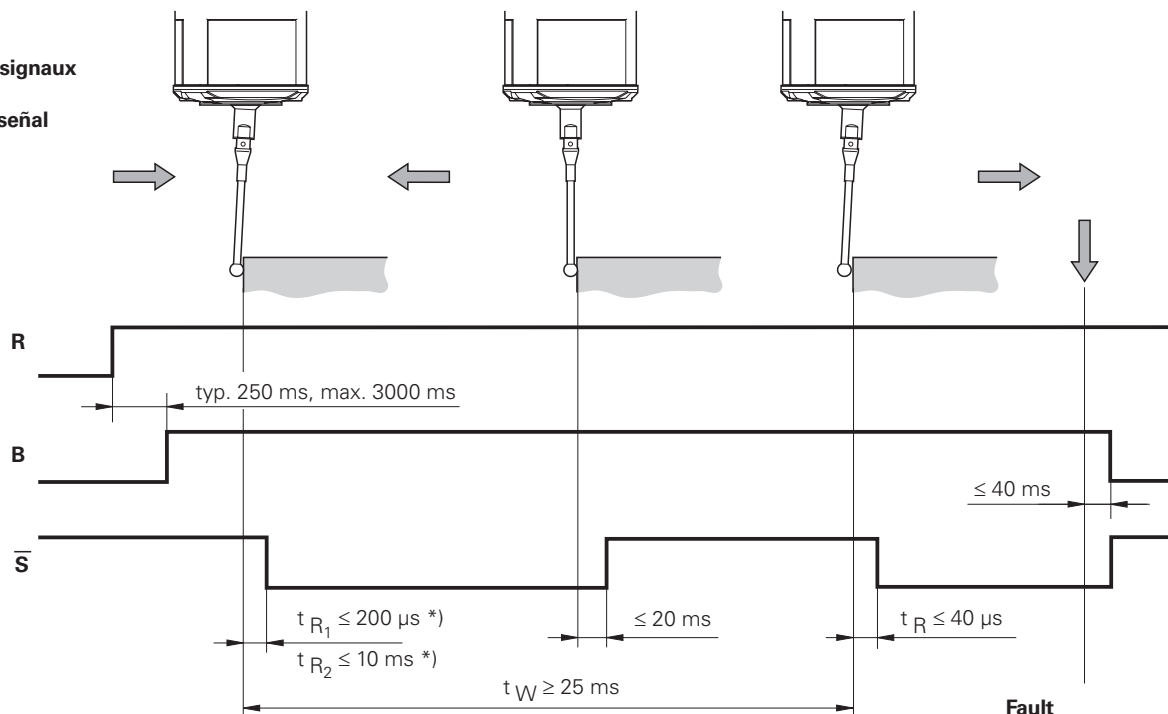


Status of the touch probe  
タッチプローブの状態  
测头状态  
接觸式探針狀態  
터치 프로브의 상태



|                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Blue blinking</li> <li>Blue blinking</li> <li>Blue blinking</li> <li>Blue blinking</li> <li>Blue blinking</li> </ul>                                              | <p>Touch probe ready, stylus at rest<br/>タッチプローブ使用可能、スタイラスはフリーの状態<br/>测头就绪，测针在自由位置<br/>接觸式探針備妥，探針已偏移<br/>터치 프로브 준비, 스타일러스 정지됨</p>                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Blue continuous</li> <li>Blue continuous</li> <li>Blue continuous</li> <li>Blue continuous</li> <li>blau Blue continuous</li> </ul>                               | <p>Touch probe ready, stylus deflected<br/>タッチプローブ使用可能、スタイラスはワークを検出<br/>测头就绪，测针偏离自由位置<br/>接觸式探針備妥，探針已偏移<br/>터치 프로브 준비, 스타일러스 굴절됨</p>                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Red LED, fast blinking</li> <li>Red LED, fast blinking</li> <li>Red LED, fast blinking</li> <li>Red LED, fast blinking</li> <li>Red LED, fast blinking</li> </ul> | <p>Possible error. Contact HEIDENHAIN service agency<br/>Possible error. Contact HEIDENHAIN service agency<br/>Possible error. Contact HEIDENHAIN service agency<br/>Possible error. Contact HEIDENHAIN service agency<br/>Possible error. Contact HEIDENHAIN service agency</p> |

**Signal sequence**  
**Signalfolge**  
**Diagramme des signaux**  
**Treno di segnali**  
**Secuencia de la señal**



**Fault**  
**Störung**  
**Perturbation**  
**Guasto**  
**Interferencia**

\*)  $t_{R1}$  = Infrared  
 Infrarot  
 Infrarot  
 Infrarot  
 Infrarot

$t_{R2}$  = Radio  
 Funk  
 Funk  
 Funk  
 Funk

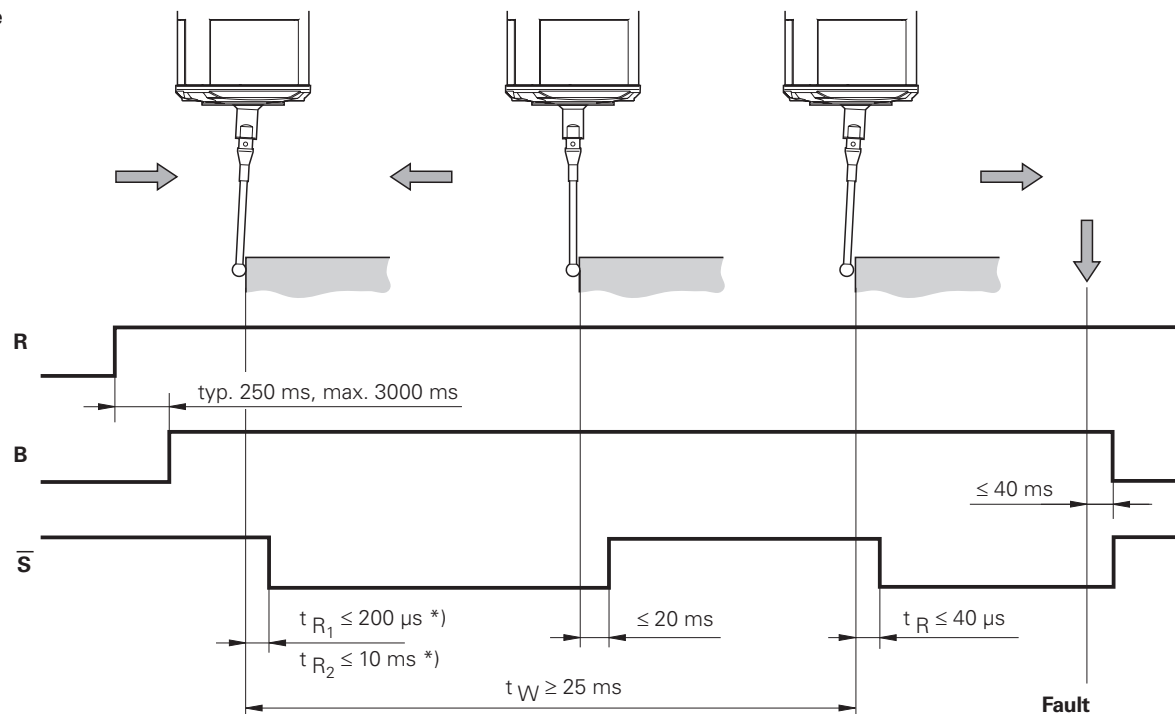
# Signal sequence

信号シーケンス

信号顺序

信號程序

신호 순서



**Fault**  
異常発生時  
故障  
故障  
장애

\*)  $t_{R1}$  = Infrared  
Infrared  
Infrared  
Infrared  
Infrared  
 $t_{R2}$  = Radio  
Radio  
Radio  
Radio  
Radio

# HEIDENHAIN

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808653-90 · Ver00 · Printed in Germany · 7/2013 · H

