

## PATROL + SPEAR

### INSTALLATION MANUAL



INCLUDED IN THE PACKAGE

EN 795:2012 C + SHIELD | SHIELD 2 | COPPO  
AS/NZS 1891.2:2001 + SHIELD | SHIELD 2



EN 795:2012 C

CEN/TS 16415:013

UNI 11578:2015 C

AS/NZS 1891.2:2001



**PATROL +  
SPEAR**  
Installation  
Manual

⚠ read also:



**PATROL +  
SPEAR**  
Safety  
Regulations



## SAFETY INSTRUCTIONS

- IT** L'installazione e/o utilizzo del prodotto Rotho Blaas è permessa solo a personale esperto previa lettura e comprensione del **1** **MANUALE D'INSTALLAZIONE** e delle **2** **NORME DI SICUREZZA** nella lingua del relativo Paese di utilizzo.
- DE** Die Installation und/oder die Verwendung des Produkts von Rotho Blaas ist ausschließlich Fachpersonal vorbehalten, nachdem es das **1** **INSTALLATIONSHANDBUCH** und die **2** **SICHERHEITSVORSCHRIFTEN** in der Sprache des Verwendungslandes gelesen und verstanden hat.
- EN** Only qualified personnel may install and/or use this Rotho Blaas product, after reading and understanding the **1** **INSTALLATION MANUAL** and the **2** **SAFETY REGULATIONS**, in the language of the country of use.
- ES** La instalación y/o el uso del producto Rotho Blaas solo están permitidos al personal experto después de haber leído y comprendido el **1** **MANUAL DE INSTALACIÓN** y las **2** **NORMAS DE SEGURIDAD** en el idioma del país en el que se utiliza.
- FR** Seul le personnel expérimenté peut installer et/ou utiliser ce produit Rotho Blaas, après avoir lu et compris le **1** **MANUEL D'INSTALLATION** et les **2** **NORMES DE SÉCURITÉ** dans la langue du pays où le produit est utilisé.
- PT** A instalação e/ou utilização do produto Rotho Blaas só é permitida a pessoal especializado após a leitura e compreensão do **1** **MANUAL DE INSTALAÇÃO** e das **2** **NORMAS DE SEGURANÇA** na língua do respetivo país onde será utilizado.
- RU** К установке и (или) использованию продукции Rotho Blaas допускается только высококвалифицированный персонал после обязательного прочтения и усвоения **1** **РУКОВОДСТВО ПО УСТАНОВКЕ** и **2** **ПРАВИЛ ТЕХНИКИ БЕЗОПАСНОСТИ** на языке соответствующей страны использования.
- CS** Instalace a/nebo použití výrobku Rotho Blaas je povoleno pouze odborným osobám po přečtení a pochopení **1** **NAVODU K INSTALACI** a **2** **BEZPEČNOSTNÍCH PŘEDPISŮ** v jazyce příslušné země použití.
- DA** Kun kvalificeret personale må installere og/eller bruge dette Rotho Blaas-produkt efter at have læst og forstået den **1** **INSTALLATIONSMANUALEN** og **2** **SIKKERHEDSFORSKRIFTERNE** på brugerens sprog.
- EL** Η εγκατάσταση ή/και η χρήση του προϊόντος Rotho Blaas επιτρέπεται μόνο σε έμπειρο προσωπικό που έχει διαβάσει και κατανοήσει τις **1** **ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ** και τους **2** **ΚΑΝΟΝΙΣΜΟΥΣ ΑΣΦΑΛΕΙΑΣ** στη γλώσσα της σχετικής χώρας χρήσης.
- ET** Antud Rotho Blaas toodet tohib paigaldada ja / või kasutada ainult kvalifitseeritud personal, kes on lugenud kasutamise riigi keeles **1** **PAIGALDUSJUHENDIS** ja **2** **OHUTUSEESKIRJU** ning nendest aru saanud.
- FI** Tämän Rotho Blaas -tuotteen asennus ja/tai käyttö on sallittu vain asiantuntevan henkilöstön toimesta sen jälkeen, kun he ovat lukeneet ja ymmärtäneet **1** **ASENNUSOHJEIDEN** ja **2** **TURVALLISUUSMÄÄRÄYKSET** käyttömaan kielellä.
- HR** Postavljanje i/ili uporaba proizvoda Rotho Blaas dopuštena je samo stručnom osoblju koje je prethodno pročitalo i razumjelo **1** **UPUTA ZA MONTAŽU** kao i **2** **PROPISE O SIGURNOSTI** na jeziku zemlje uporabe.
- HU** A Rotho Blaas termékét kizárólag hozzáértő személyzet szerelheti be és/vagy használhatja, az adott országnak megfelelő nyelvű **1** **TELEPÍTÉSI KÉZIKÖNYV** és **2** **BIZTONSÁGI SZABÁLYOK** elolvasása és megértése után.



## TOOLS



(1) VINYLESTER CHEMICAL ANCHOR WITHOUT STYRENE

## INFORMATIONS

|                     |                                             |
|---------------------|---------------------------------------------|
| Type                | Name or logo of manufacturer/distributor    |
| Rothoblaas          | ROTHOBLAAS                                  |
| PATROL - SPEAR      | Batch number and year of manufacture        |
| Related standard(s) | N/MM/YYYY                                   |
| EN 795:2012 C       | (N = lot number - MM = month - YYYY = year) |
| CEN/TS 16415:2013   |                                             |
| UNI 11578:2015 C    |                                             |

## SAFETY INSTRUCTIONS

- IS** Aðeins þjálfað starfsfólk má setja upp og/eða nota þessa Rotho Blaas-vöru eftir að hafa lesið og skilið **1 UPPSETNINGARHANDBÓKAR** og **2 REGLUGERDIR UM ÖRYGGI** á tungumáli þess lands sem varan er notuð í.
- LT** Produktą „Rotho Blaas” montuoti ir (arba) naudoti leidžiama tik patyrusiam personalui, prieš tai perskaicius ir supratęs **1 MONTAVIMO VADOVE** ir **2 SAUGOS TAISYKLES** atitinkamos šalies, kurioje eksploatuojama, kalba.
- LV** Rotho Blaas produkta uzstādīšana un/vai lietošana ir atļauta tikai pieredzējušam darbiniekam pēc **1 UZSTĀDĪŠANAS ROKASGRĀMATĀ** un **2 DROŠĪBAS NOTEIKUMU** izlasīšanas un izpratnes attiecīgās valsts valodā, kurā produkts tiks lietots.
- NL** De installatie en/of het gebruik van het product Rotho Blaas is voorbehouden aan uitsluitend vakbekwaam personeel dat de **1 INSTALLATIEHANDLEIDING** en de **2 VEILIGHEIDSVOORSCHRIFTEN** in de taal van het land van gebruik gelezen en begrepen heeft.
- NO** Dette Rotho Blaas-produktet skal bare installeres og/eller brukes av kvalifisert personell som har lest og forstått **1 INSTALLASJONSHÅNDBOKEN** og **2 SIKKERHETSFORSKRIFTENE**, på det språket som brukes i landet produktet anvendes.
- PL** Instalację i/lub użytkowania produktu Rotho Blaas może dokonać wyłącznie doświadczony personel, który przeczytał i zrozumiał **1 INSTRUKCJĘ INSTALACJI** oraz normy **2 BEZPIECZEŃSTWA** w języku kraju użytkowania.
- RO** Instalarea și/sau utilizarea produsului Rotho Blaas este permisă numai personalului expert, după ce a citit și înțeles **1 MANUALUL DE INSTALARE** și **2 NORMELE DE SIGURANȚĂ** în limba țării de utilizare a produsului.
- SK** Inštalácia a/alebo používanie produktu Rotho Blaas je povolené len skúsenému personálu po predchádzajúcom prečítaní a pochopení **1 NÁVODE NA INŠTALÁCIU** a **2 BEZPEČNOSTNÝCH NARIEM** v jazyku príslušnej krajiny používania.
- SL** Ta proizvod Rotho Blaas lahko namesti in/ali uporablja samo izkušeno osebe, ki je prebralo in razume vse **1 NAVODILIH ZA VGRADNJO** in **2 VARNOSTNE PREDPISE** v jeziku države njegove uporabe.
- SV** Endast erfaren personal får installera och/eller använda den här Rotho Blaas-produkten efter att **1 INSTALLATIONSANVISNINGARNA** och **2 SÄKERHETSFÖRESKRIFTER** har lästs igenom på språket i installationslandet.
- TR** Sadece yetkili personel **1 KURULUM KILAVUZUNDA** ve **2 GÜVENLİK MEVZUATINI** ürünün kullandığı ülke dilinde okuyup anladıktan sonra Rotho Blaas ürününü kurabilir ve/veya kullanabilir.
- JA** Rotho Blaas製品の施工および使用は、資格を有する専門家のみに許可されています。施工および使用の前に、必ず使用する国の言語で**1設置マニュアル**と**2安全規則**をお読み下さい。
- ZH** 只有具备合格资质的人员在阅读并理解以使用国的语言编写的**1安装手册**和**2安全规程**后才能安装和/或使用该Rotho Blaas产品。
- AR** يمكن فقط للفنيين المؤهلين باستخدام أو تركيب منتج Rotho Blaas بعد قراءة وفهم دليل التثبيت **1** نظراً لسلامة **2** بلغة البلد المستخدم فيها المنتج

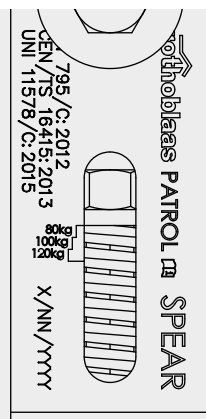


## PRODUCT INFORMATION

|                           |                           |                        |
|---------------------------|---------------------------|------------------------|
| EN<br>795:2012<br>C       | CEN/TS<br>16415:2013      | UNI<br>11578:2015<br>C |
| AS/NZS<br>1891.4:2009     | AS/NZS<br>1891.2:2001     |                        |
|                           |                           |                        |
|                           |                           |                        |
| 1.4301<br>AISI304<br>INOX | 1.4401<br>AISI316<br>INOX |                        |

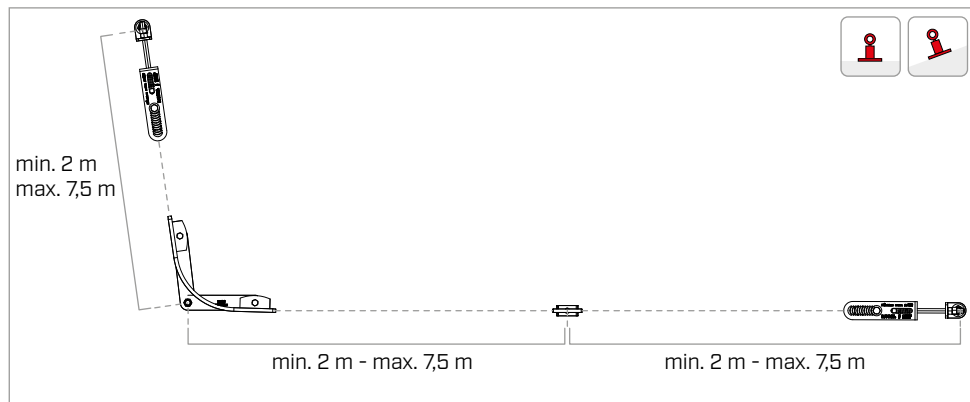


- IT** △ Verificare idoneità statica del sottofondo di montaggio!
- DE** △ Die statische Eignung des Montageuntergrundes sicherstellen!
- EN** △ Check the static suitability of the installation substrate!
- ES** △ Compruebe la idoneidad estática del sustrato de montaje!
- FR** △ Vérifier l'adéquation statique du substrat d'assemblage!

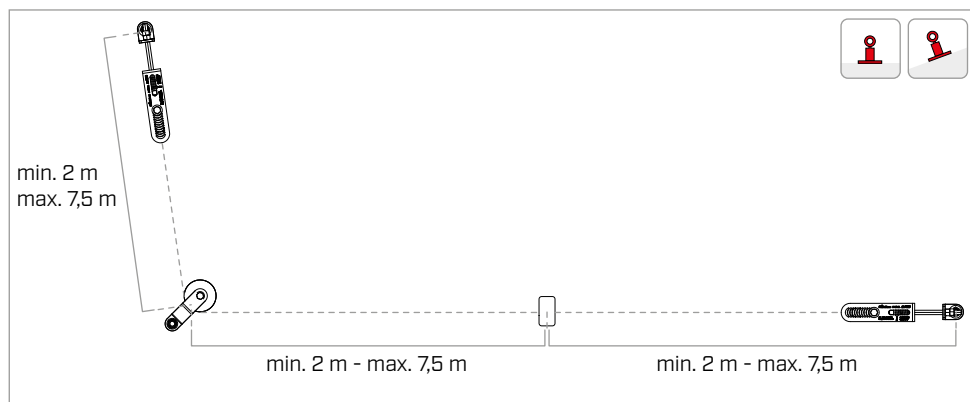


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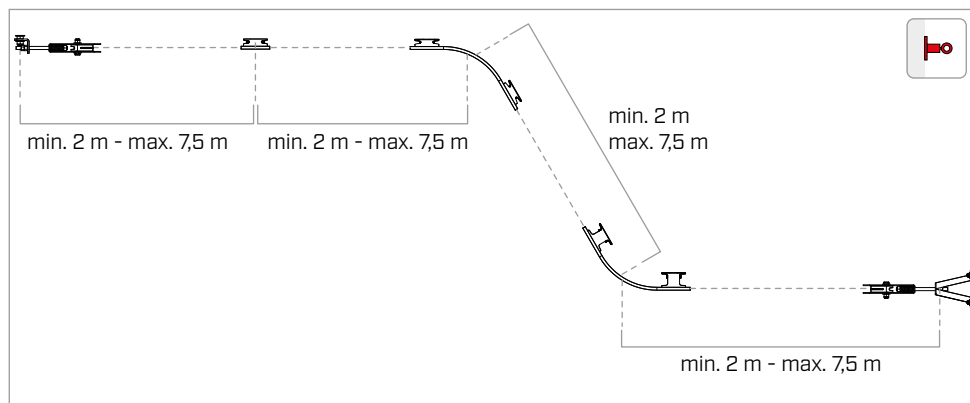
### PATROL HORIZONTAL: PASSING-THROUGH LIFELINE



### PATROL HORIZONTAL: NON PASSING-THROUGH LIFELINE



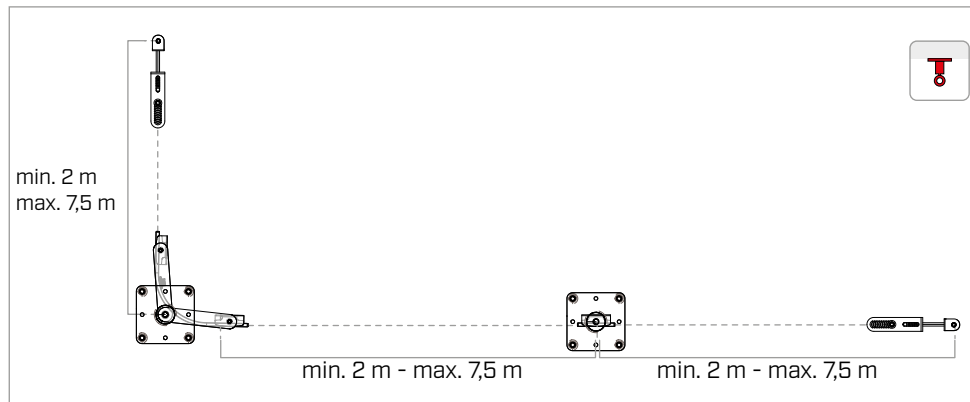
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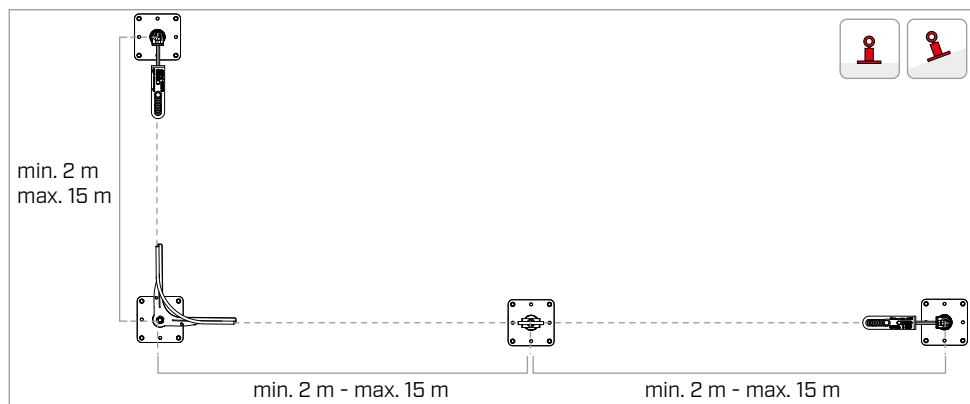


## ■ TECHNICAL DATA

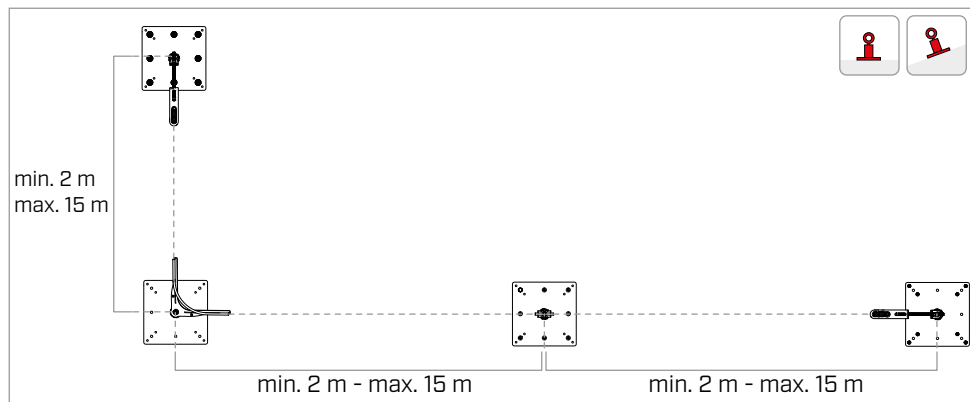
### PATROL OVERHEAD



### PATROL ON TOWER

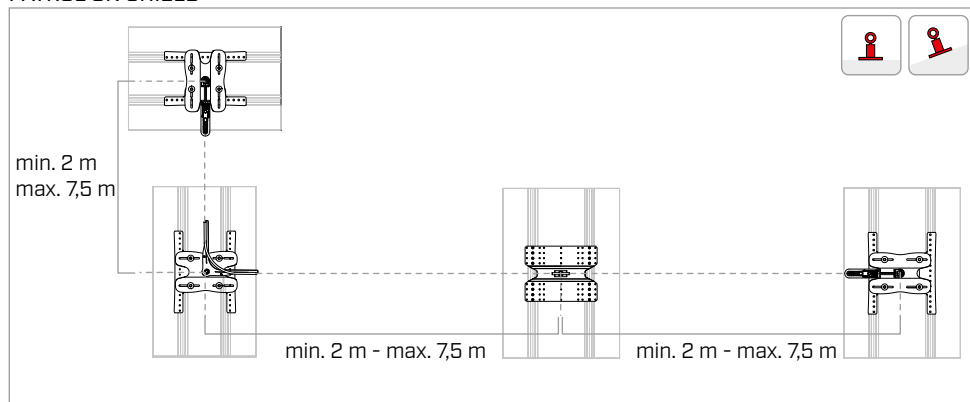


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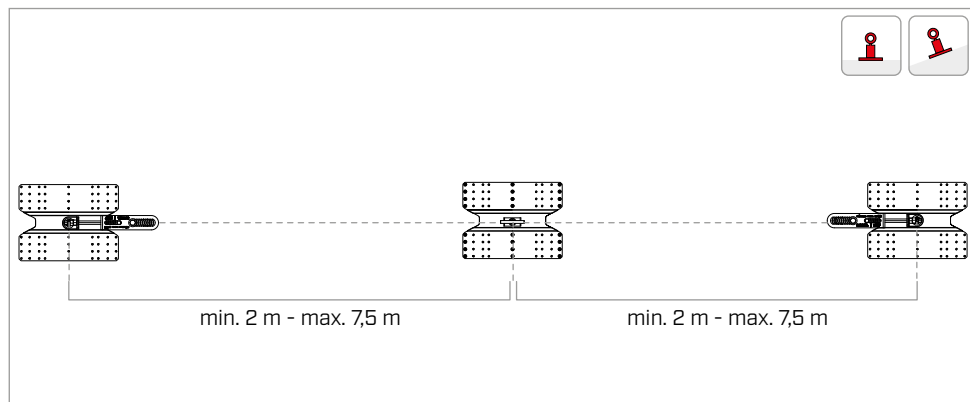


## ■ TECHNICAL DATA

### PATROL ON SHIELD



### PATROL ON COPPO



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## PATROLEND - PATROLEND A4



1.4301  
AISI304  
**INOX**

PATROLEND

1.4401  
AISI316  
**INOX**

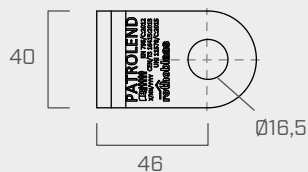
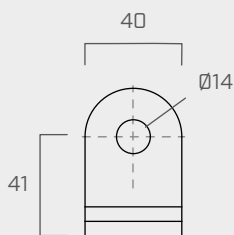
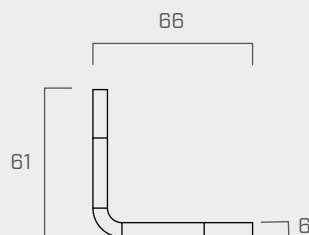
PATROLEND A4



C20/25



S235



**PATROLEND**  
EN 795/C:2012  
X/NN/YYYY CEN/TS 16415:2013  
UNI 11578/C:2015  
**rothoblaas**



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## PAREND - PAREND A4



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AISI304  
**INOX**

PAREND

1.4401  
AISI316  
**INOX**

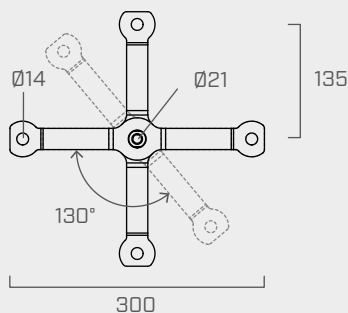
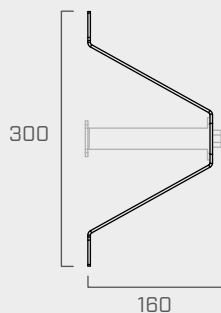
PAREND A4



C20/25



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**PAREND**  
EN 795/C:2012  
X/NN/YYYY CEN/TS 16415:2013  
UNI 11578/C:2015  
**rothoblaas**



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## PATROLTERM - PATROLTERMA4



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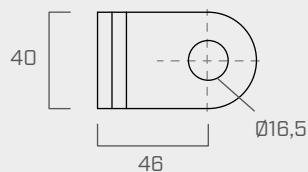
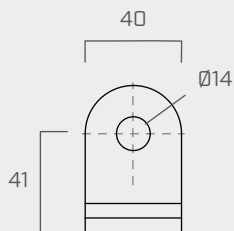
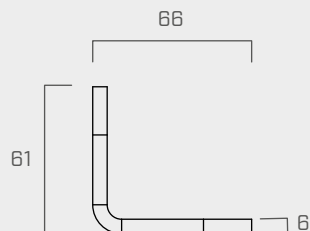
PATROLTERM

1.4401  
AISI316  
**INOX**

PATROLTERMA4

**rothblaas**  
CERTIFIED  
SUPPORTS

TOWER  
SHIELD  
COPPO



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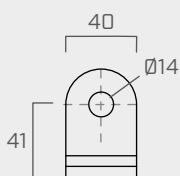
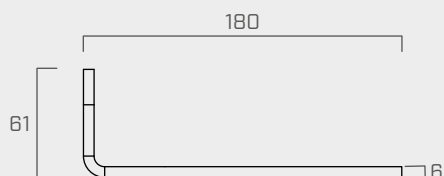
## PATROLTERM L



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**INOX**

**rothblaas**  
CERTIFIED  
SUPPORTS

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SHIELD



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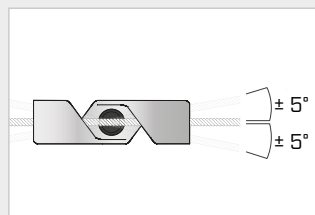
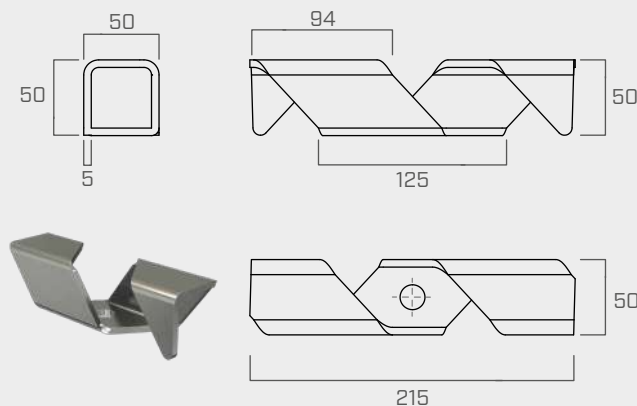
## PATROLINT



1.4301  
AISI304  
**INOX**



**rothoblaas**  
CERTIFIED  
SUPPORTS  
SHIELD  
SHIELD2  
TOWER  
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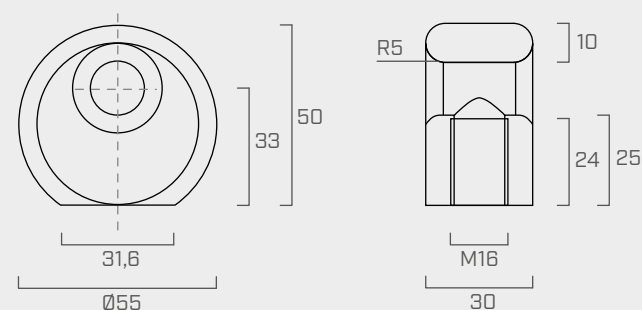
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**INOX**

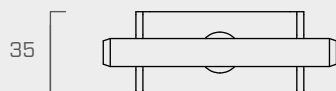
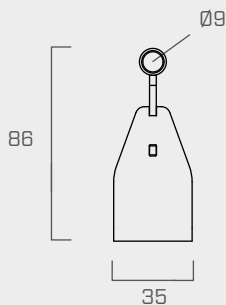
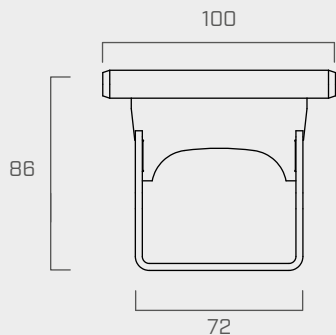


**rothoblaas**  
CERTIFIED  
SUPPORTS  
SHIELD  
SHIELD2  
TOWER  
COPPO



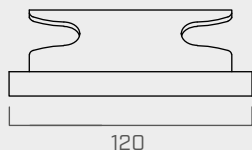
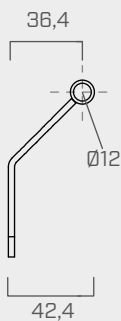
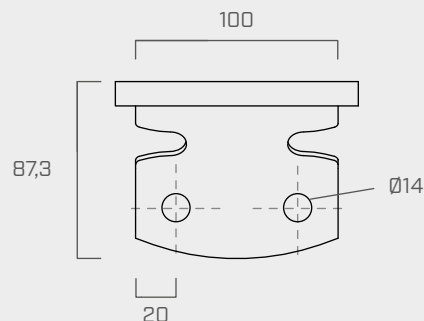
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## PASINT - PASINT A4



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## PARINTER - PARINTER A4



 OHINT



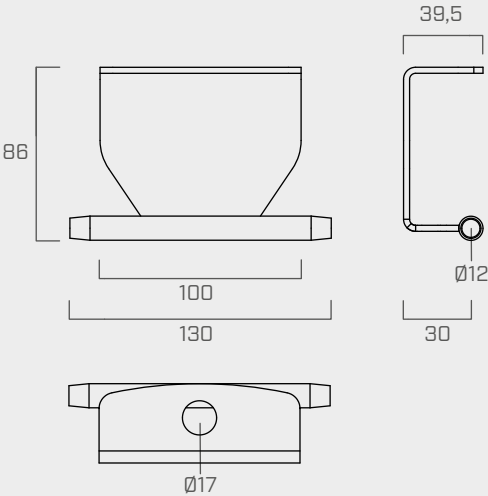
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CERTIFIED  
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## PATROLANG



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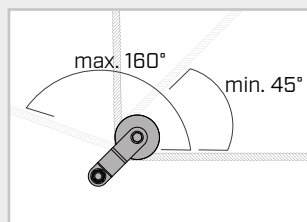
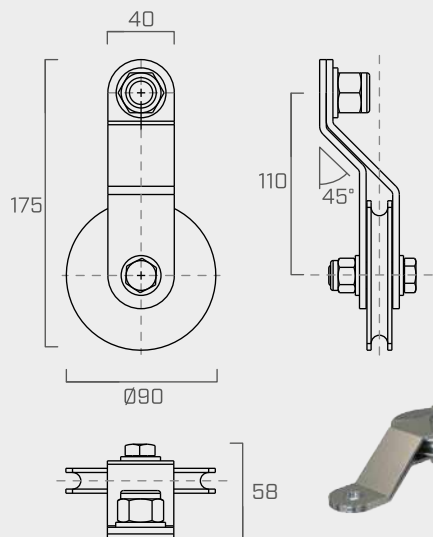
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SHIELD  
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## PASANG - PASANG A4



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INOX  
PASANG

1.4401  
AISI318  
INOX  
PASANGA4



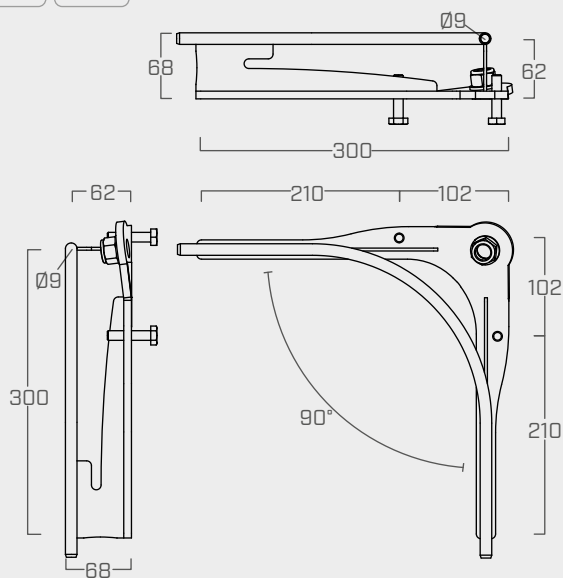
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SHIELD  
TOWER



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## PASANGBEND - PASANGBEND A4



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AISI304  
**INOX**

PASANGBEND

1.4401  
AISI316  
**INOX**

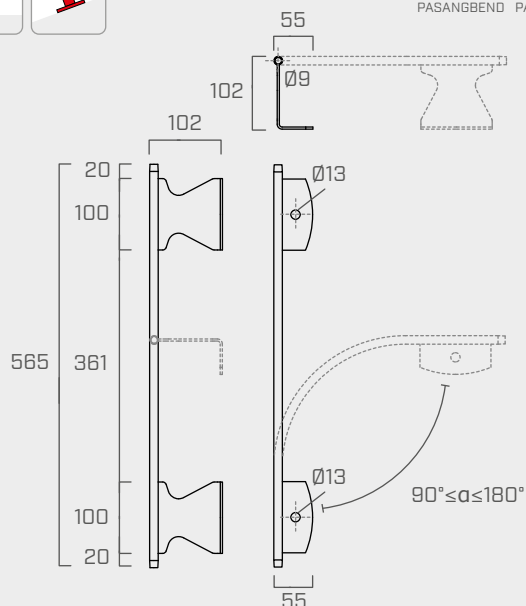
PASANGBENDA4



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## ANGSUP - ANGSUP A4



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AISI304  
**INOX**

ANGSUP

1.4401  
AISI316  
**INOX**

ANGSUPA4



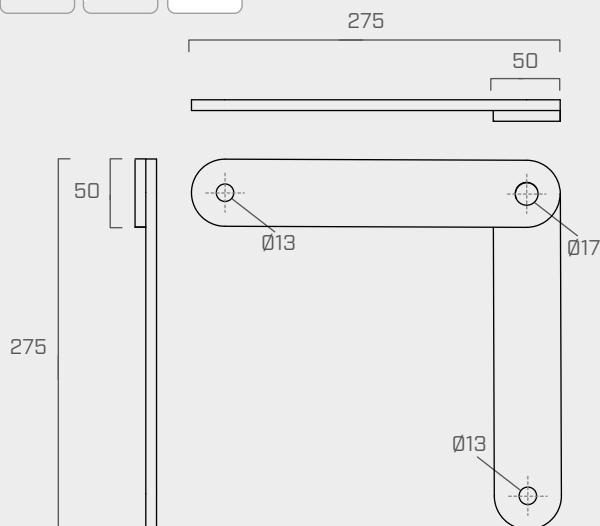
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TOWER  
SHIELD



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## ■ PARIN - PARIN A4

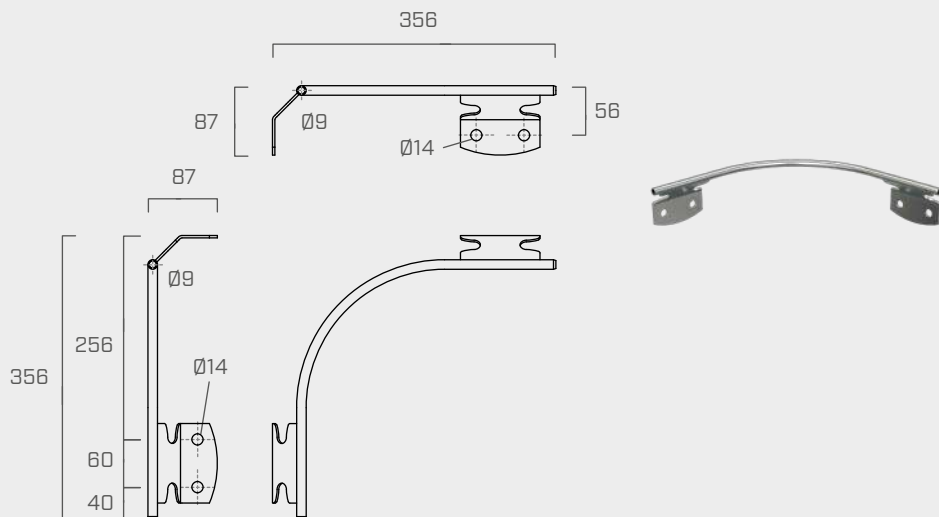


1.4301  
AISI304  
**INOX**  
PARIN

1.4401  
AISI316  
**INOX**  
PARINA4

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## ■ PAREX - PAREX A4

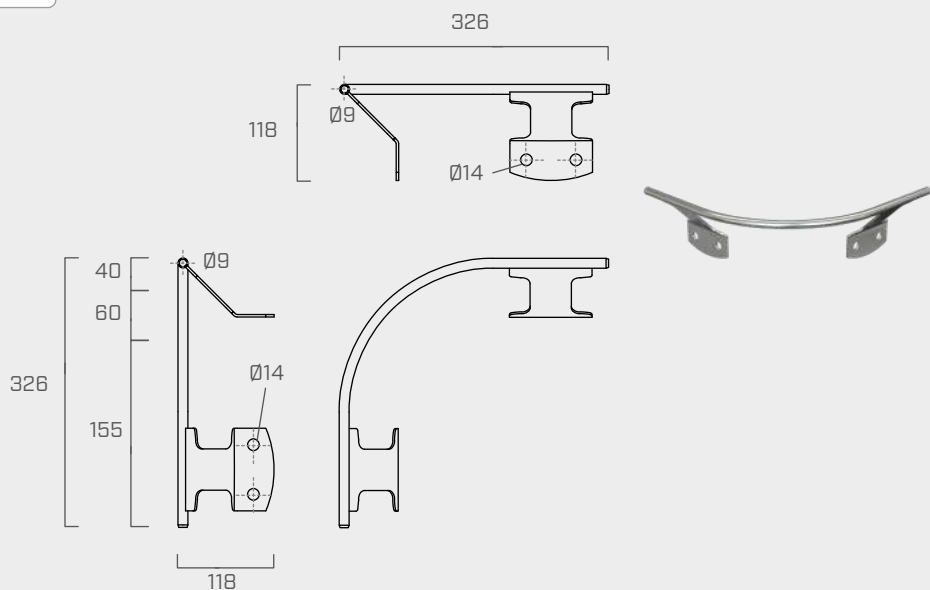


1.4301  
AISI304  
**INOX**  
PAREX

1.4401  
AISI316  
**INOX**  
PAREXA4

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■ **PARINBEND - PARINBEND A4**

1.4301  
AISI304  
**INOX**

PARINBEND

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AISI316  
**INOX**

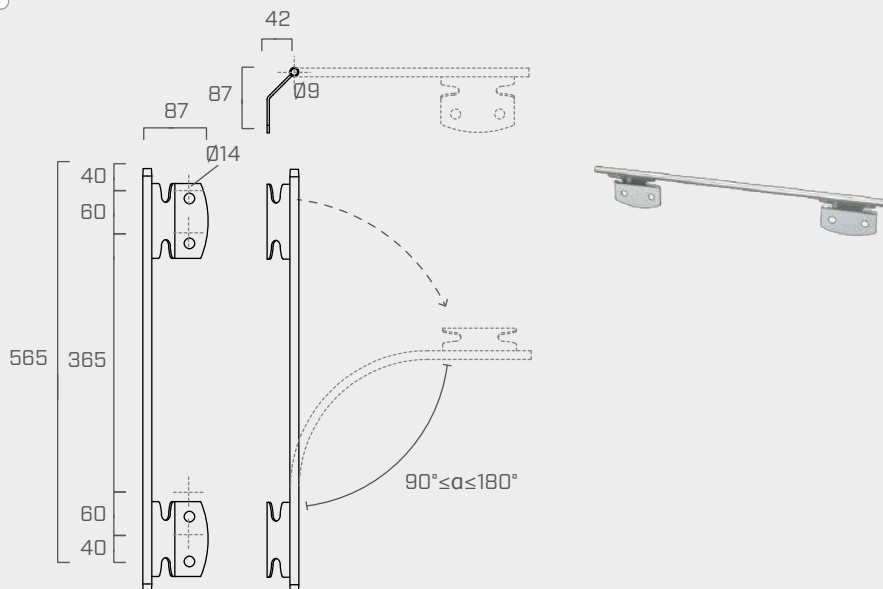
PARINBENDA4



C20/25



S235

■ **PAREXBEND - PAREXBEND A4**

1.4301  
AISI304  
**INOX**

PAREXBEND

1.4401  
AISI316  
**INOX**

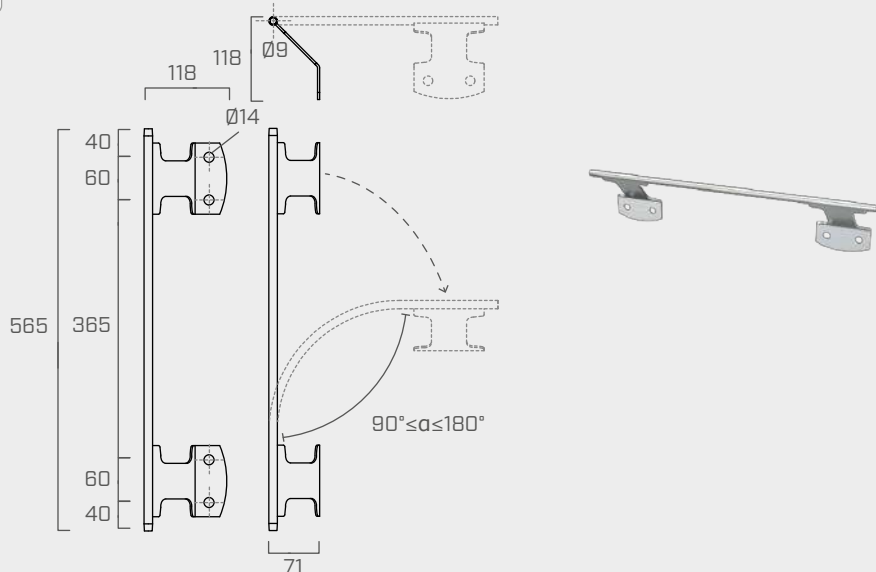
PAREXBENDA4



C20/25



S235



## ■ OHANGINT - OHANGINT A4

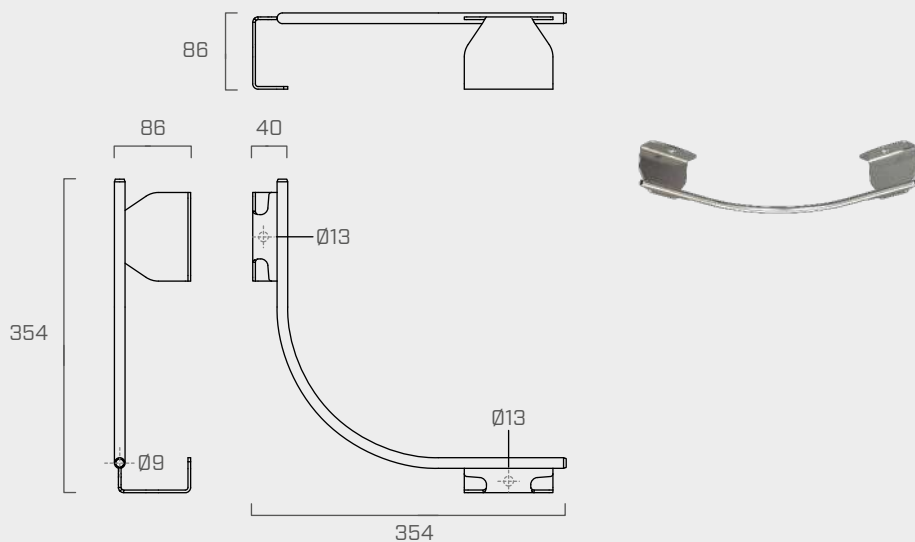


1.4301  
AISI304  
**INOX**  
OHANGINT

1.4401  
AISI316  
**INOX**  
OHANGINTA4

C20/25

S235



## ■ OHANGEXT - OHANGEXT A4

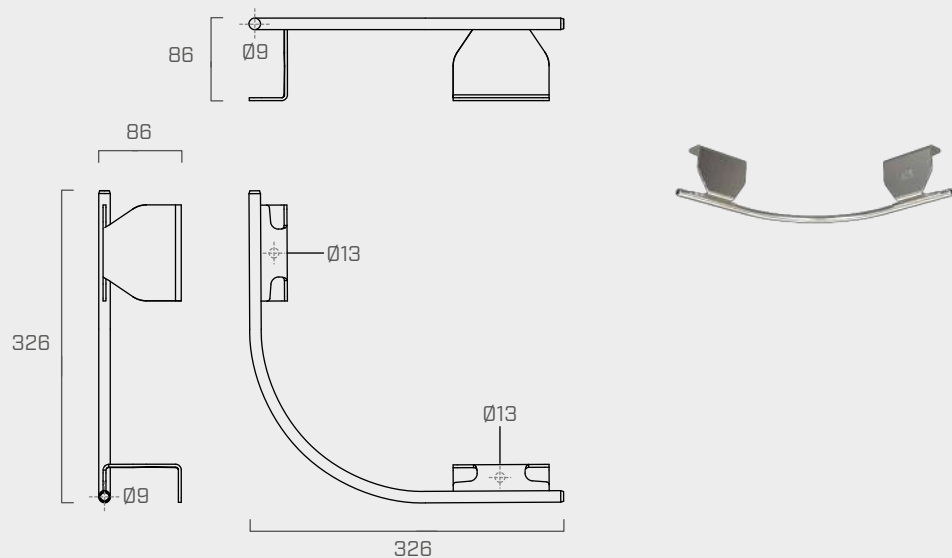


1.4301  
AISI304  
**INOX**  
OHANGEXT

1.4401  
AISI316  
**INOX**  
OHANGEXTA4

C20/25

S235



**OHANGBEND - OHANGBEND A4**



1.4301  
AISI304  
**INOX**

OHANGBEND

1.4401  
AISI316  
**INOX**

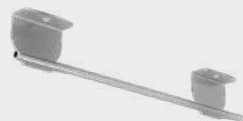
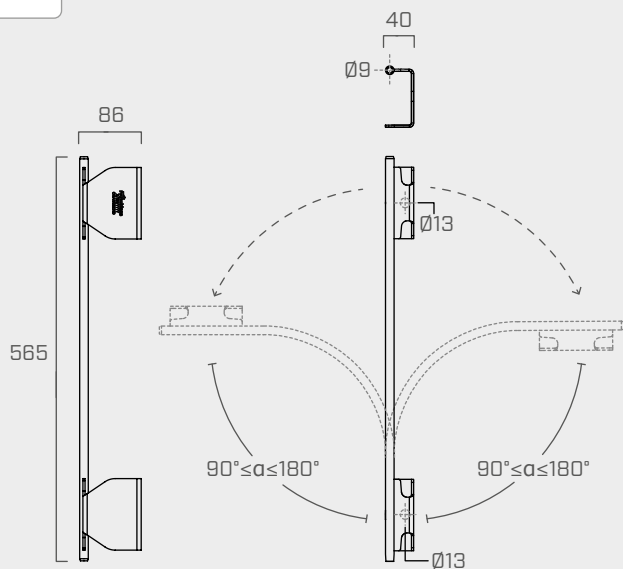
OHANGBENDA4



C20/25



S235



## ■ SLIDE - SLIDE A4

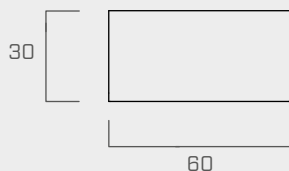
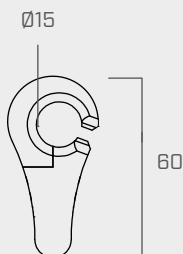
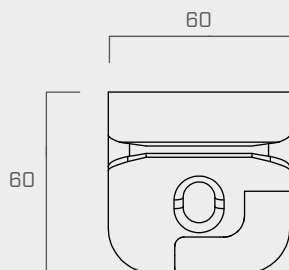


1.4301  
AISI304  
**INOX**  
SLIDE

1.4401  
AISI316  
**INOX**  
SLIDEA4



SLIDE1-SLIDE2-OHSLIDE  
Installation  
Manual



INCLUDED IN THE PACKAGE  
**CARSCREW [AZ 011]**

## ■ SLIDE 2 - SLIDE 2 A4

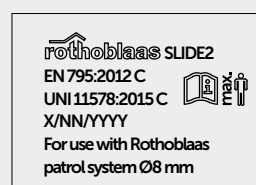
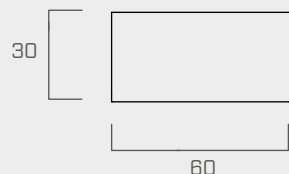
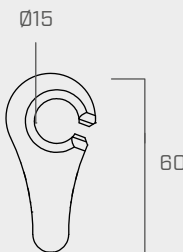
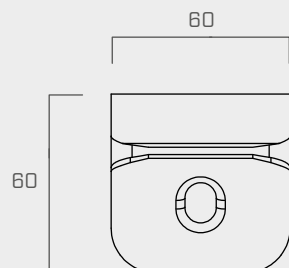


1.4301  
AISI304  
**INOX**  
SLIDE2

1.4401  
AISI316  
**INOX**  
SLIDE2A4



SLIDE1-SLIDE2-OHSLIDE  
Installation  
Manual



INCLUDED IN THE PACKAGE  
**CARSCREW [AZ 011]**

**OHSLIDE - OHSLIDE A4**

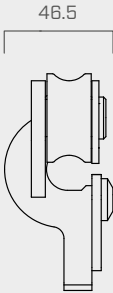
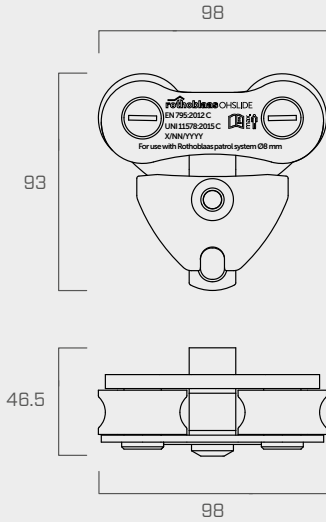


1.4301  
AISI304  
**INOX**  
OHSLIDE

1.4401  
AISI316  
**INOX**  
OHSLIDEA4



SLIDE1-SLIDE2-OHSLIDE  
Installation  
Manual



rothoblaas OHSLIDE  
EN 795:2012 C  
UNI 11578:2015 C  
X/NN/YYYY  
For use with Rothoblaas  
patrol system Ø8 mm



INCLUDED IN THE PACKAGE  
**CARSCREW [AZ 011]**

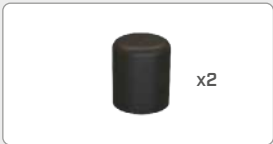
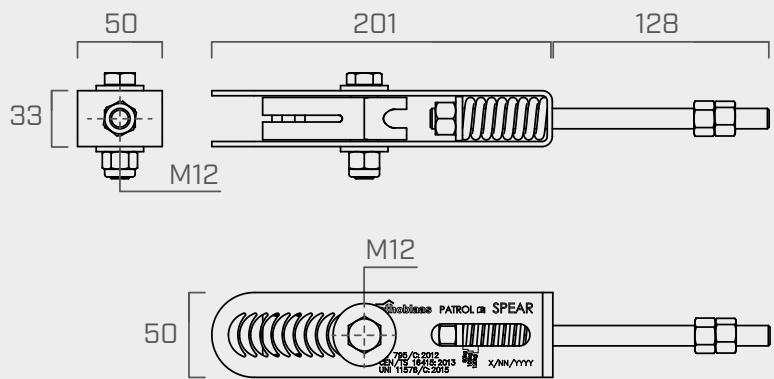


**SPEAR - SPEAR A4**

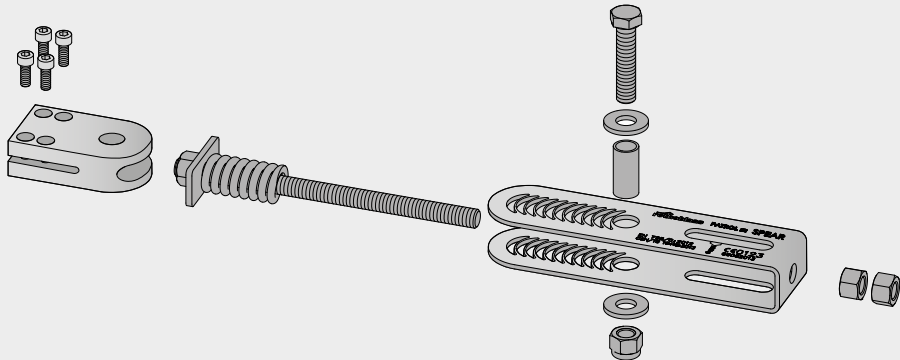


1.4301  
AISI304  
**INOX**  
SPEAR

1.4401  
AISI316  
**INOX**  
SPEARA4



INCLUDED IN THE PACKAGE



ON TOWER



+

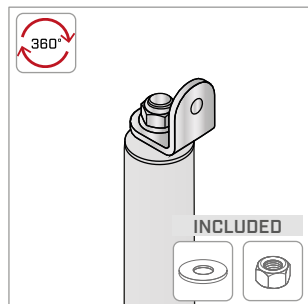


TOWER  
TOWERA2  
Installation  
Manual

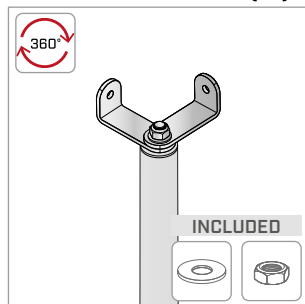
TOWER  
TOWERA2  
Safety  
Regulations



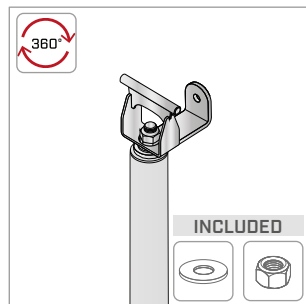
TOWER + PATROLTERM



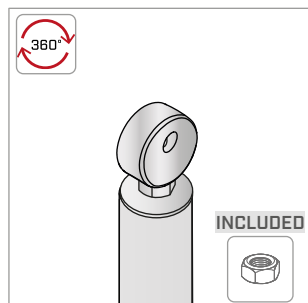
TOWER + PATROLTERM L [x2]



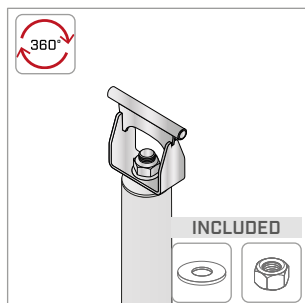
TOWER + PATROLTERM L + PASINT



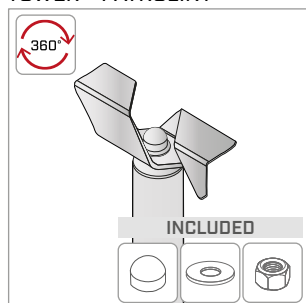
TOWER + PATROLMED



TOWER + PASINT



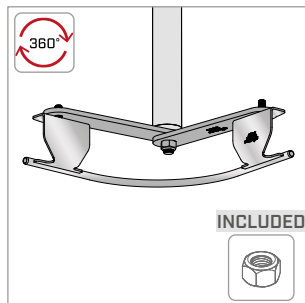
TOWER + PATROLINT



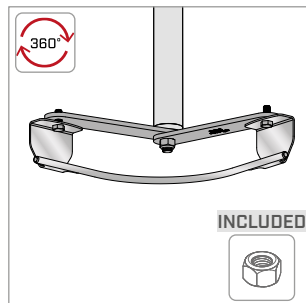
TOWER + OHINT



TOWER + ANG SUP + OHANGEXT



TOWER + ANG SUP + OHANGINT



# SUPPORT INSTALLATION

## ON TOWER

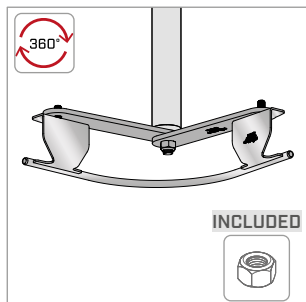


TOWER  
TOWERA2  
Installation  
Manual

TOWER  
TOWERA2  
Safety  
Regulations



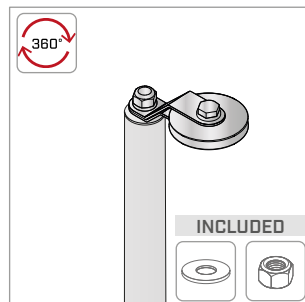
### TOWER + ANGUP + OHANGBEND



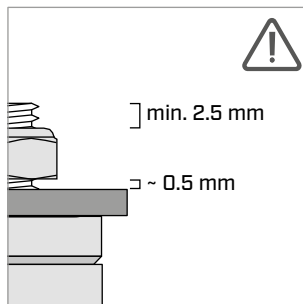
### TOWER + PASANG



### TOWER + PATROLANG



### TOWER + ANGUP + PASANGBEND

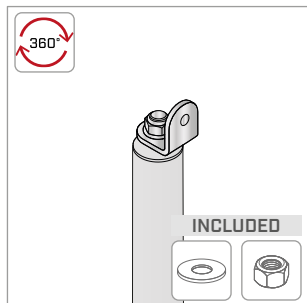




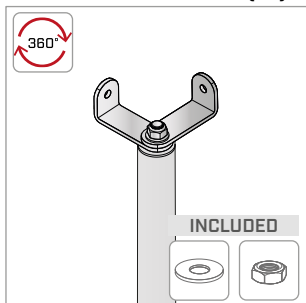
TOWERXL  
Installation  
Manual

TOWERXL  
Safety  
Regulations

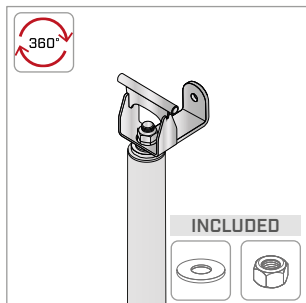
### TOWER + PATROLTERM



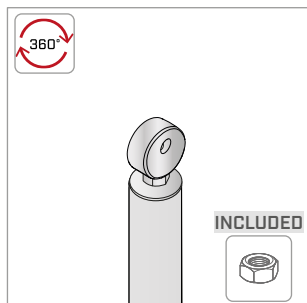
### TOWER + PATROLTERML (x2)



### TOWER + PATROLTERML + PASINT



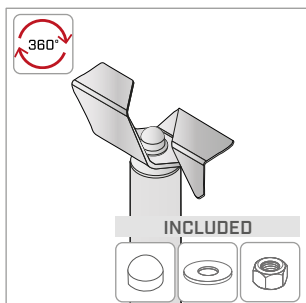
### TOWER + PATROLMED



### TOWER + PASINT



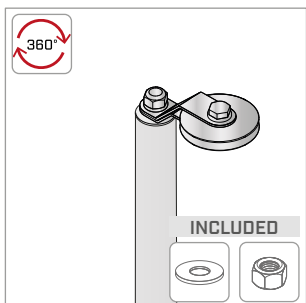
### TOWER + PATROLINT



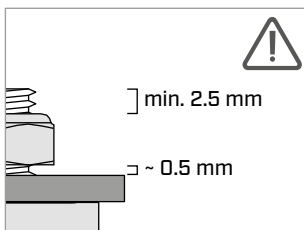
### TOWER + PASANG



### TOWER + PATROLANG



### TOWER + ANGSUP + PASANGBEND



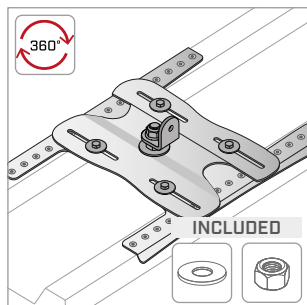
## ON SHIELD



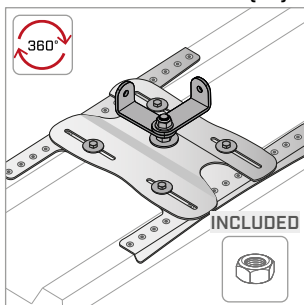
SHIELD-SHIELD4  
Installation  
Manual

SHIELD-SHIELD4  
Safety  
Regulations

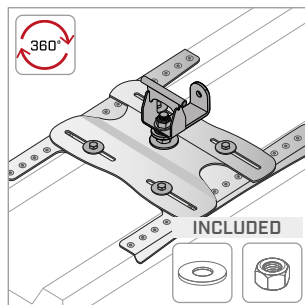
SHIELD + PATROTERM



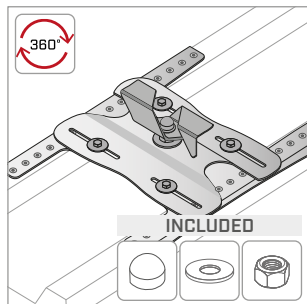
SHIELD + PATROTERM (x2)



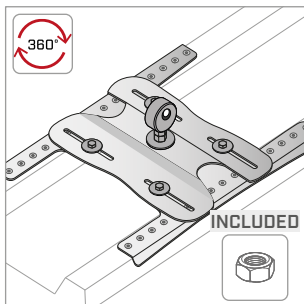
SHIELD + PATROTERM + PASINT



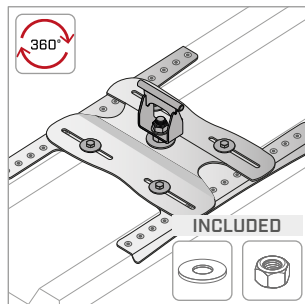
SHIELD + PATROLINT



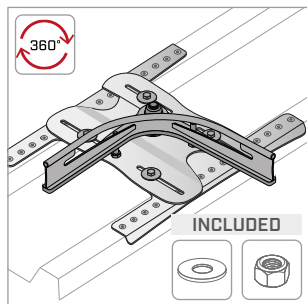
SHIELD + PATROLMED



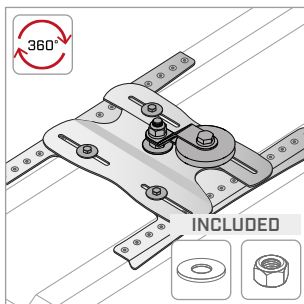
SHIELD + PASINT



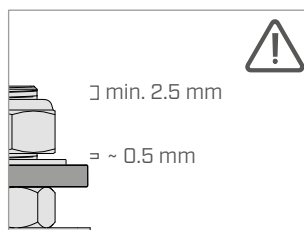
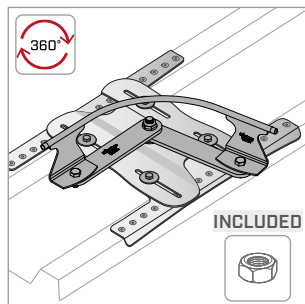
SHIELD + PASANG



SHIELD + PATROLANG



SHIELD + ANGSUP + PASANGBEND



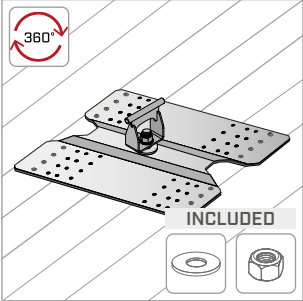
■ ON SHIELD 2



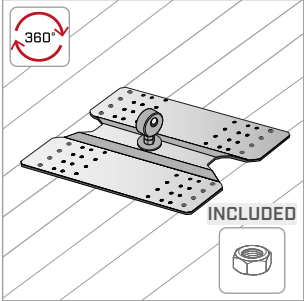
SHIELD2  
Installation  
Manual

SHIELD2  
Safety  
Regulations

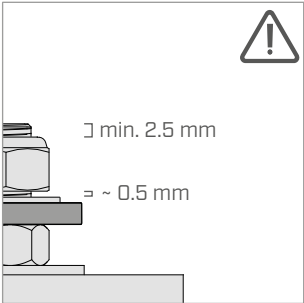
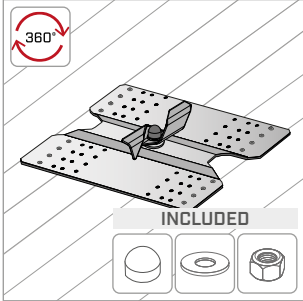
SHIELD 2 + PASINT



SHIELD 2 + PATROLMED



SHIELD 2 + PATROLINT



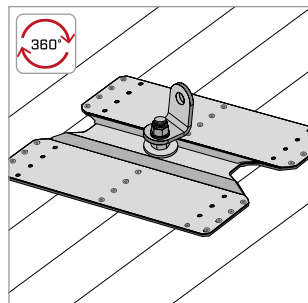


COPPO  
Installation  
Manual

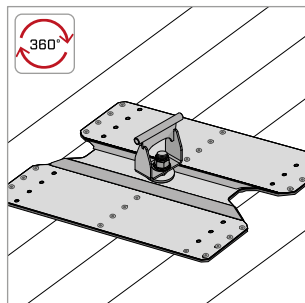


COPPO  
Safety  
Regulations

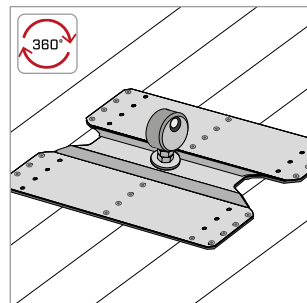
### COPPO + PATROLMTERM



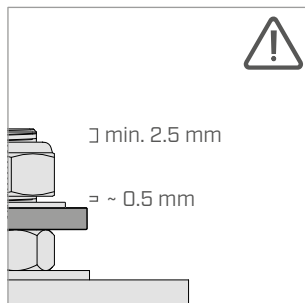
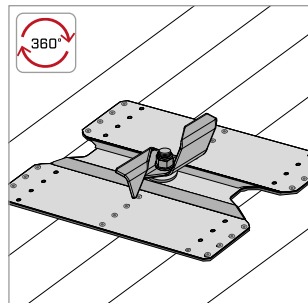
### COPPO + PASINT



### COPPO + PATROLMED

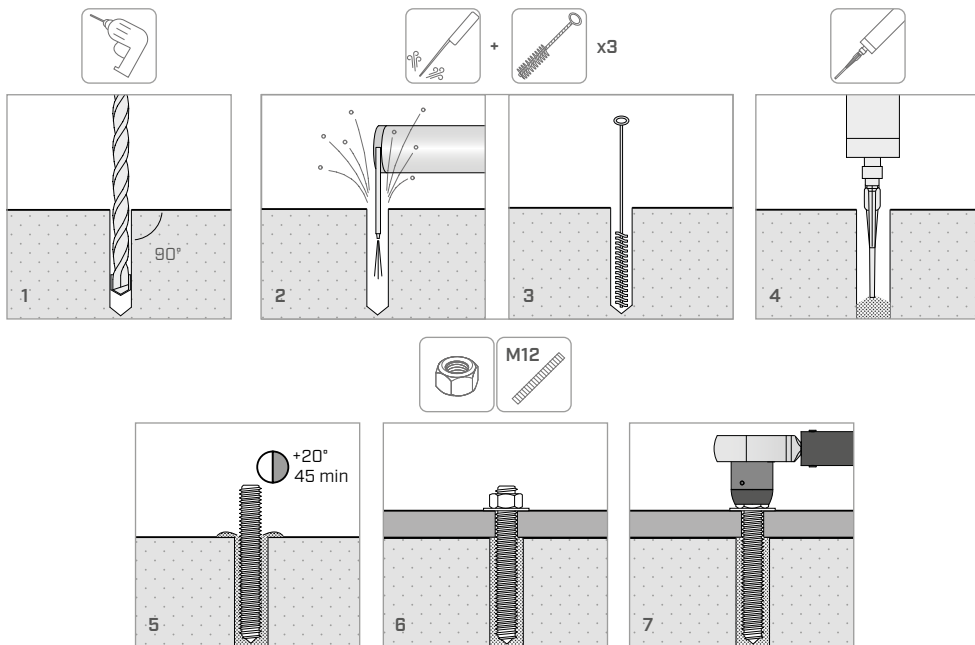


### COPPO + PATROLINT

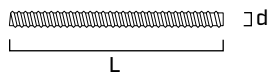
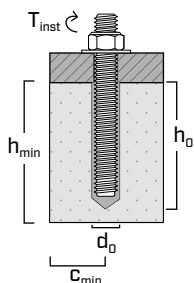




VIN-FIX



M12 - 5.8 min



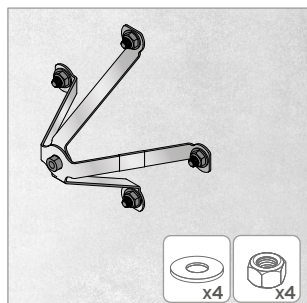
|            |        |               |           |        |                        |
|------------|--------|---------------|-----------|--------|------------------------|
| $d$        | $=$    | 12 mm         | $d_0$     | $=$    | 14 mm                  |
| $L$        | $\geq$ | $h_0 + 25$ mm | $h_0$     | $=$    | 70 mm                  |
| $T_{inst}$ | $=$    | 40 Nm         | $h_{min}$ | $=$    | $h_0 + 30 \geq 100$ mm |
|            |        |               | $c_{min}$ | $\geq$ | 60 mm                  |



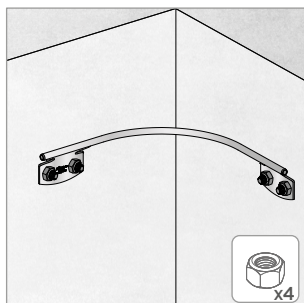
**CONCRETE**

4 X M12

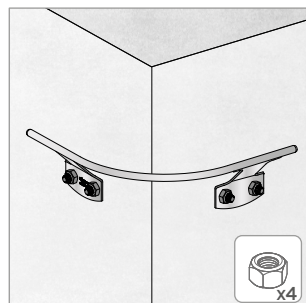
PAREND



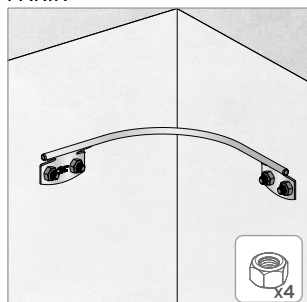
PARINBEND



PAREXBEND



PARIN

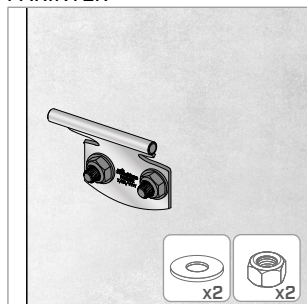


PAREX

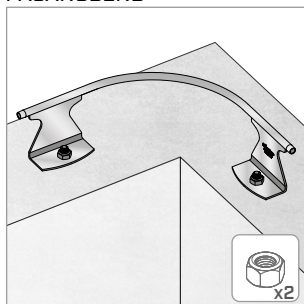


2 X M12

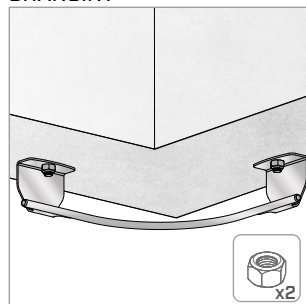
PARINTER



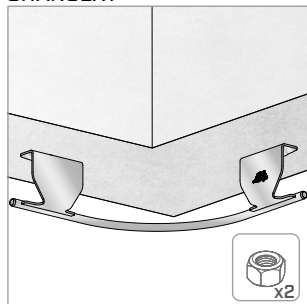
PASANGBEND



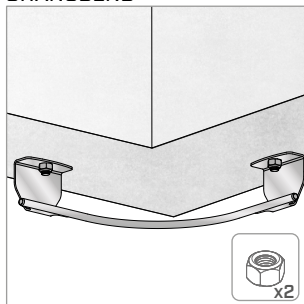
OHANGINT

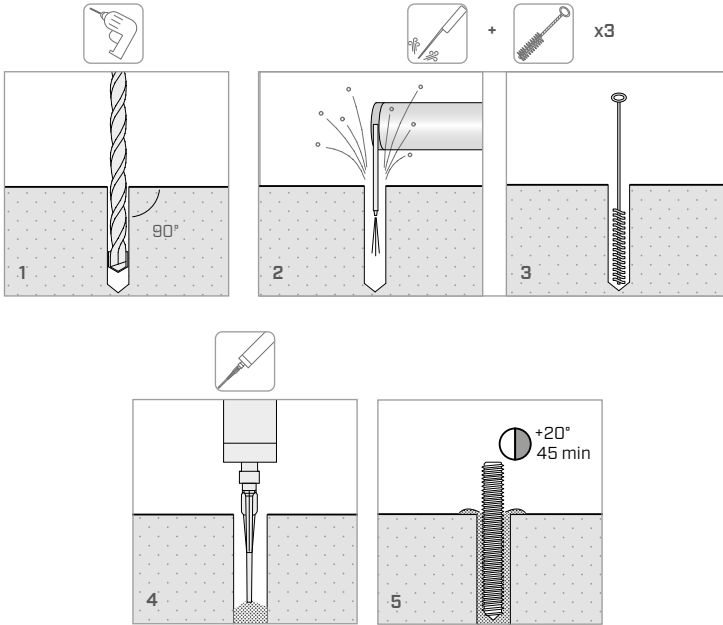
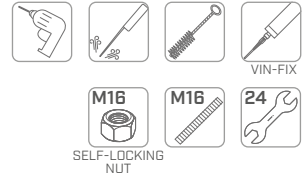


OHANGEXT

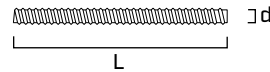
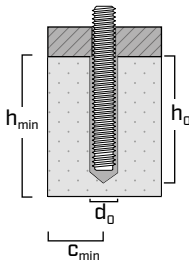


OHANGBEND



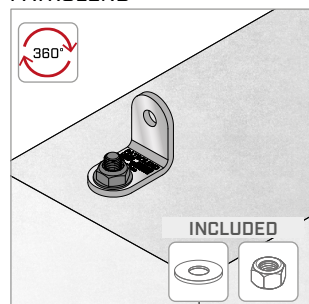


**M16 - 5.8 min**



|            |        |               |           |     |        |
|------------|--------|---------------|-----------|-----|--------|
| $d$        | $=$    | 16 mm         | $d_0$     | $=$ | 18 mm  |
| $L$        | $\geq$ | $h_0 + 30$ mm | $h_0$     | $=$ | 80 mm  |
| $c_{min}$  | $\geq$ | 80 mm         | $h_{min}$ | $=$ | 116 mm |
| $T_{inst}$ | $=$    | 80 Nm         |           |     |        |

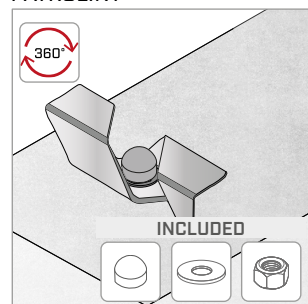
**PATROLEND**



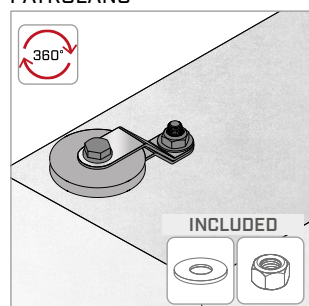
**PASINT**



**PATROLINT**



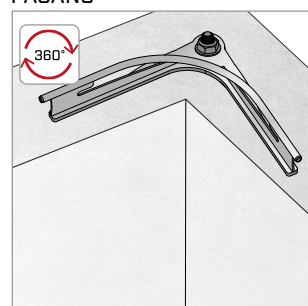
**PATROLANG**



**OHINT**



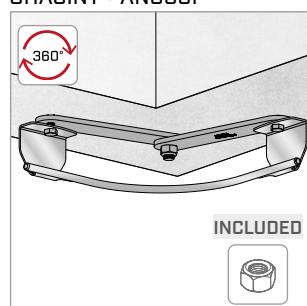
**PASANG**



**PASANGBEND + ANGSUP**



**OHAGINT + ANGSUP**



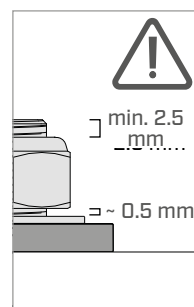
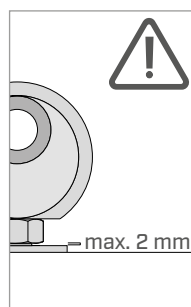
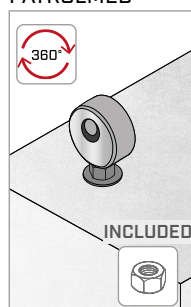
**OHANGEXT + ANGSUP**



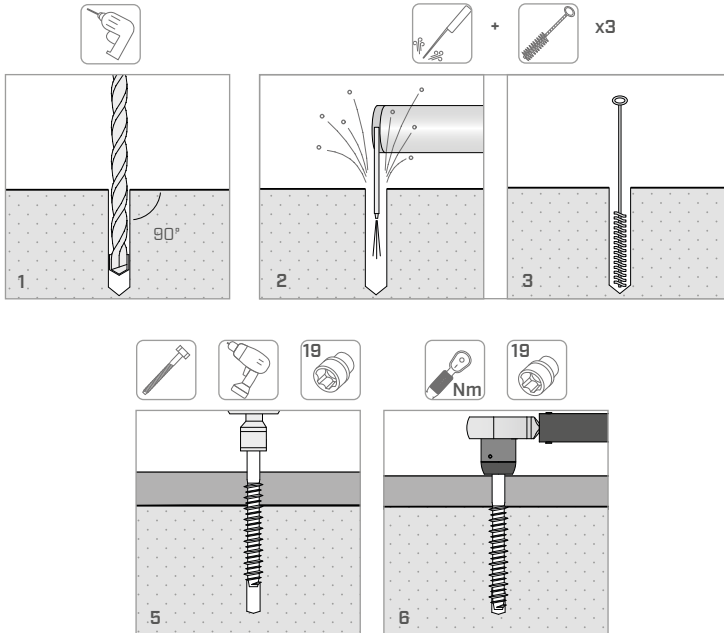
**OHANGBEND + ANGSUP**



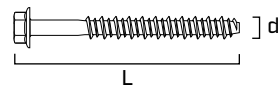
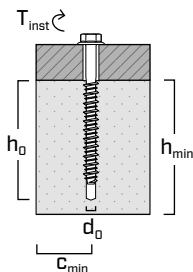
**PATROLMED**



C20/C25



**SKR CE 12 x 90 mm**

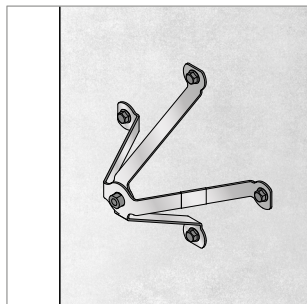


|            |     |       |           |        |        |
|------------|-----|-------|-----------|--------|--------|
| $d$        | $=$ | 12 mm | $d_0$     | $=$    | 10 mm  |
| $L$        | $=$ | 90 mm | $h_0$     | $=$    | 100 mm |
| $T_{inst}$ | $=$ | 80 Nm | $h_{min}$ | $\geq$ | 130 mm |
|            |     |       | $c_{min}$ | $\geq$ | 60 mm  |

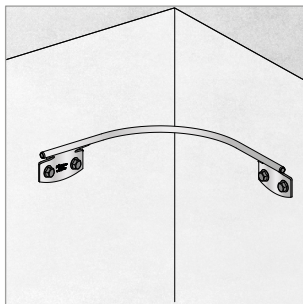
■ **CONCRETE**

4 X M12

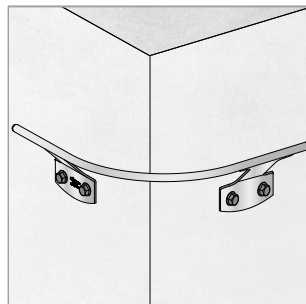
**PAREND**



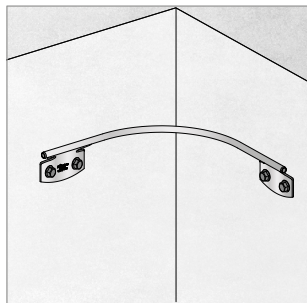
**PARINBEND**



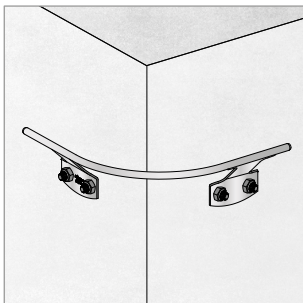
**PAREXBEND**



**PARIN**

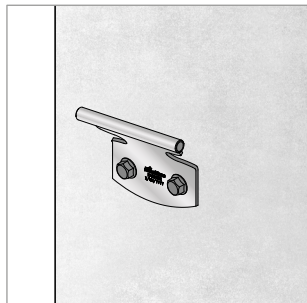


**PAREX**

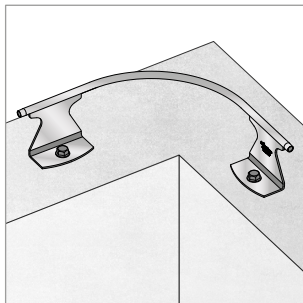


2 X M12

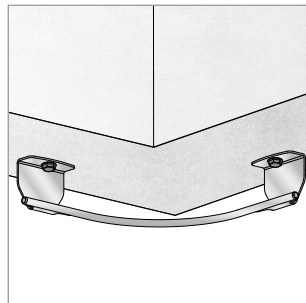
**PARINTER**



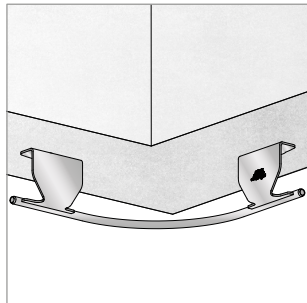
**PASANGBEND**



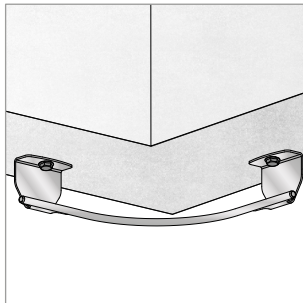
**OHANGINT**



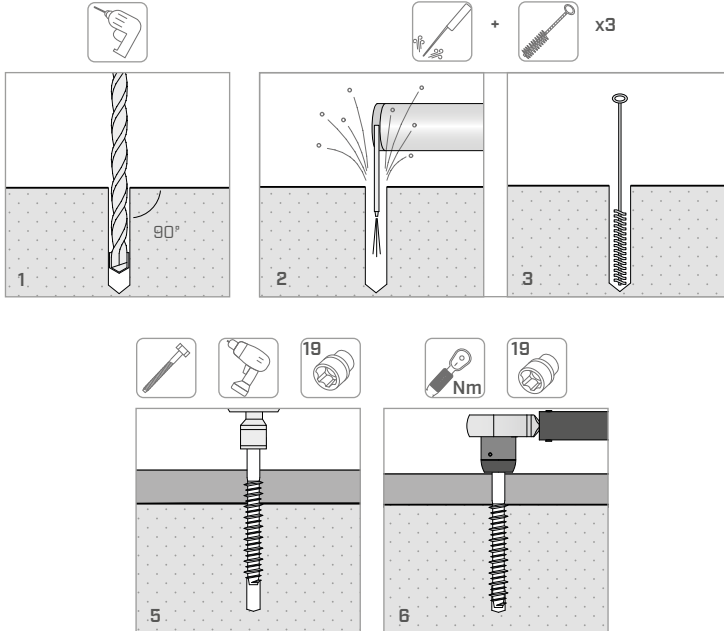
**OHANGEXT**



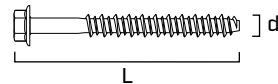
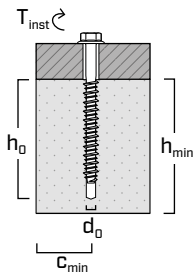
**OHANGBEND**



C20/C25



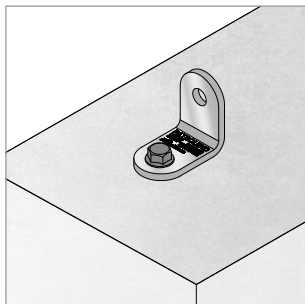
**SKR CE 16 x 130 mm**



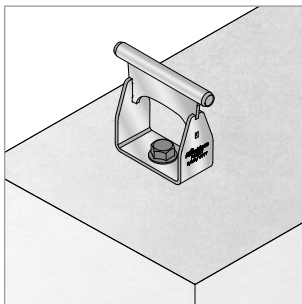
|            |     |        |           |        |        |
|------------|-----|--------|-----------|--------|--------|
| $d$        | $=$ | 16 mm  | $d_0$     | $=$    | 14 mm  |
| $L$        | $=$ | 130 mm | $h_0$     | $=$    | 140 mm |
| $T_{inst}$ | $=$ | 160 Nm | $h_{min}$ | $\geq$ | 170 mm |
|            |     |        | $c_{min}$ | $\geq$ | 80 mm  |



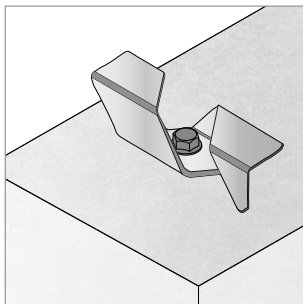
**PATROLEND**



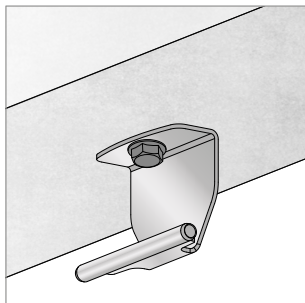
**PASINT**



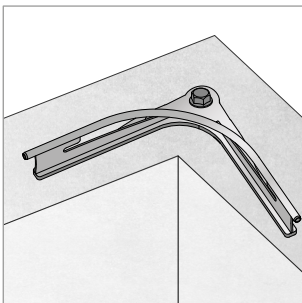
**PATROLINT**



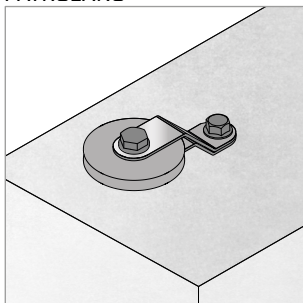
**OHINT**



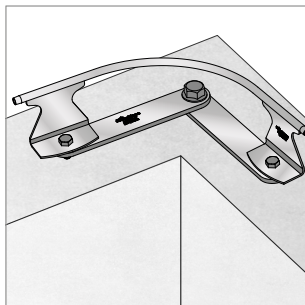
**PASANG**



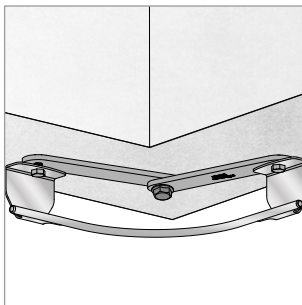
**PATROLANG**



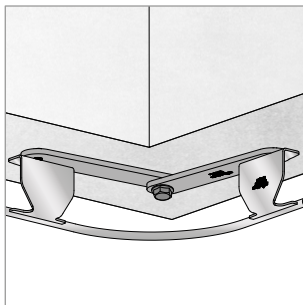
**PASANGBEND + ANG SUP**



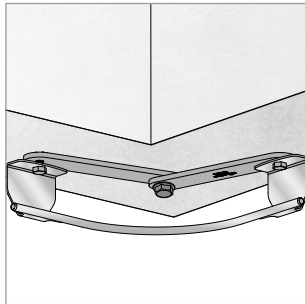
**OHANGINT + ANG SUP**

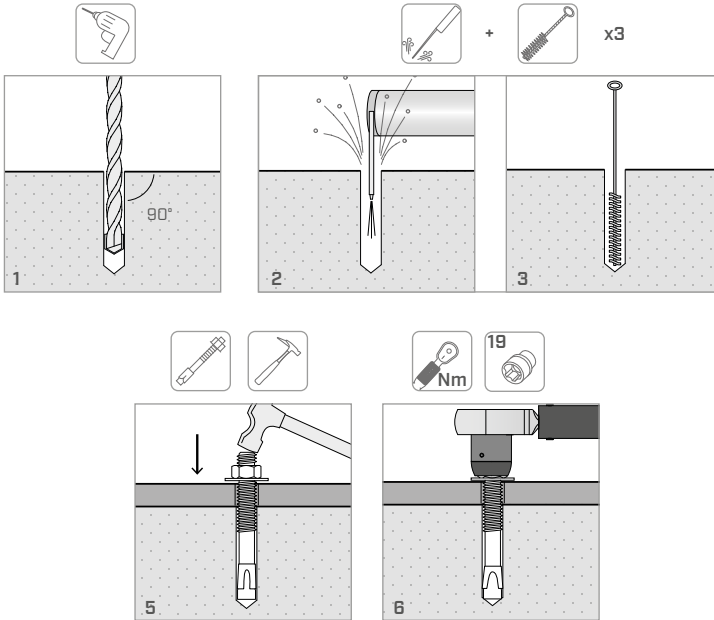


**OHANGEXT + ANG SUP**

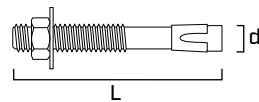
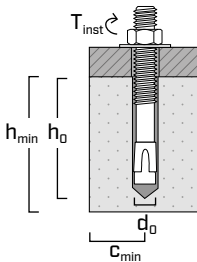
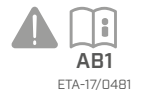


**OHANGBEND + ANG SUP**





**AB1 12 x 100 mm**



|            |     |        |           |        |        |
|------------|-----|--------|-----------|--------|--------|
| $d$        | $=$ | 12 mm  | $d_0$     | $=$    | 12 mm  |
| $L$        | $=$ | 100 mm | $h_0$     | $=$    | 85 mm  |
| $T_{inst}$ | $=$ | 60 Nm  | $h_{min}$ | $\geq$ | 140 mm |
|            |     |        | $c_{min}$ | $\geq$ | 70 mm  |

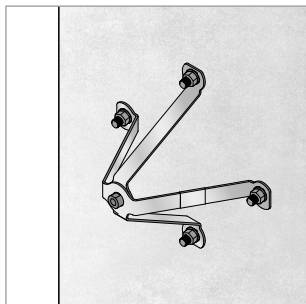


**CONCRETE**

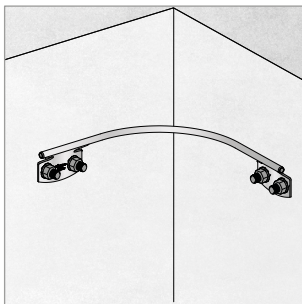


4 X M12

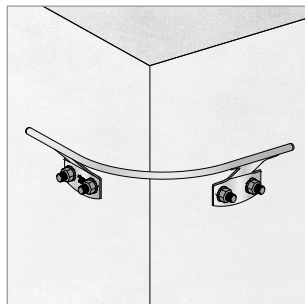
PAREND



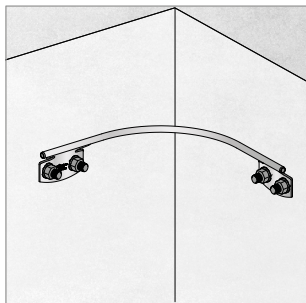
PARINBEND



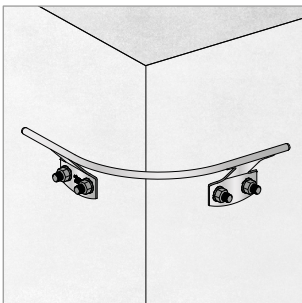
PAREXBEND



PARIN

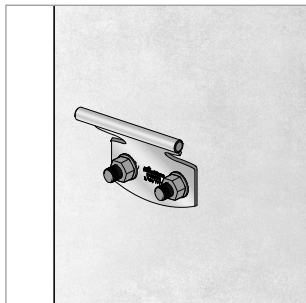


PAREX

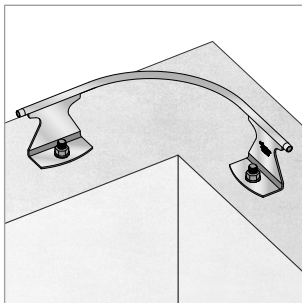


2 X M12

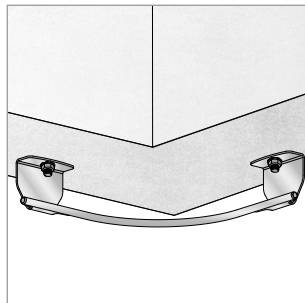
PARINTER



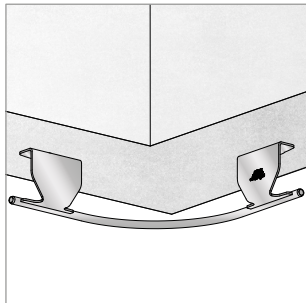
PASANGBEND



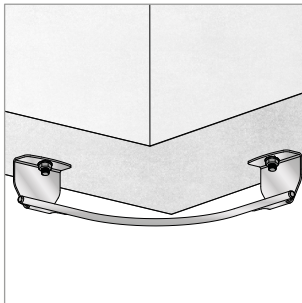
OHANGINT

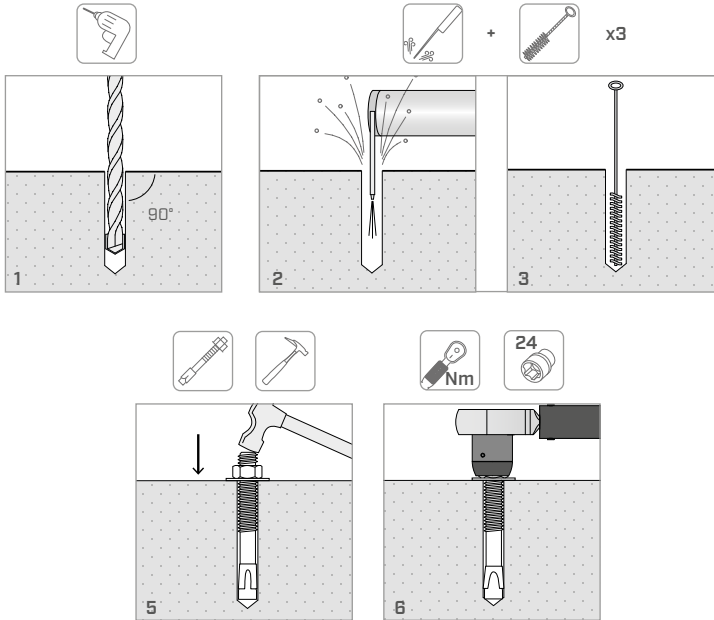


OHANGEXT

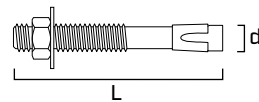
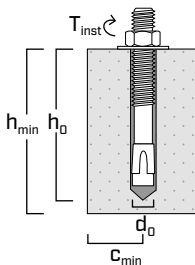


OHANGBEND



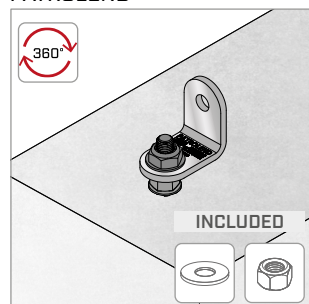


**AB1 16 x 145 mm**



|            |     |        |           |        |        |
|------------|-----|--------|-----------|--------|--------|
| $d$        | $=$ | 16 mm  | $d_0$     | $=$    | 16 mm  |
| $L$        | $=$ | 145 mm | $h_0$     | $\geq$ | 105 mm |
| $T_{inst}$ | $=$ | 100 Nm | $h_{min}$ | $\geq$ | 170 mm |
|            |     |        | $c_{min}$ | $\geq$ | 85 mm  |

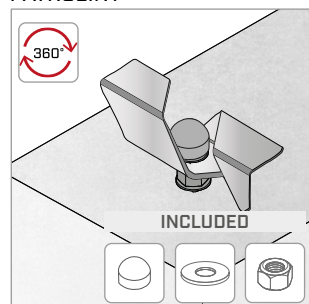
**PATROLEND**



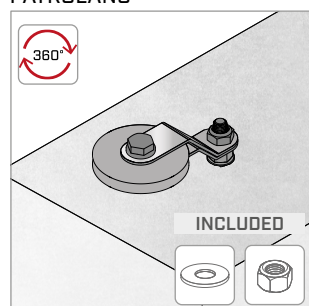
**PASINT**



**PATROLINT**



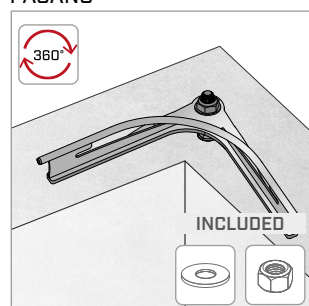
**PATROLANG**



**OHINT**



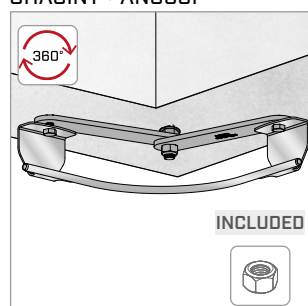
**PASANG**



**PASANGBEND + ANGSP**



**OHAGINT + ANGSP**



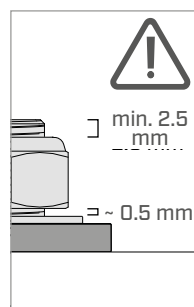
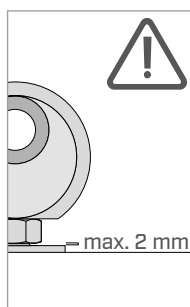
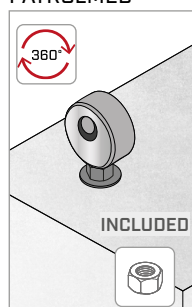
**OHANGEXT + ANGSP**



**OHANGBEND + ANGSP**

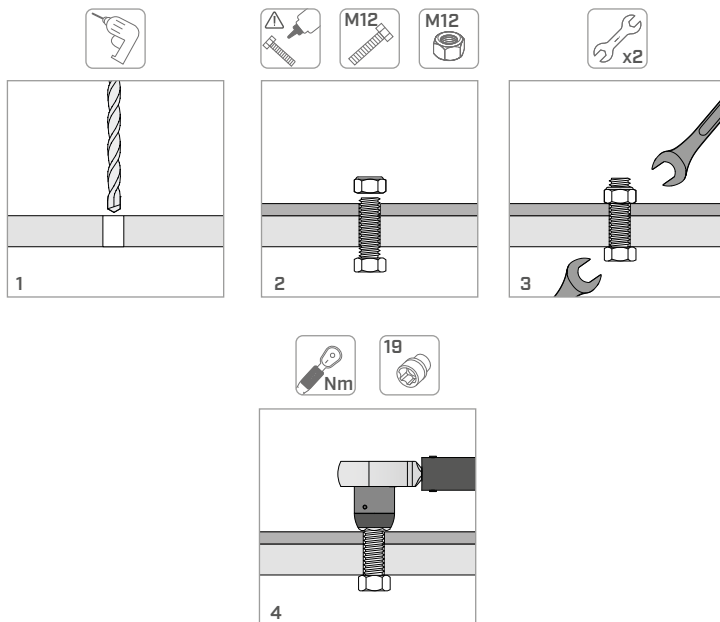


**PATROLMED**

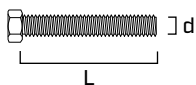
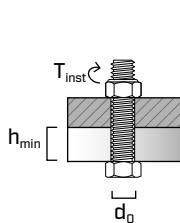




SELF-LOCKING  
NUT



**M12 - A2-70**

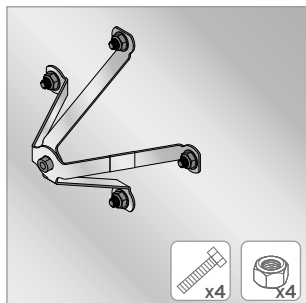


|       |   |                    |           |   |         |
|-------|---|--------------------|-----------|---|---------|
| $d$   | = | 12 mm              | $d_0$     | = | 12,5 mm |
| $L$   | ≥ | $h_{min} + 25$ mm  | $h_{min}$ | ≥ | 5 mm    |
| A2-70 | ► | $T_{inst} = 30$ Nm |           |   |         |

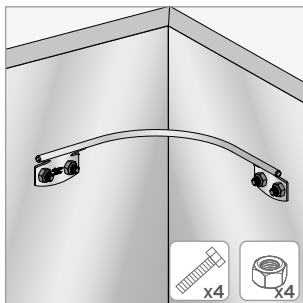
# STEEL

4 X M12

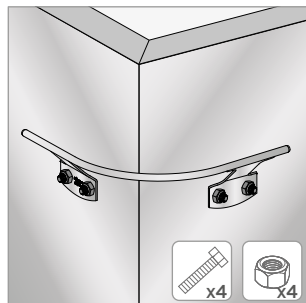
PAREND



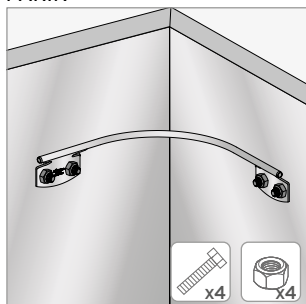
PARINBEND



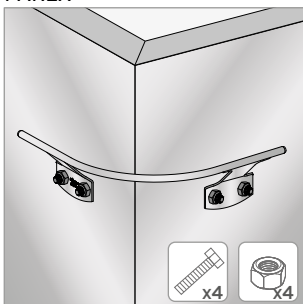
PAREXBEND



PARIN

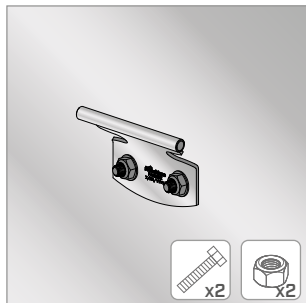


PAREX

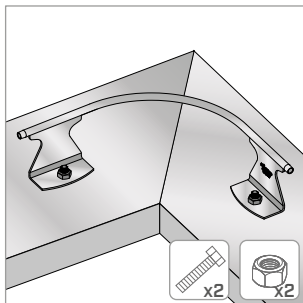


2 X M12

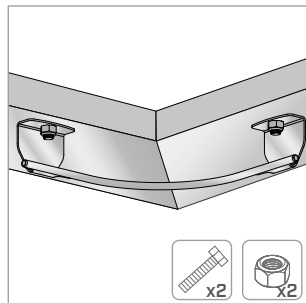
PARINTER



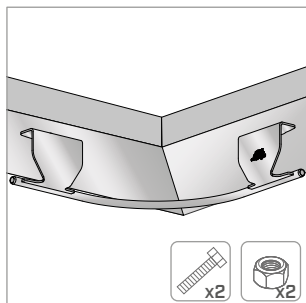
PASANGBEND



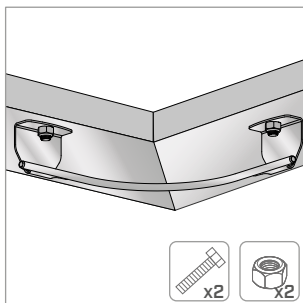
DHANGINT

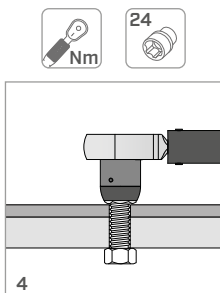
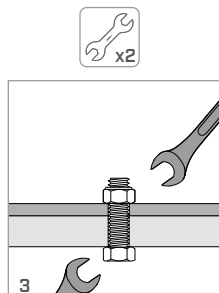
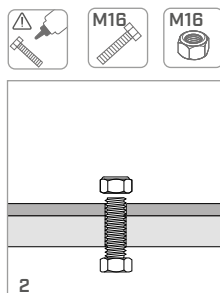
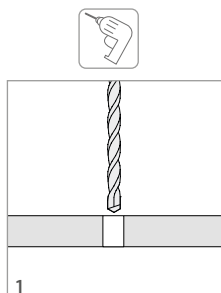


DHANGEXT

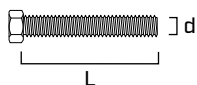
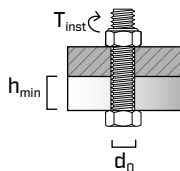


DHANGBEND



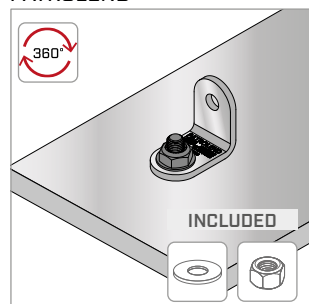


**M16 - A2-70**

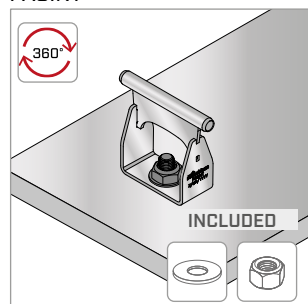


|     |        |                   |           |        |         |
|-----|--------|-------------------|-----------|--------|---------|
| $d$ | $=$    | 16 mm             | $d_0$     | $=$    | 16,5 mm |
| $L$ | $\geq$ | $h_{min} + 45$ mm | $h_{min}$ | $\geq$ | 5 mm    |

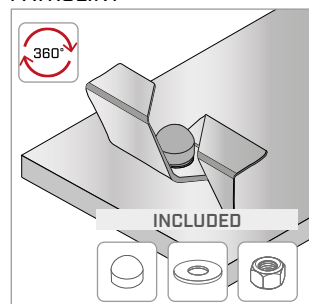
**PATROLEND**



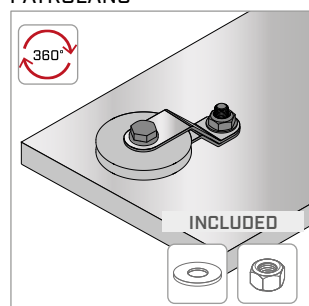
**PASINT**



**PATROLINT**



**PATROLANG**



**OHINT**



**PASANG**



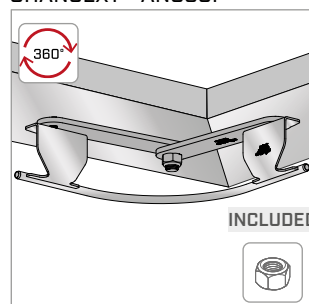
**PASANGBEND + ANGSUP**



**OHAGINT + ANGSUP**



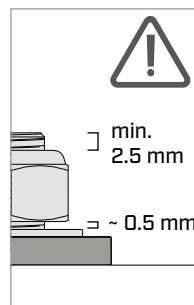
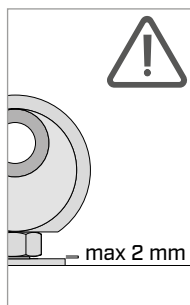
**OHANGEXT + ANGSUP**



**OHANGBEND + ANGSUP**

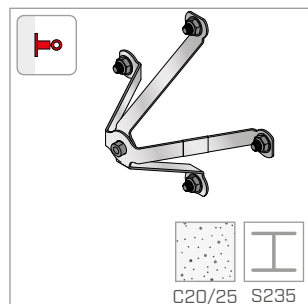


**PATROLMED**

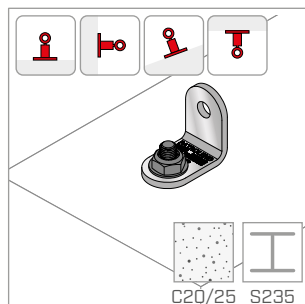


## ■ TERMINAL SUPPORTS INSTALLATION

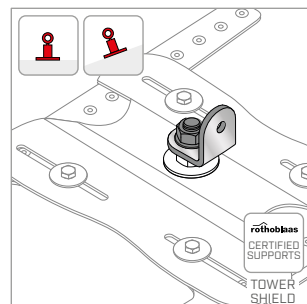
PAREND



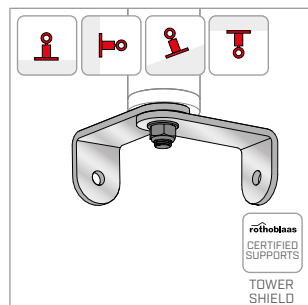
PATROLEND



PATROLTERM

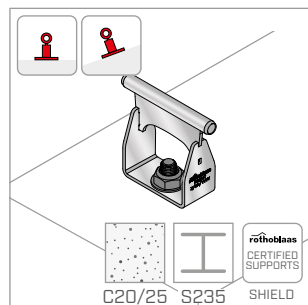


PATROLTERM L

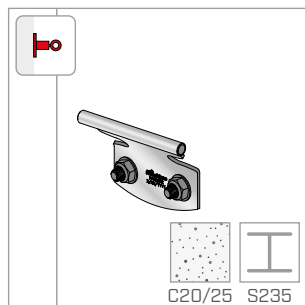


## ■ INTERMEDIATE SUPPORTS INSTALLATION

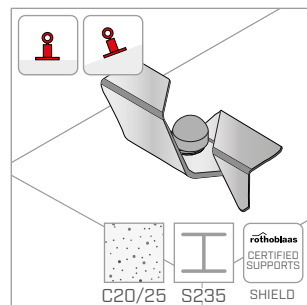
PASINT



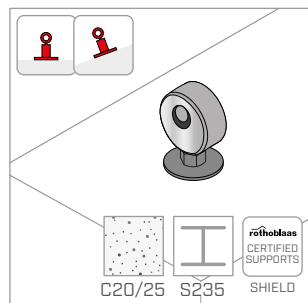
PARINTER



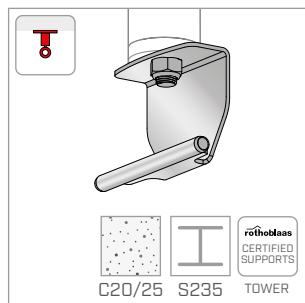
PATROLINT



PATROLMED



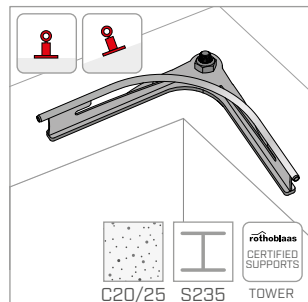
OHINT



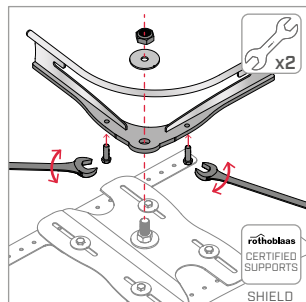


## CORNER SUPPORTS INSTALLATION

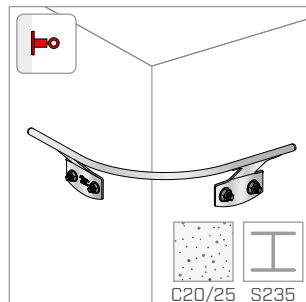
PASANG



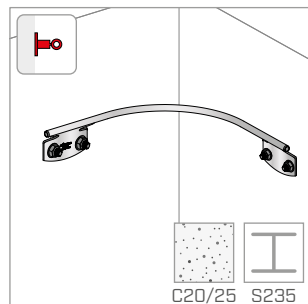
PASANG + SHIELD



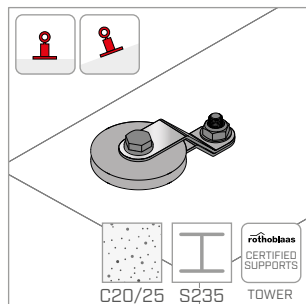
PAREX



PARIN

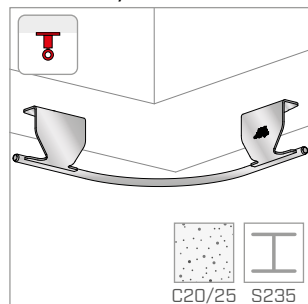


PATROLANG

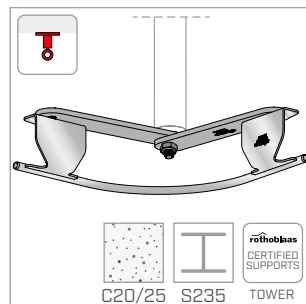
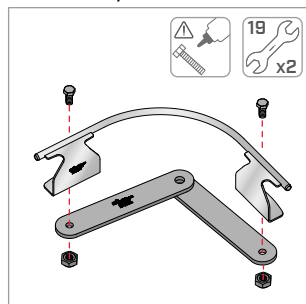


## OVERHEAD CORNER SUPPORTS INSTALLATION

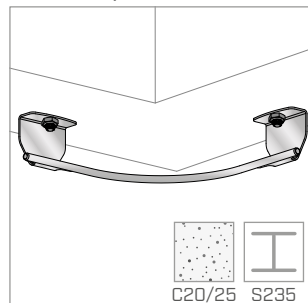
OHANGEXT/OHANGBEND



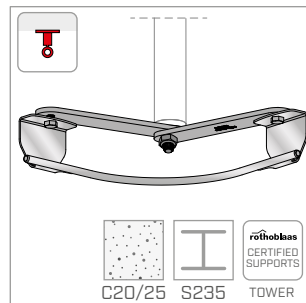
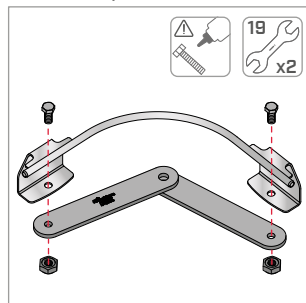
OHANGEXT/OHANGBEND + ANGSEP



OHANGINT/OHANGBEND

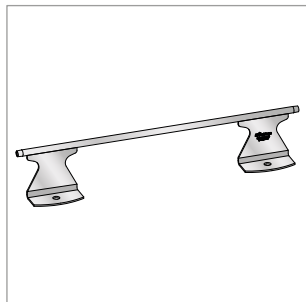


OHANGINT/OHANGBEND + ANGSEP

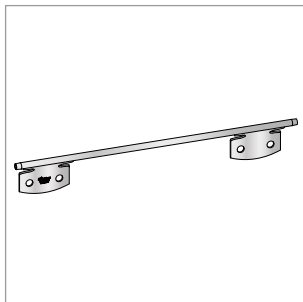


## ■ ADJUSTABLE CORNER SUPPORTS INSTALLATION

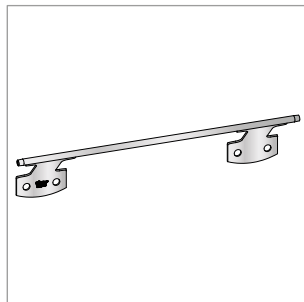
PASANGBEND



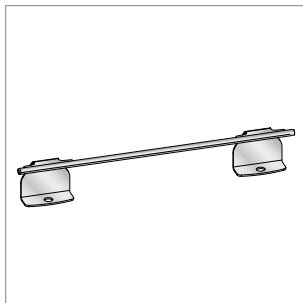
PARINBEND



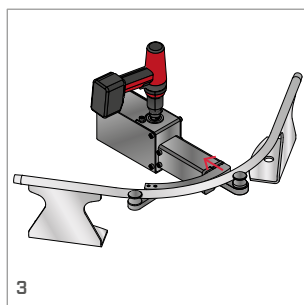
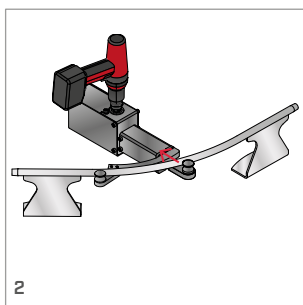
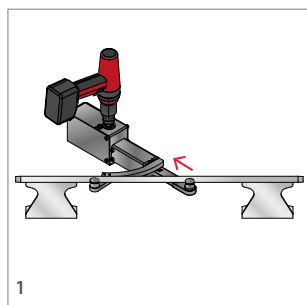
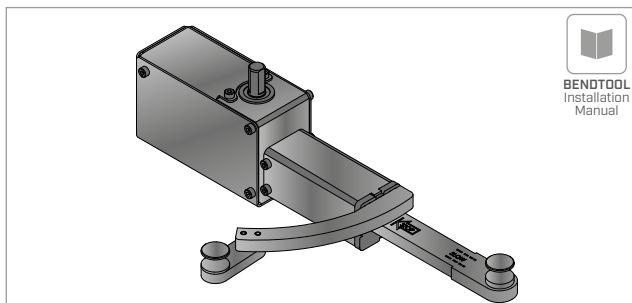
PAREXBEND



QHANGBEND

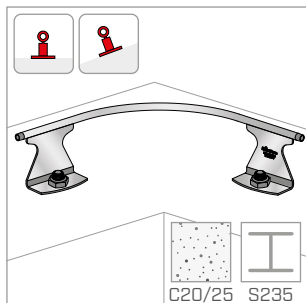


BENDTOOL

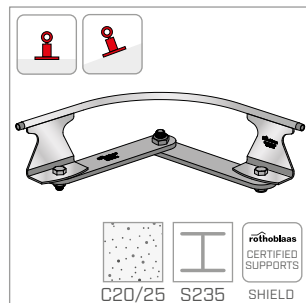
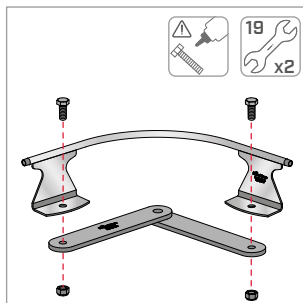


## ■ ADJUSTABLE CORNER SUPPORTS INSTALLATION

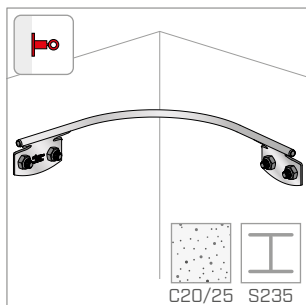
### PASANGBEND



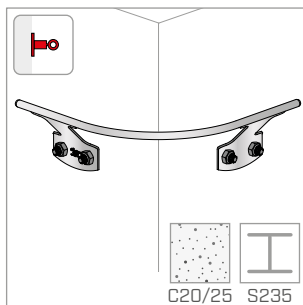
### PASANGBEND + ANGUP



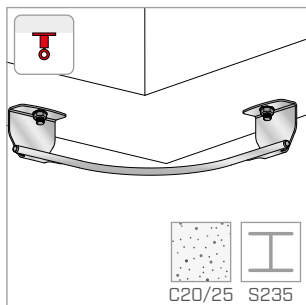
### PARINBEND



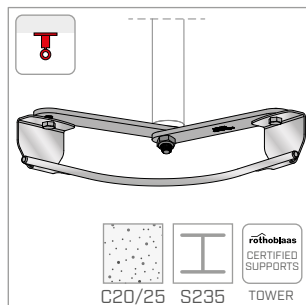
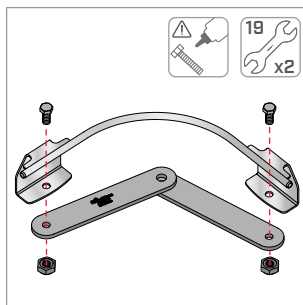
### PAREXBEND



### OHANGBEND



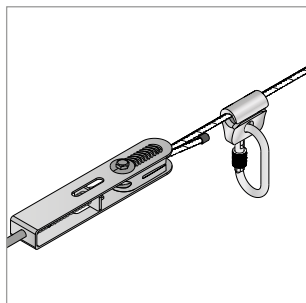
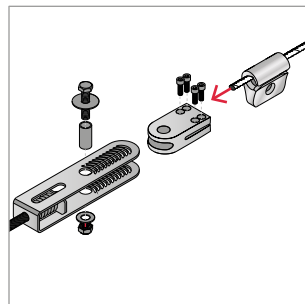
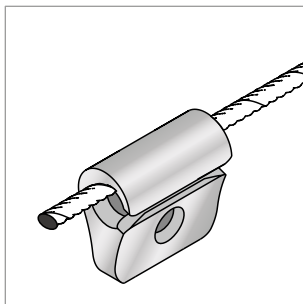
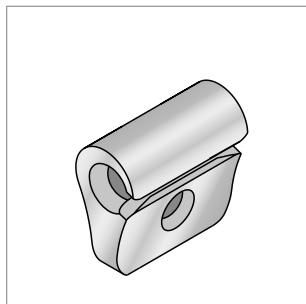
### OHANGBEND + ANGUP



## ■ SLIDE 2 INSTALLATION



SLIDE1-SLIDE2-OHSLIDE  
Installation  
Manual

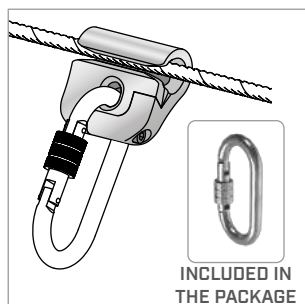
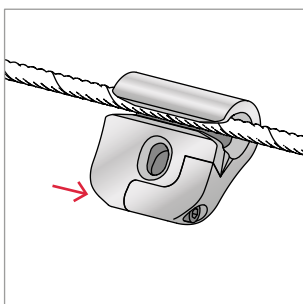
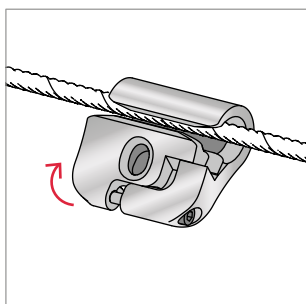
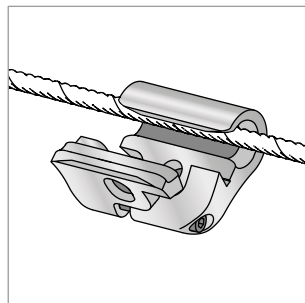
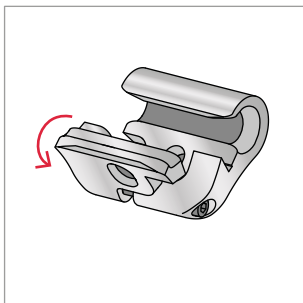
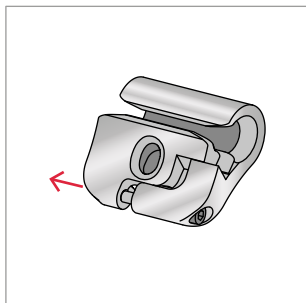


INCLUDED IN  
THE PACKAGE



SLIDE1-SLIDE2-OHSLIDE  
Installation  
Manual

## ■ SLIDE 1 INSTALLATION



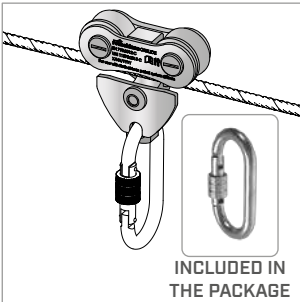
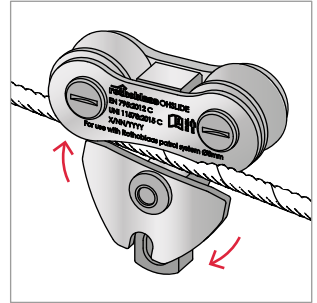
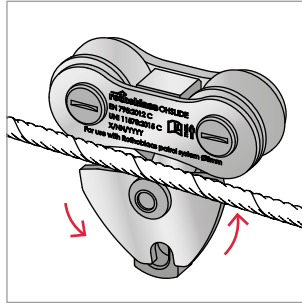
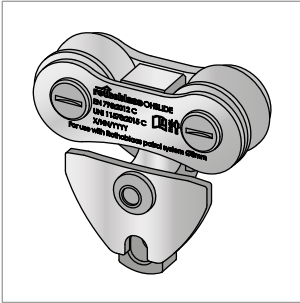
INCLUDED IN  
THE PACKAGE

# LIFELINE INSTALLATION

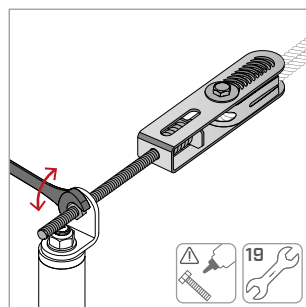
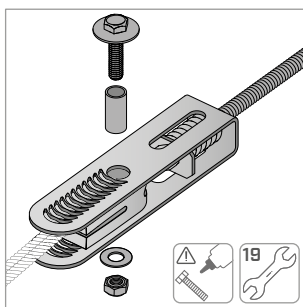
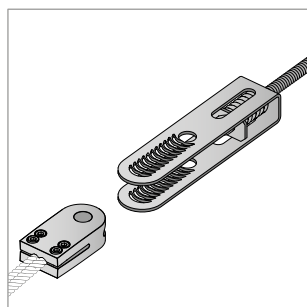
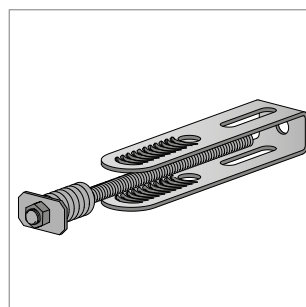
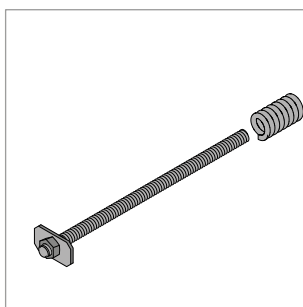
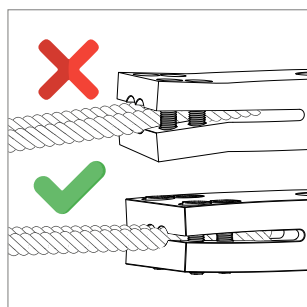
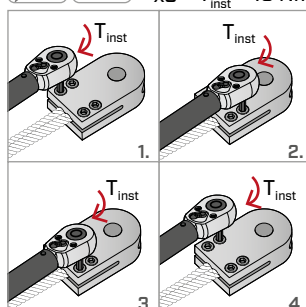
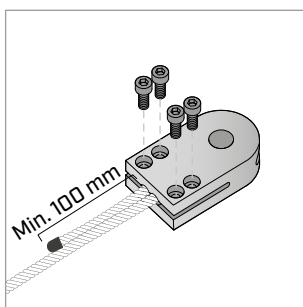
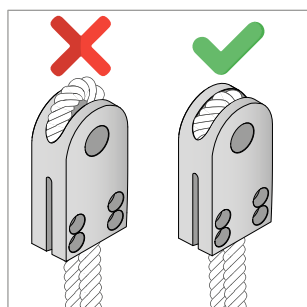
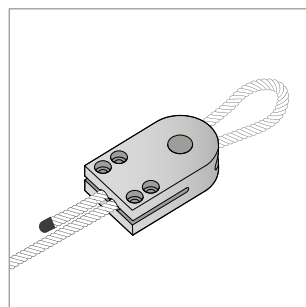
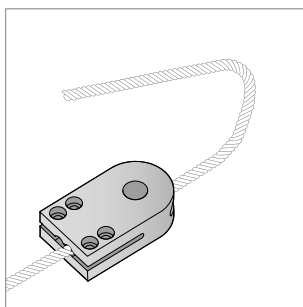
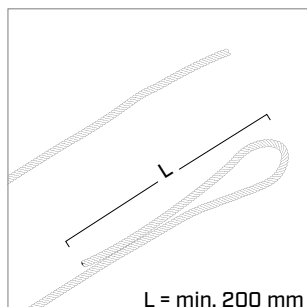
## OHSLIDE INSTALLATION



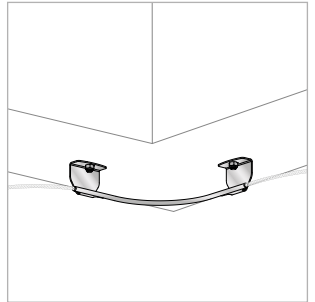
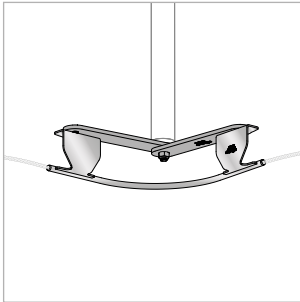
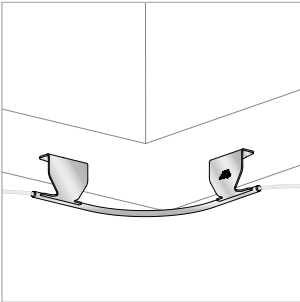
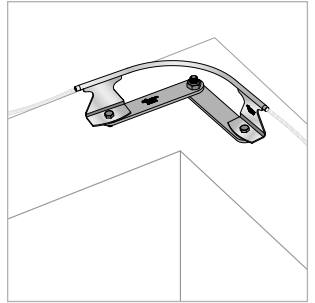
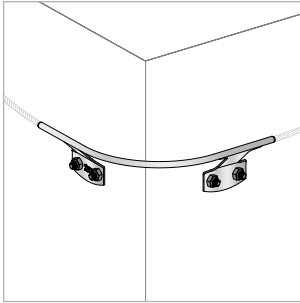
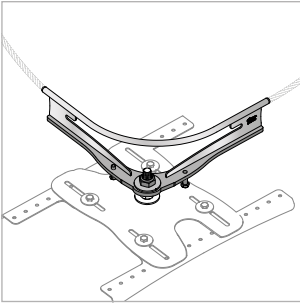
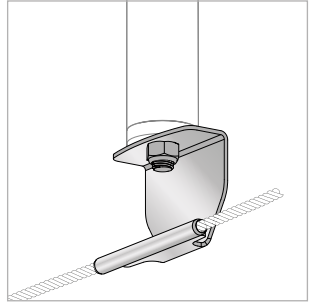
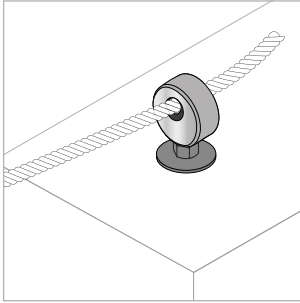
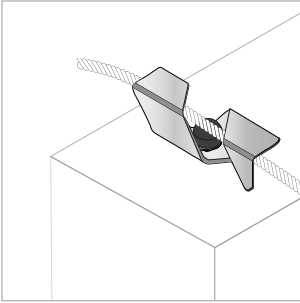
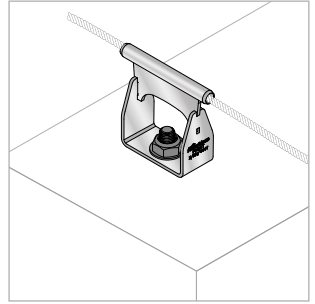
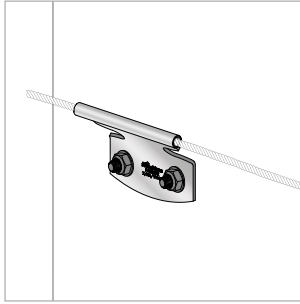
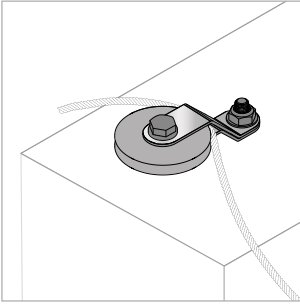
SLIDET-SLIDE2-OHSLIDE  
Installation  
Manual



## SPEAR INSTALLATION

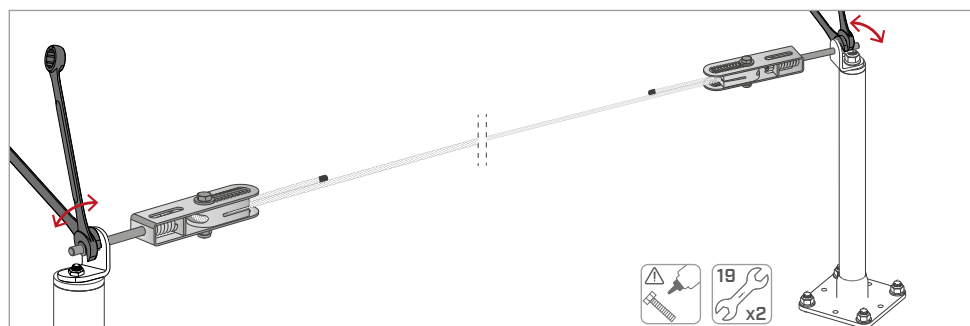
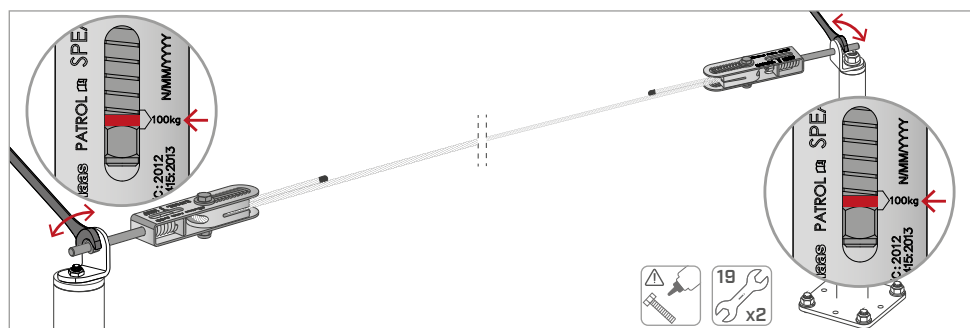
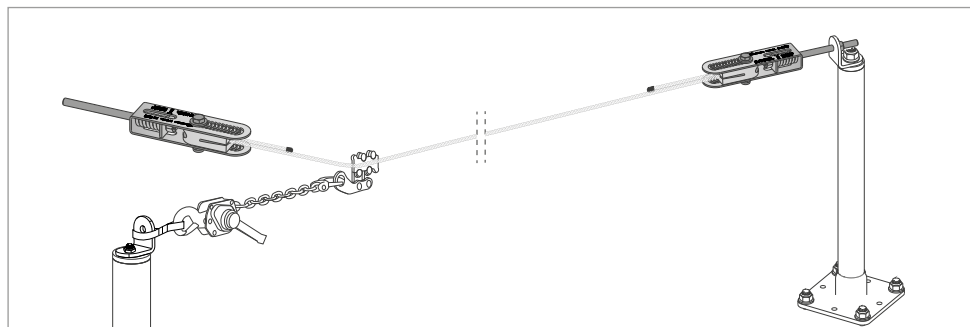
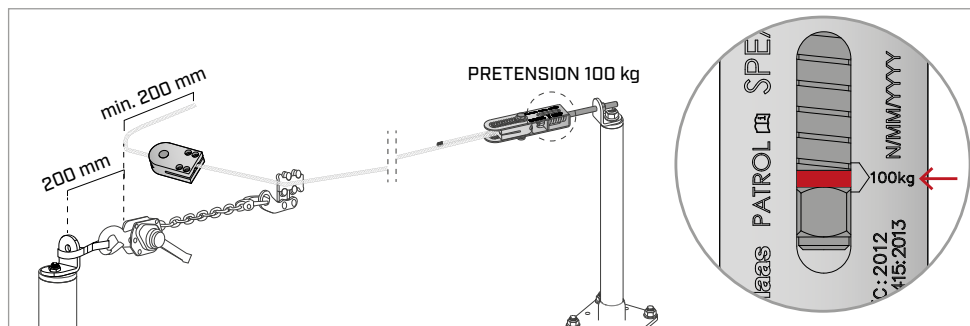


**LIFELINE INSTALLATION**  
**CABLE INSTALLATION**



# LIFELINE INSTALLATION

## SPEAR INSTALLATION













**ROTHO BLAAS SRL**

09-26

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