

**PRO C250V C250H**  
**SUN C250V C250H**

Installation sur le toit  
On-Roof Installation  
Installasjon på tak  
Instalação sobre telhado  
Installazione su tetto  
Door-tegel Installatie  
Aufdachmontage

**Standard Rail**



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# 1.0 Symboles Symbols Symboler Símbolos Simboli Symbolen Symbole

# Outils Tools Verktøy Ferramentas Tools Instrumenten Tools



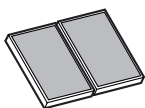
FR - Avertissement  
UK- Caution  
NO- OBS  
PT- Cuidado  
IT- Attenzione  
NE- Opgelet  
GE- Vorsicht



FR - Informations  
UK- Information  
NO- Informasjon  
PT- Informações  
IT- Informazione  
NE- Informatie  
GE- Information oder Hinweis



FR - 1 Capteur solaire  
UK- 1 Collector  
NO- 1 Kollektor  
PT- 1 Colector  
IT- 1 Collettore  
NE- 1 Collector  
GE- 1 Kollektor



FR - 2 Capteur solaire  
UK- 2 Collector  
NO- 2 Kollektor  
PT- 2 Colector  
IT- 2 Collettore  
NE- 2 Collector  
GE- 2 Kollektoren



FR - Numéro de page de référence  
UK- Page Reference Number  
NO- Sidereferanse  
PT- Número da página de consulta  
IT- Numero di riferimento della pagina  
NE- Referentienummer pagina  
GE- Seitenzahl für Referenz



FR - Acheter  
UK- Buy  
NO- Kjøp  
PT- Comprar  
IT- Comprare  
NE- Kopen  
GE- Kaufen



FR - Poids  
UK- Weight  
NO- Vekt  
PT- Peso  
IT- Peso  
NE- Gewicht  
GE- Gewicht



FR - Pression maximale  
UK- Maximum pressure  
NO- Maksimum trykk  
PT- Pressão máxima  
IT- Pressione massima  
NE- Maximum druk  
GE- Maximaldruck



FR - Mesure  
UK- Measure  
NO- Mål  
PT- Medida  
IT- Misura  
NE- Afmeting  
GE- Abmessung



FR - Tournevis  
UK- Screwdriver  
NO- Skrutrekker  
PT- Chave de fendas  
IT- Cacciavite  
NE- Schroevendraaier  
GE- Schraubendreher



FR - Clé de serrage (7mm/13mm/32mm)  
UK- Spanner Tight (7mm/13mm/32mm)  
NO- Fastnøkkel (7mm/13mm/32mm)  
PT- Aperto com chave de bocas (7mm/13mm/32mm)  
IT- Serrare con chiave opportuna (7mm/13mm/32mm)  
NE- Moersleutel (7mm/13mm/32mm)  
GE- Schlüsselweite (7mm/13mm/32mm)



FR - Marteau  
UK- Hammer  
NO- Hammer  
PT- Martelo  
IT- Martello  
NE- Hamer  
GE- Hammer



FR - Percer  
UK- Drill  
NO- Drill  
PT- Perfurar  
IT- Trapano  
NE- Boor  
GE- Bohren



FR - Mètre  
UK- Meter  
NO- Målebånd  
PT- Metro  
IT- Metro  
NE- Meter  
GE- Meter



FR - Broyeur portatif  
UK- Hand held grinder  
NO- Vinkelsliper  
PT- Radial  
IT- Radiale  
NE- Handbediende slijpmachine  
GE- Handschleifer

Santé et sécurité  
Health and safety  
HMS  
Saúde e segurança  
Salute e sicurezza  
Gezondheid en veiligheid  
Arbeitssicherheit



FR - Utilisez un casque de sécurité  
UK- Use safety helmet  
NO- Bruk hjelm  
PT- Use um capacete de segurança  
IT- Usare il casco di sicurezza  
NE- Gebruik een veiligheidshelm  
GE- Schutzhelm verwenden



FR - Utilisez des chaussures de sécurité  
UK- Use safety shoes  
NO- Bruk vernesko  
PT- Use sapatos de segurança  
IT- Usare calzature di sicurezza  
NE- Gebruik veiligheidsschoenen  
GE- Sicherheitsschuhe verwenden



FR - Utilisez un harnais de sécurité pour éviter les chutes.  
UK- Use safety harness for protection against falling.  
NO- Bruk fallsikringsutstyr  
PT- Use um arnés de segurança para evitar as quedas.  
IT- Usare cintura di sicurezza per proteggersi da cadute.  
NE- Gebruik een veiligheidsgordel voor bescherming tegen vallen.  
GE- Sicherheitsgurt zum Schutz vor Herabfallen verwenden.



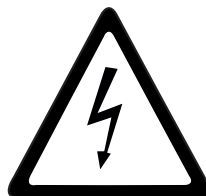
FR - Utilisez des gants de sécurité  
UK- Use safety gloves  
NO- Bruk beskyttelseshansker  
PT- Use luvas de protecção  
IT- Usare guanti di sicurezza Gebruik  
NE- veiligheidshandschoenen  
GE- Schutzhandschuhe verwenden



FR - Utilisez des lunettes de sécurité  
UK- Use safety goggles  
NO- Bruk beskyttelsesbriller  
PT- Use óculos de segurança  
IT- Usare occhiali di sicurezza  
NE- Gebruik een veiligheidsbril  
GE- Schutzbrille verwenden



FR - Incluez le capteur dans le système de protection de l'immeuble contre la foudre.  
UK- Include the collector in the lightning protection device of the building.  
NO- Inkluder solfangeren i byggets lynavleder.  
PT- Inclua o colector no sistema de protecção contra os raios do imóvel.  
IT- Includere il collettore nel dispositivo di protezione contro i fulmini dell'edificio.  
NE- Bouw de collector in in de bliksemaffleider van het gebouw.  
GE- Kollektor in den Blitzschutz des Gebäudes integrieren.



FR - Risque de foudre par temps orageux.  
UK- Danger of lightning in stormy weather.  
NO- Fare for lynnedslag  
PT- Perigo de raios em dias de trovoadas.  
IT- Pericolo di fulmini durante i giorni di tempesta.  
NE- Bliksemgevaar bij stormweer.  
GE- Es besteht Blitzgefahr bei Sturmweather.



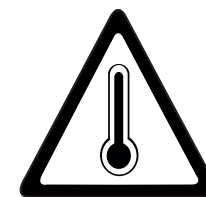
FR - Charge lourde  
UK- Heavy load  
NO- Tung vekt  
PT- Carga pesada  
IT- Carico pesante  
NE- Zware lading  
GE- Schwerlast



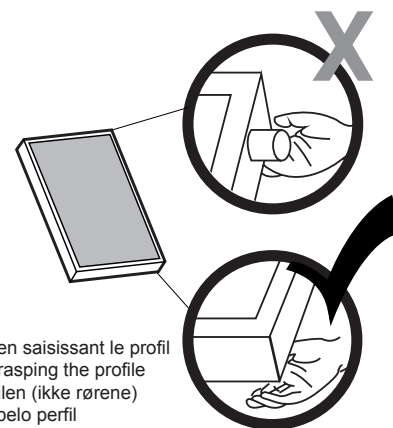
FR - Attention risque de dérapage  
UK- Beware of tripping  
NO- Snublefare  
PT- Atenção risco de tropeçar  
IT- Attenzione, rischio di inciampo  
NE- Gevaar van struikelen  
Vorsicht  
GE- Stolpergefahr



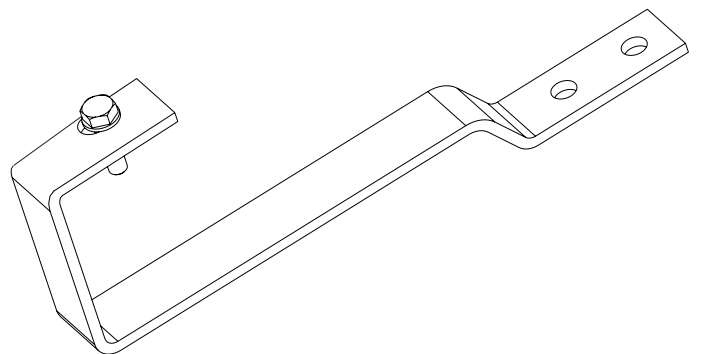
FR - Risque de surfaces glissantes  
UK- Beware of slippery surfaces  
NO- Glatt underlag  
PT- Atenção risco de superfícies escorregadias  
IT- Rischio per suolo scivoloso  
NE- Risico van gladde oppervlakken  
GE- Vorsicht Rutschgefahr



FR - Risque de températures élevées  
UK- Beware of high temperatures  
NO- Forsiktig-høy temperatur  
PT- Perigo de altas temperaturas  
IT- Pericolo per alte temperature  
NE- Gevaar van hoge temperaturen  
GE- Vorsicht hohe Temperaturen



FR - Manipuler le capteur en saisissant le profil  
UK- Handle collector by grasping the profile  
NO- Løft kollektoren i profilen (ikke rørene)  
PT- Manipular o colector pelo perfil  
IT- Manipolare il collettore attraverso il profilo  
NE- Neem de collector vast aan het profiel  
GE- Kollektor am Profil anfassen

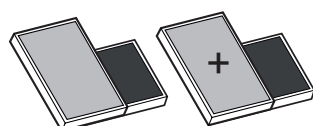
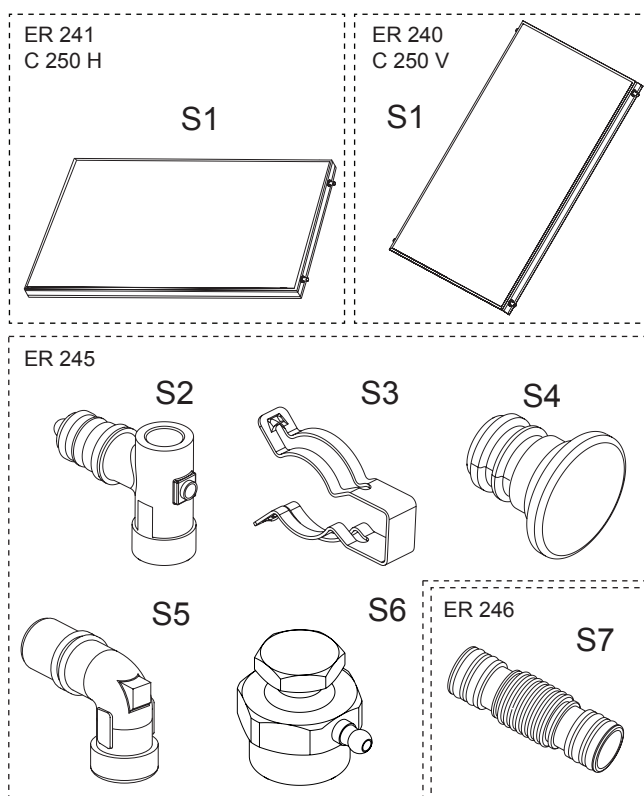


# På tak montasje

## Takstein

EG 315/316

Composants et contenu kit hydraulique  
 Hydraulic kit contents and components  
 Innhold og komponenter i kolliene  
 Componentes e conteúdo kit hidráulico  
 Componenti e contenuto kit parte idraulica  
 Kit hydraulische inhoud en onderdelen Inhalt  
 und Komponenten des Hydraulik-Sets



	ER 245		ER 246	
	C250V	C250H	C250V	C250H
S2	1	1	-	-
S3	4	4	-	-
S4	2	2	-	-
S5	1	1	-	-
S6	1	1	-	-
S7	-	-	2	2

- FR
- S1- Capteur
  - S2- Raccord en té G3/4
  - S3- Bague
  - S4- Capuchon d'extrémité
  - S5- Pièce coudée G3/4
  - S6- Décharge d'air manuelle
  - S7- Élément de raccord

- UK
- S1- Collector
  - S2- Tee piece for air vent G3/4
  - S3- Clip
  - S4- End Cap
  - S5- Elbow G3/4
  - S6- Manual air vent
  - S7- Joining Piece

- NO
- S1- Kollektor
  - S2- T-stykke for lufteventil G3/4
  - S3- Klips
  - S4- Lokk
  - S5- Bend G3/4
  - S6- Manuell lufteventil
  - S7- Koblingsdel

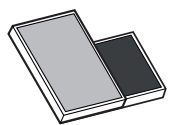
- PT
- S1- Colector
  - S2- Peça em "T" G3/4
  - S3- Mola
  - S4- Tampão
  - S5- Cotovelo G3/4
  - S6- Ventilação de ar manual
  - S7- Peça de junção

- IT
- S1- Collettore
  - S2- Elemento a "T" G3/4
  - S3- Graffa
  - S4- Tapón
  - S5- Raccordo a gomito G3/4
  - S6- Sfiato manuale
  - S7- Elemento di giunzione



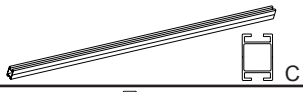
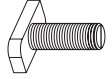
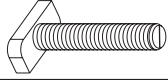

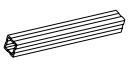
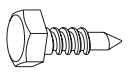

- NE
- S1- Collector
  - S2- T-stuk G3/4
  - S3- Klem
  - S4- Eindkap
  - S5- Bochtstuk G3/4
  - S6- Handmatige luchtopening
  - S7- Verbindingsstuk

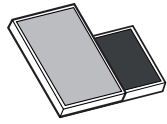
- GE
- S1- Kollektor
  - S2- T-Stück G3/4
  - S3- Klemme
  - S4- Endstopfen
  - S5- Rohrbogen G3/4
  - S6- Handentlüfter
  - S7- Verbindungsstück

**3.0** Contenu et composants du kit Kit  
 Contents and Components  
 Innhold og komponenter i kolliene  
 Conteúdo e componentes do Kit  
 Contenuto e componenti dei kit  
 Inhoud en onderdelen van de kit  
 Inhalt und Komponenten des Sets



ER 242 243  
 C250V C250H

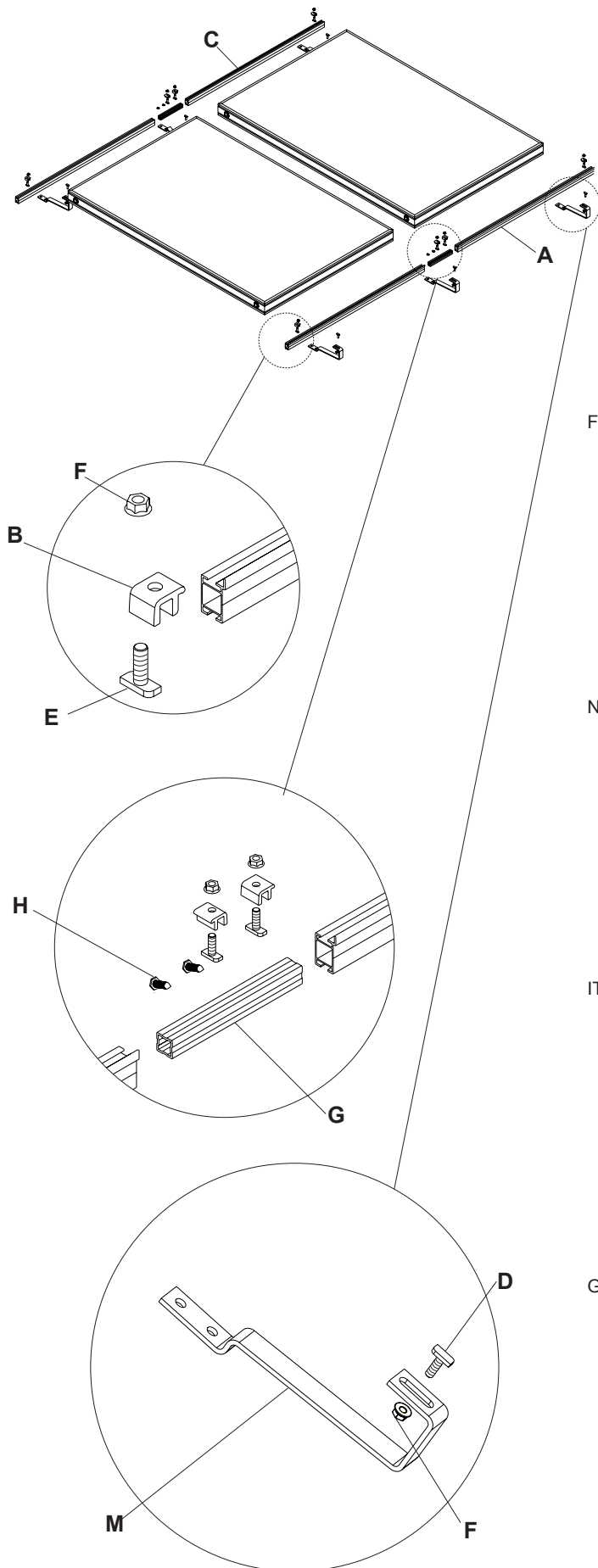
	1	1
	4	4
	1	1
	4	4
	4	4
	8	8
	2	2
	4	4
	1	1



EG 315 316

	4	6
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FR  
 A- Rail inférieur  
 B- Traverse de bout  
 C- Rail supérieur  
 D- Boulons en "T" M8x20  
 E- Boulons en "T" M8x30  
 F- Écrous M8  
 G- Rail de fixation  
 H- Vis auto perforante  
 J- Instructions  
 M- Crochet inférieur

UK  
 A- Lower Rail  
 B- End clamp  
 C- Upper Rail  
 D- T-Bolts M8x20  
 E- T-Bolts M8x30  
 F- M8 Nuts  
 G- End clamp  
 H- Self drilling screw  
 J- Instructions  
 M- Lower Bracket

NO  
 A- Nedre skinne  
 B- Endeklemme  
 C- Øvre skinne  
 D- Skrue "T" M8x20 T  
 E- Skrue "T" M8x30  
 F- Mutter M8  
 G- Endeklemme  
 H- Selvborende skrue  
 J- Instruksjoner  
 M- Nedre brakett

PT  
 A- Guia inferior  
 B- Grampo fecho  
 C- Guia superior  
 D- Parafusos "T" M8x20  
 E- Parafusos "T" M8x30  
 F- Porcas M8  
 G- Guia de fixação  
 H- Parafuso autoperforante  
 J- Instruções  
 M- Clip inferior

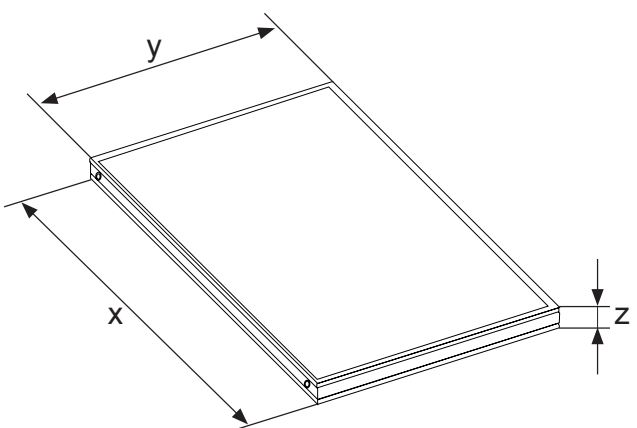
IT  
 A- Profilo inferiore  
 B- Morsetto terminale  
 C- Profilo superiore  
 D- TBulloni M8x20  
 E- TBulloni M8x30  
 F- Dadi M8  
 G- Fissaggio profili  
 H- Vite autofilettante  
 J- Istruzioni  
 M- Staffa inferiore

NE  
 A- Onderste rail  
 B- Eindklem  
 C- Bovenste rail  
 D- T-bouten M8x20  
 E- T-bouten M8x30  
 F- M8 Moeren  
 G- Railbevestiging  
 H- Zelftappende schroef  
 J- Instructies  
 M- Onderarm

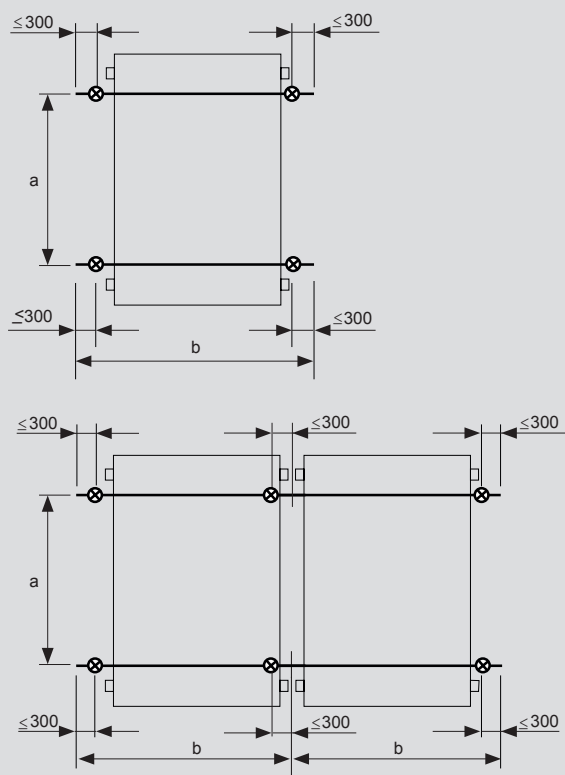
GE  
 A- Untere Schiene  
 B- Abschlussklemmung  
 C- Obere Schiene  
 D- T-Bolzen M8x20  
 E- T-Bolzen M8x30  
 F- M8 Muttern  
 G- Schienenbefestigung  
 H- Bohrschraube  
 J- Anleitung  
 M- Untere Halterung

**4.0 Poids et dimensions**  
 Weight and measurements  
 Vekt og dimensjoner  
 Peso e dimensões  
 Peso e misure  
 Gewicht en afmetingen  
 Gewicht und Abmessungen

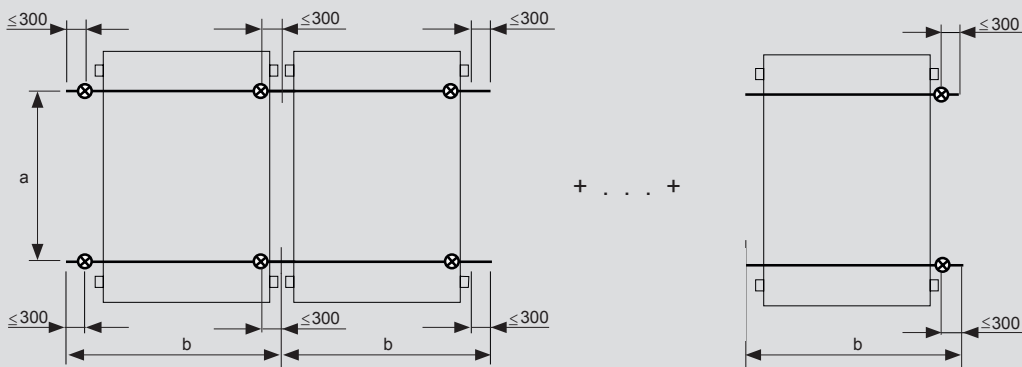
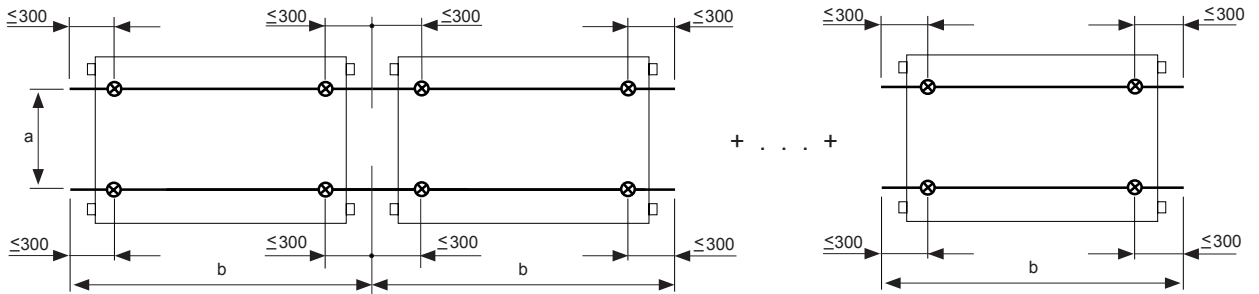
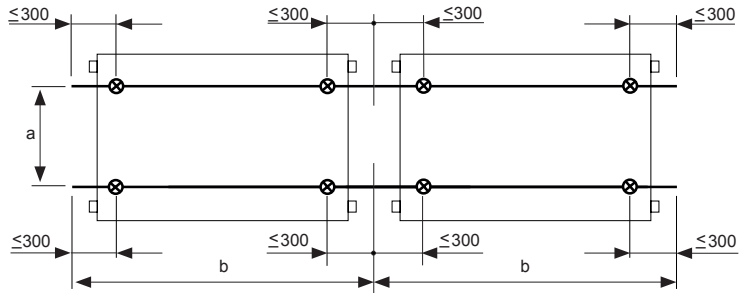
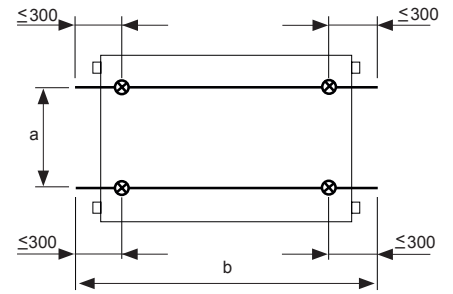
**5.0 Position de fixation**  
 Fixation position  
 Festeosisjon  
 Posição de fixação  
 Posizione di fissaggio  
 Plaats bevestiging  
 Befestigungsposition



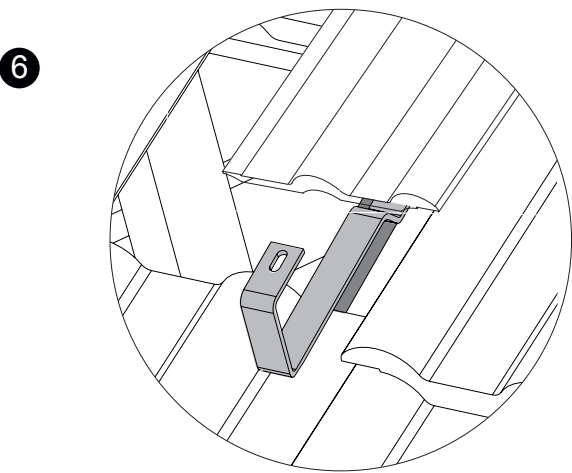
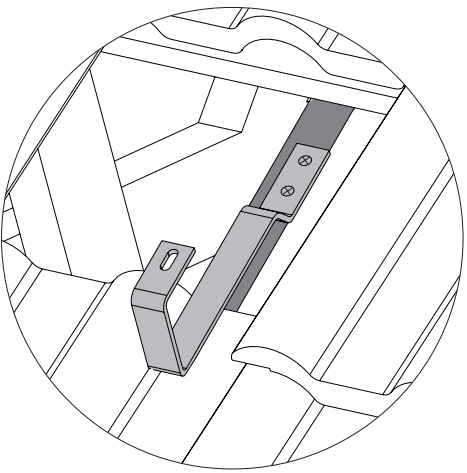
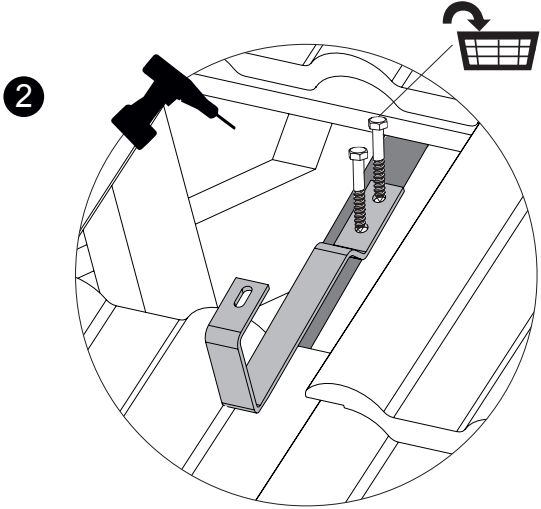
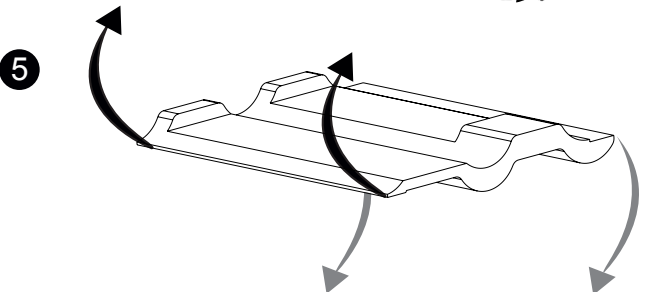
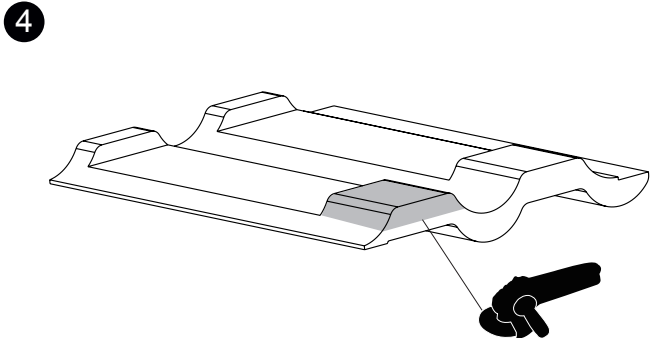
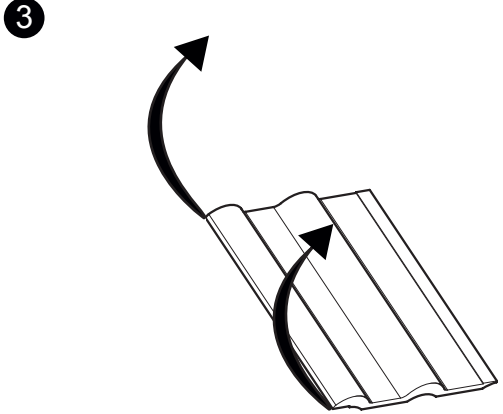
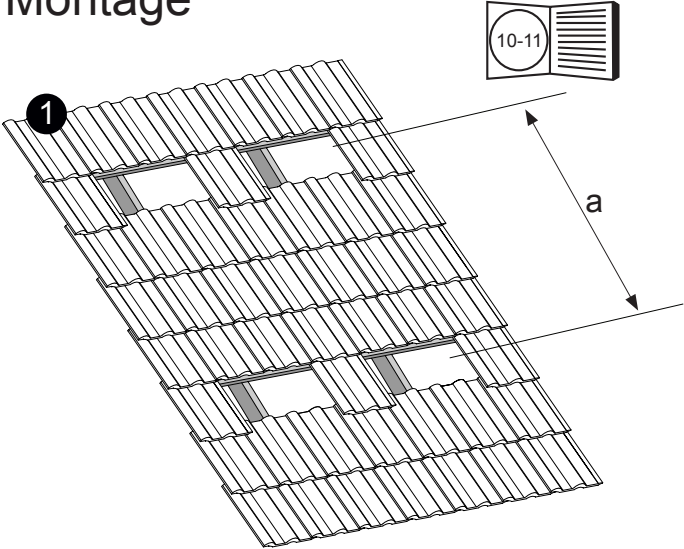
	(kg)	(bar)	X(mm)	y (mm)	Z (mm)
C250V	48	10	2187	1147	87
C250H	49	10	1147	2187	87

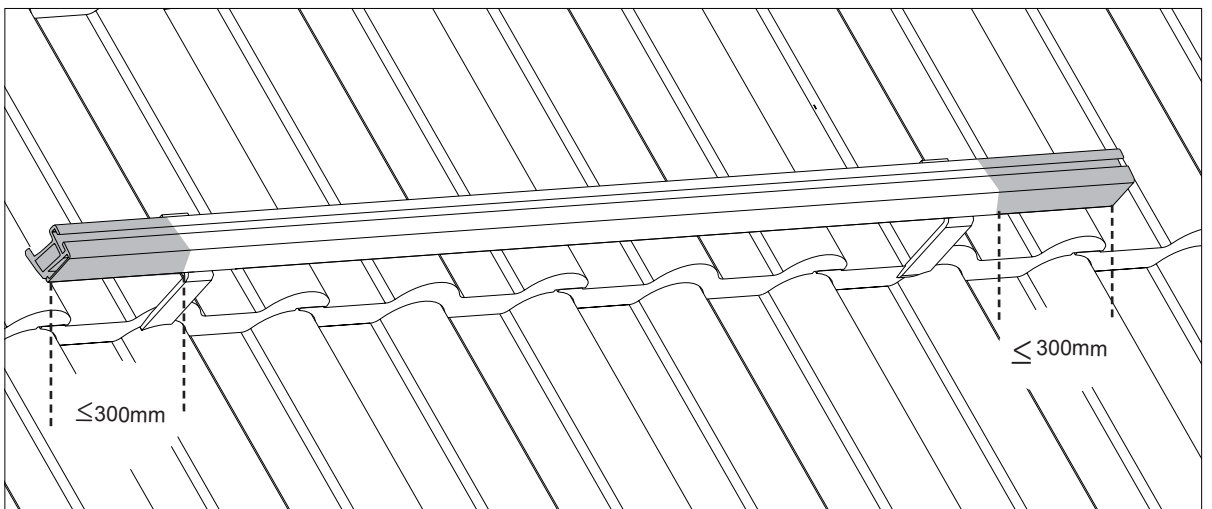
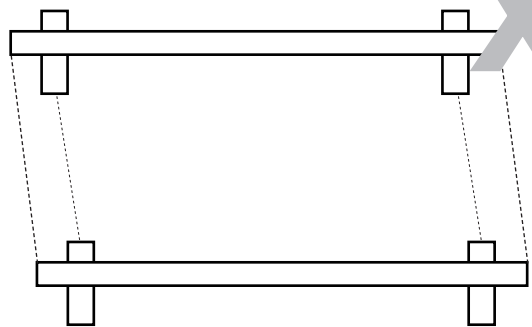
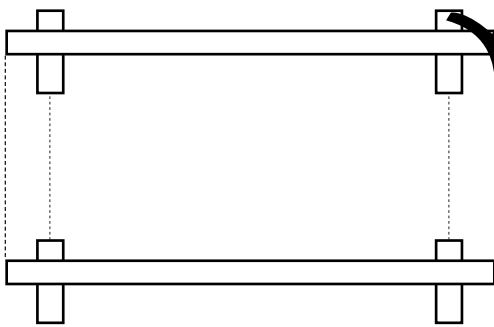
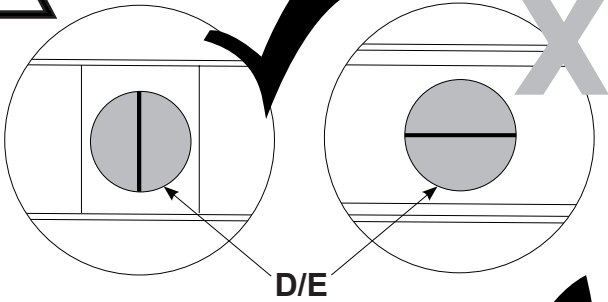
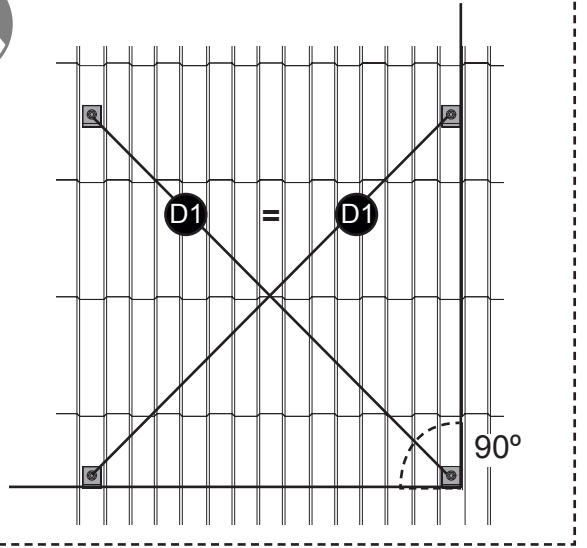
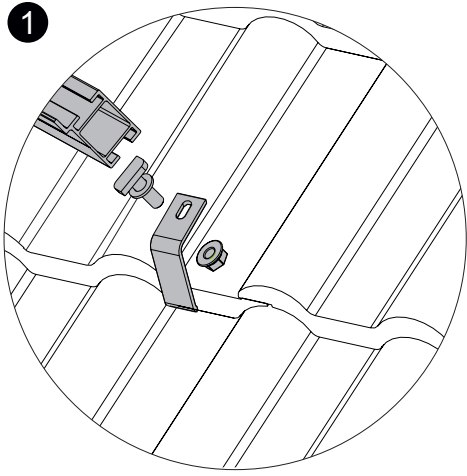
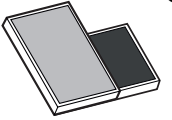


	a (mm)	b (mm)
C250V	1750-1950	1197
C250H	700-900	2237

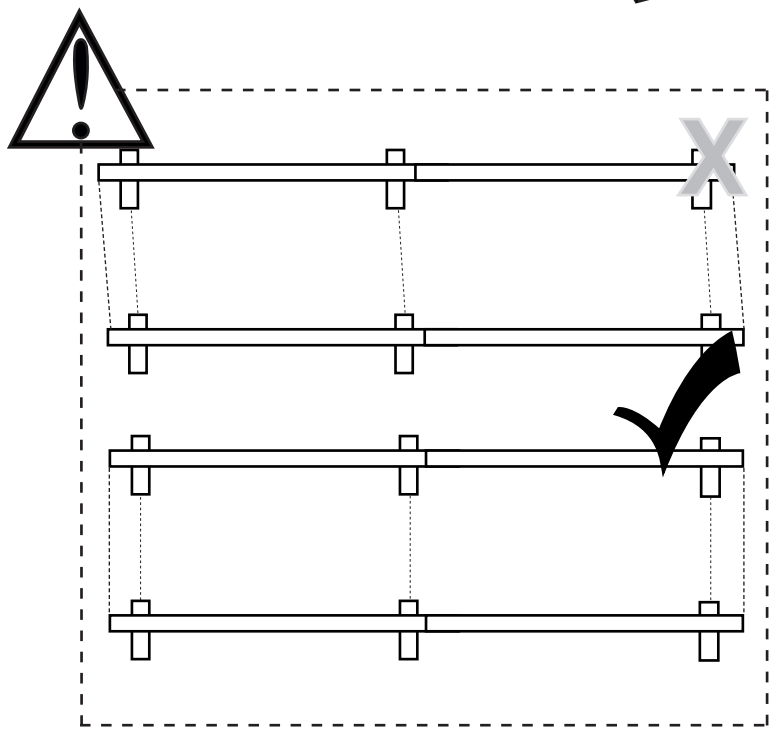
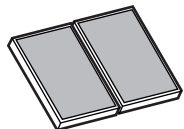


6.0 Installation  
 Installation  
 Installasjon  
 Instalação  
 Installazione  
 Installatie  
 Montage

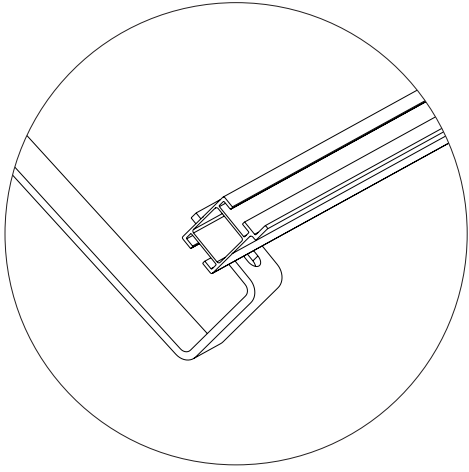
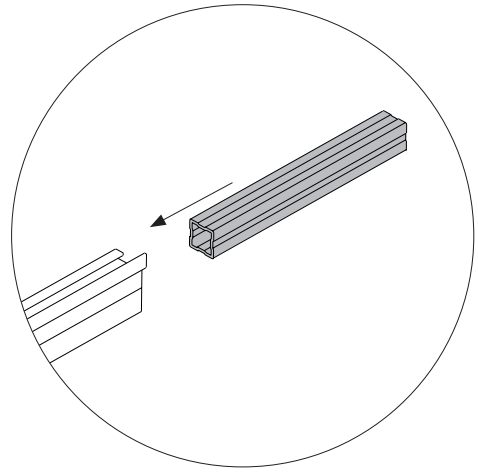




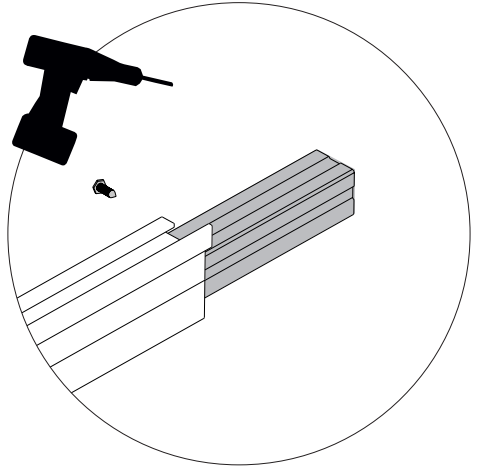
**6.0** Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage



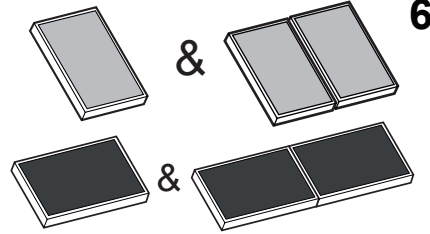
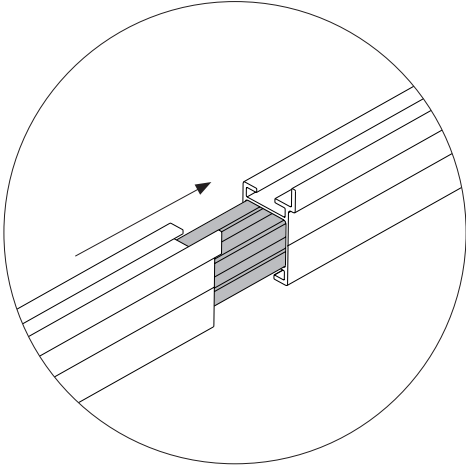
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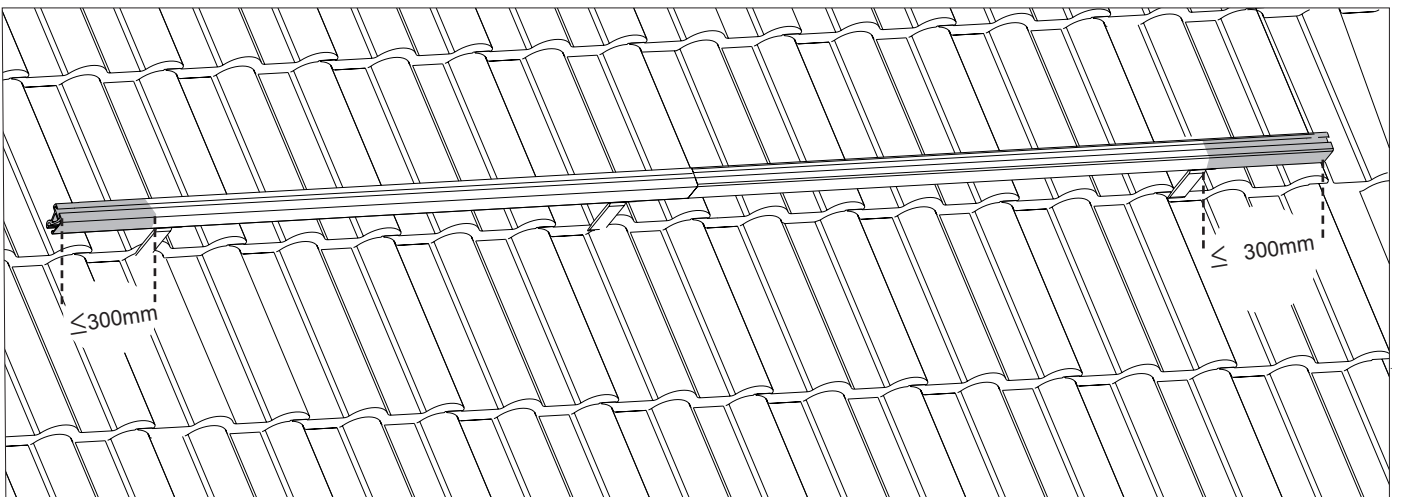
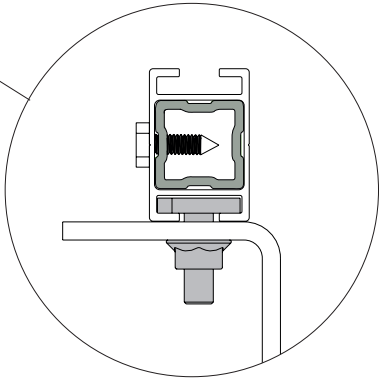
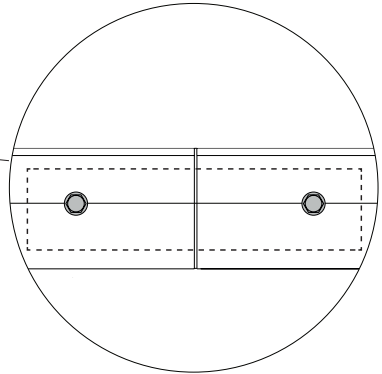
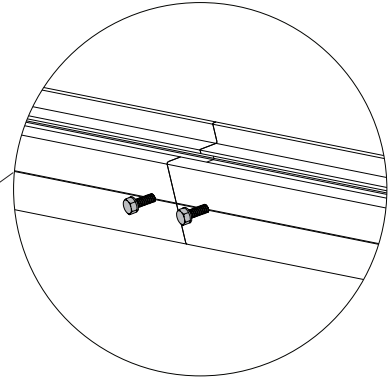
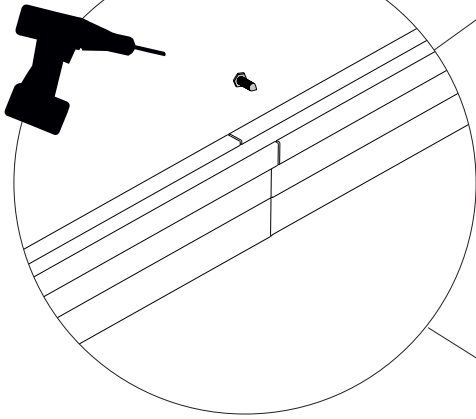
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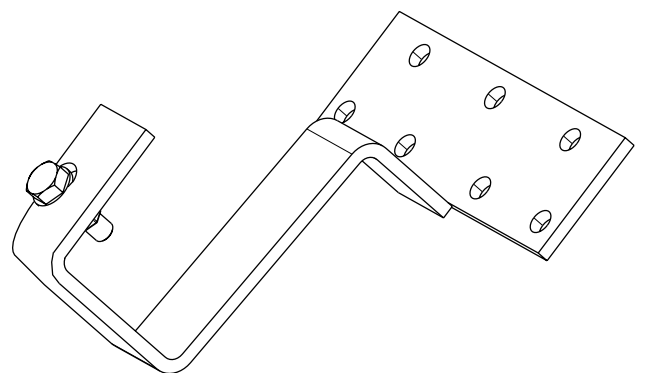


4



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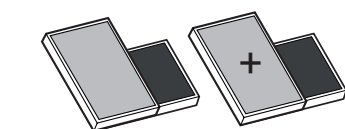
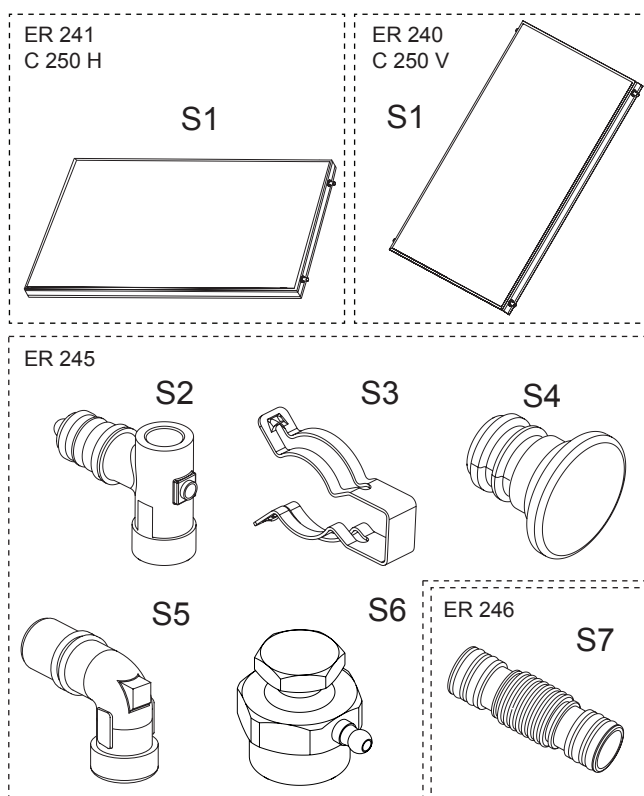
# På tak montasje

## Stålplater

EG 313/314



Composants et contenu kit hydraulique  
 Hydraulic kit contents and components  
 Innhold og komponenter i kolliene  
 Componentes e conteúdo kit hidráulico  
 Componenti e contenuto kit parte idraulica  
 Kit hydraulische inhoud en onderdelen Inhalt  
 und Komponenten des Hydraulik-Sets



	ER 245		ER 246	
	C250V	C250H	C250V	C250H
S2	1	1	-	-
S3	4	4	-	-
S4	2	2	-	-
S5	1	1	-	-
S6	1	1	-	-
S7	-	-	2	2

FR  
 S1- Capteur  
 S2- Raccord en té G3/4  
 S3- Bague  
 S4- Capuchon d'extrémité  
 S5- Pièce coudée G3/4  
 S6- Décharge d'air manuelle  
 S7- Élément de raccord

UK  
 S1- Collector  
 S2- Tee piece for air vent G3/4  
 S3- Clip  
 S4- End Cap  
 S5- Elbow G3/4  
 S6- Manual air vent  
 S7- Joining Piece

NO  
 S1- Kollektor  
 S2- T-stykke for lufteventil G3/4  
 S3- Klips  
 S4- Lokk  
 S5- Bend G3/4  
 S6- Manuell lufteventil  
 S7- Koblingsdel

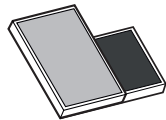
PT  
 S1- Colector  
 S2- Peça em "T" G3/4  
 S3- Mola  
 S4- Tampão  
 S5- Cotovelo G3/4  
 S6- Ventilação de ar manual  
 S7- Peça de junção

IT  
 S1- Collettore  
 S2- Elemento a "T" G3/4  
 S3- Graffa  
 S4- Tapón  
 S5- Raccordo a gomito G3/4  
 S6- Sfiato manuale  
 S7- Elemento di giunzione



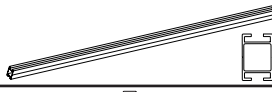
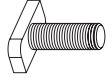
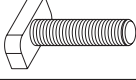

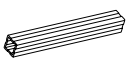
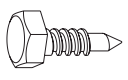

NE  
 S1- Collector  
 S2- T-stuk G3/4  
 S3- Klem  
 S4- Eindkap  
 S5- Bochtstuk G3/4  
 S6- Handmatige luchtopening  
 S7- Verbindingsstuk

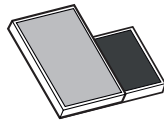
GE  
 S1- Kollektor  
 S2- T-Stück G3/4  
 S3- Klemme  
 S4- Endstopfen  
 S5- Rohrbogen G3/4  
 S6- Handentlüfter  
 S7- Verbindungsstück

**3.0** Contenu et composants du kit Kit  
 Contents and Components  
 Innhold og komponenter i kolliene  
 Contenuto e componenti dei kit  
 Inhoud en onderdelen van de kit  
 Inhalt und Komponenten des Sets



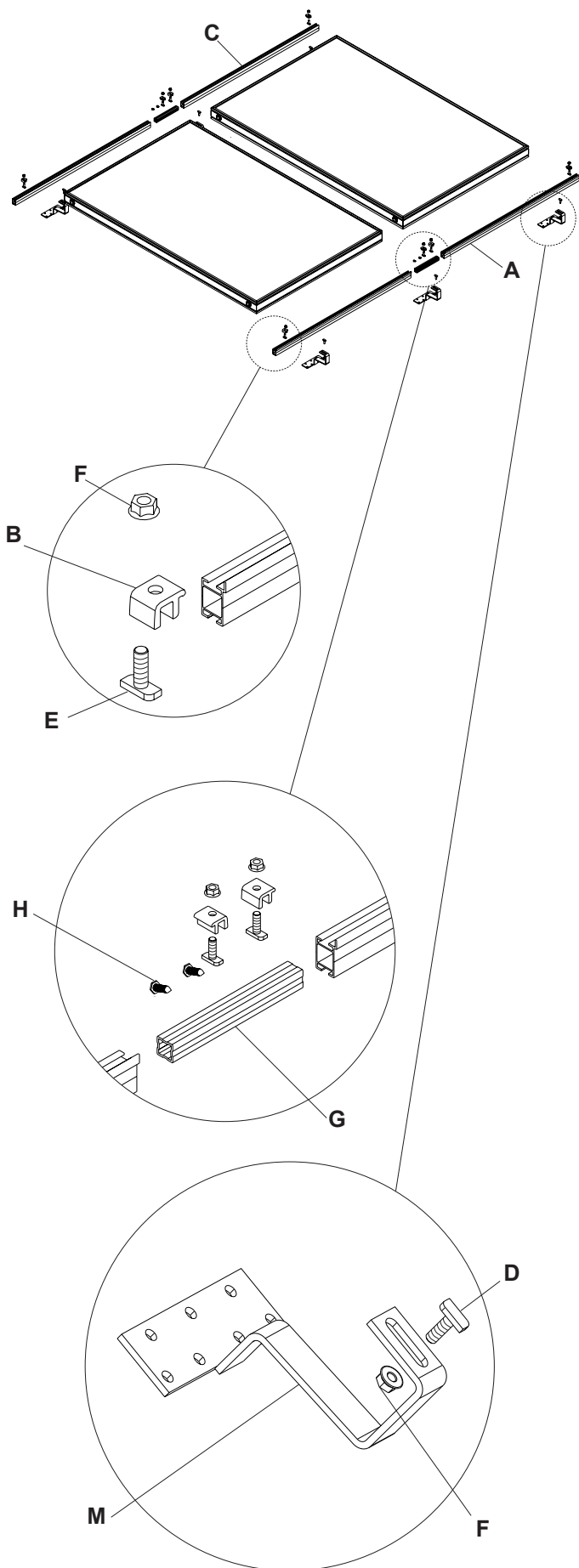
ER 242 243  
 C250V C250H

 A	1	1
 B	4	4
 C	1	1
 D	4	4
 E	4	4
 F	8	8
 G	2	2
 H	4	4
 J	1	1



EG 313 314

 M	4	6
--	---	---



FR

- A- Rail inférieur
- B- Traverse de bout
- C- Rail supérieur
- D- Boulons en "T" M8x20
- E- Boulons en "T" M8x30
- F- Écrous M8
- G- Rail de fixation
- H- Vis auto perforante
- J- Instructions
- M- Crochet inférieur

UK

- A- Lower Rail
- B- End clamp
- C- Upper Rail
- D- T-Bolts M8x20
- E- T-Bolts M8x30
- F- M8 Nuts
- G- End clamp
- H- Self drilling screw
- J- Instructions
- M- Lower Bracket

NO

- A- Nedre skinne
- B- Endeklemme
- C- Øvre skinne
- D- Skrue "T" M8x20
- E- Skrue "T" M8x30
- F- Mutter M8
- G- Endeklemme
- H- Selvborende skrue
- J- Instruksjoner
- M- Nedre brakett

PT

- A- Guia inferior
- B- Grampo fecho
- C- Guia superior
- D- Parafusos "T" M8x20
- E- Parafusos "T" M8x30
- F- Porcas M8
- G- Guia de fixação
- H- Parafuso autoperforante
- J- Instruções
- M- Clip inferior

IT

- A- Profilo inferiore
- B- Morsetto terminale
- C- Profilo superiore
- D- TBulloni M8x20
- E- TBulloni M8x30
- F- Dadi M8
- G- Fissaggio profili
- H- Vite autofilettante
- J- Istruzioni
- M- Staffa inferiore

NE

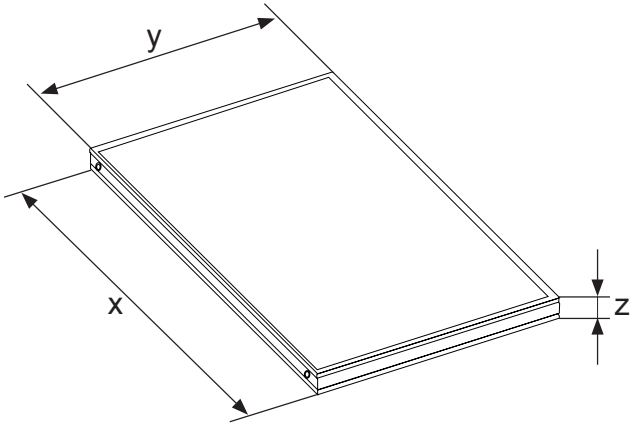
- A- Onderste rail
- B- Eindklem
- C- Bovenste rail
- D- T-bouten M8x20
- E- T-bouten M8x30
- F- M8 Moeren
- G- Railbevestiging
- H- Zelftappende schroef
- J- Instructies
- M- Onderarm

GE

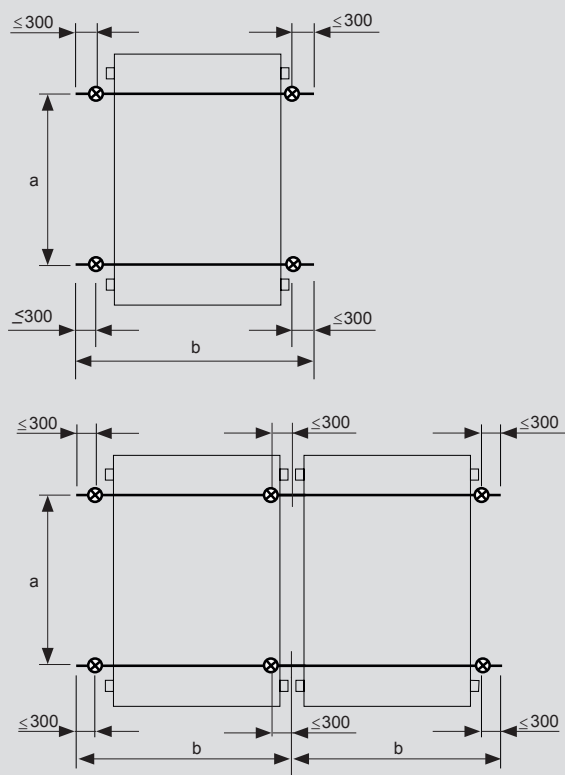
- A- Untere Schiene
- B- Abschlussklemmung
- C- Obere Schiene
- D- T-Bolzen M8x20
- E- T-Bolzen M8x30
- F- M8 Muttern
- G- Schienenbefestigung
- H- Bohrschraube
- J- Anleitung
- M- Untere Halterung

**4.0 Poids et dimensions**  
 Weight and measurements  
 Vekt og dimensjoner  
 Peso e dimensões  
 Peso e misure  
 Gewicht en afmetingen  
 Gewicht und Abmessungen

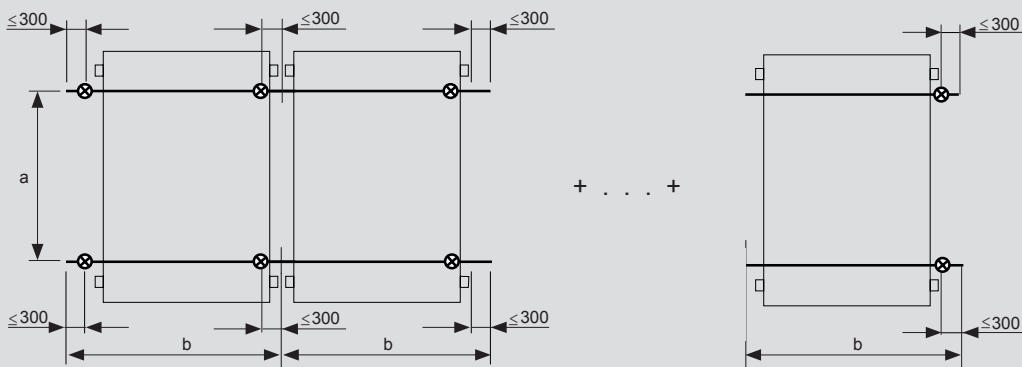
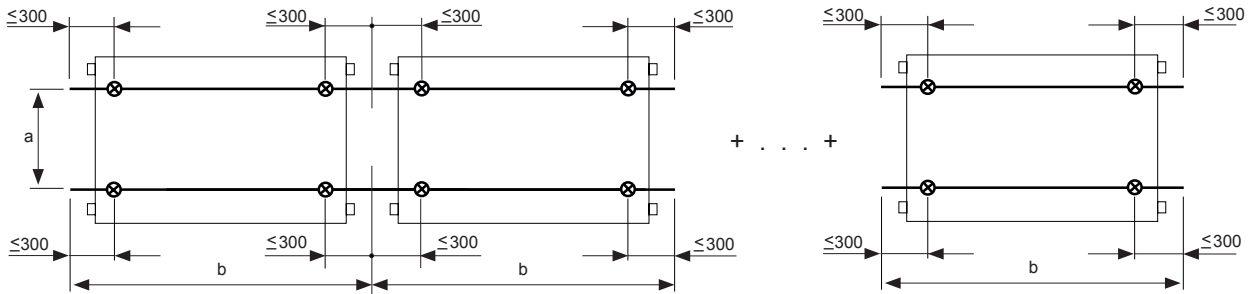
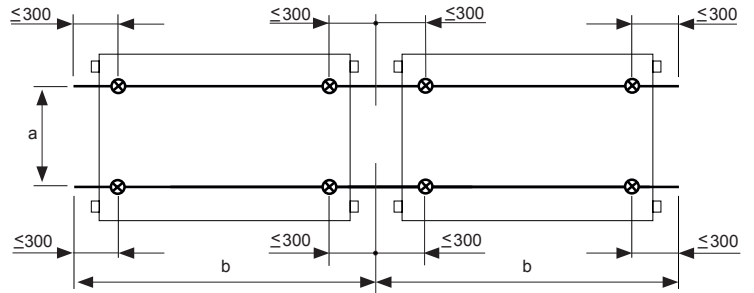
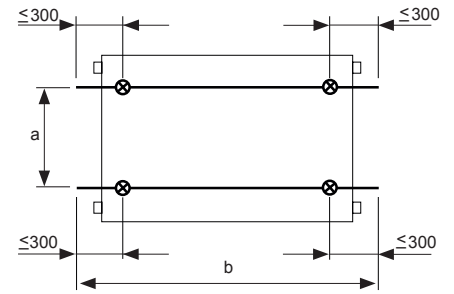
**5.0 Position de fixation**  
 Fixation position  
 Festepløisjjon  
 Posição de fixação  
 Posizione di fissaggio  
 Plaats bevestiging  
 Befestigungsposition



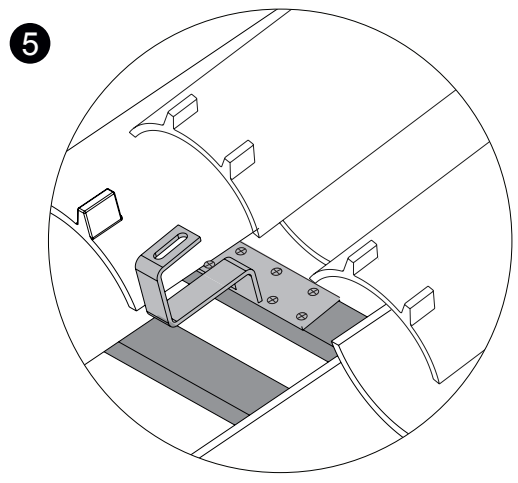
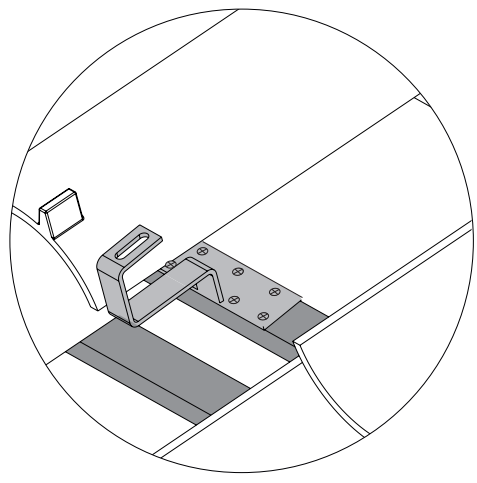
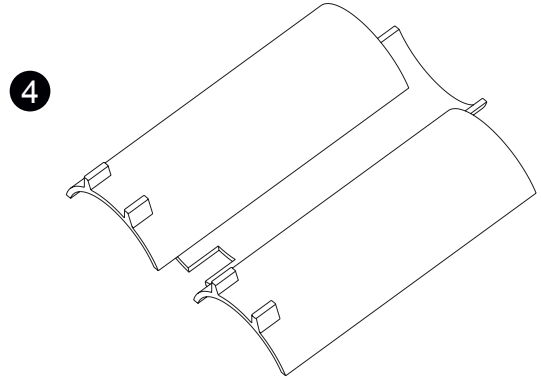
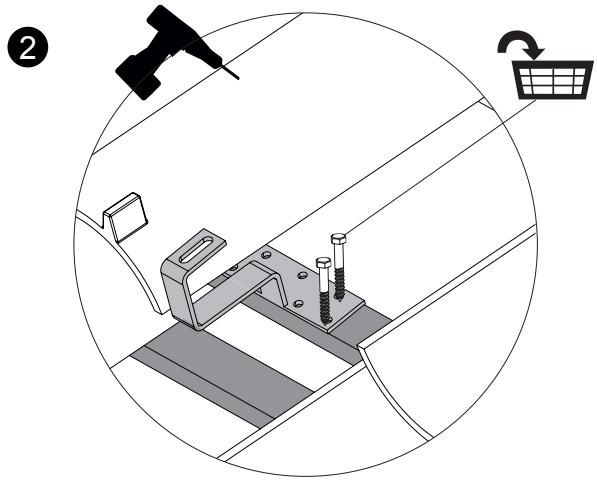
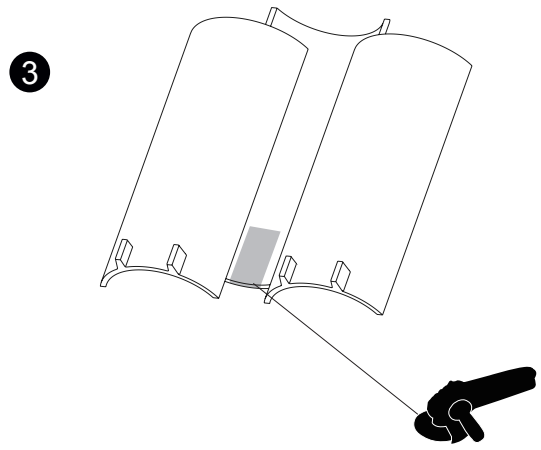
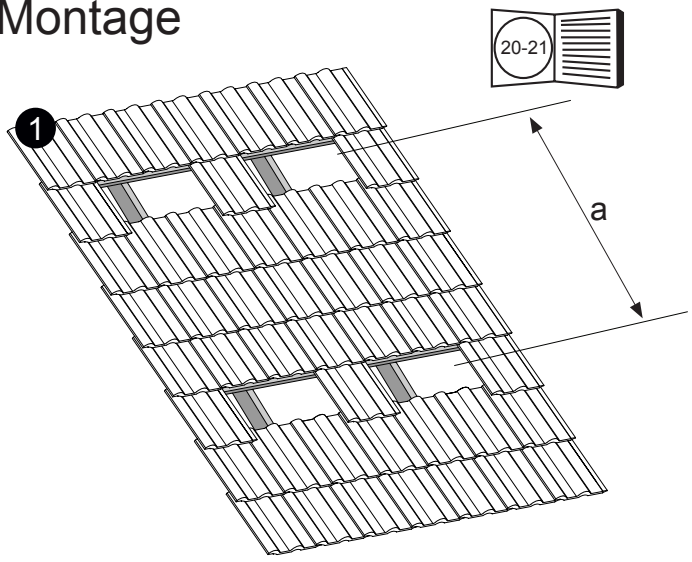
	(kg)	(bar)	X(mm)	y (mm)	Z (mm)
C250V	48	10	2187	1147	87
C250H	49	10	1147	2187	87

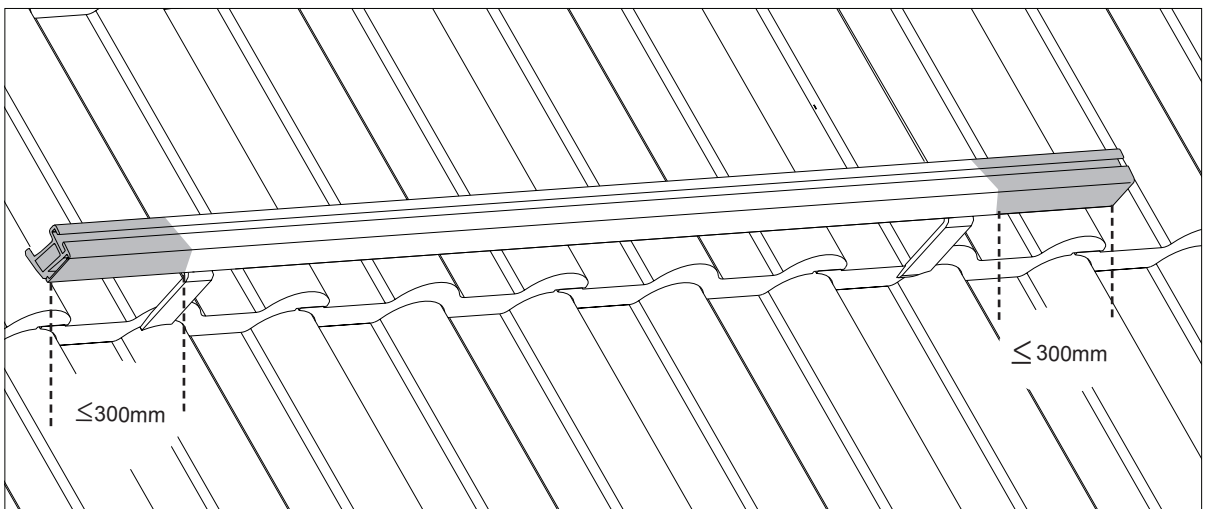
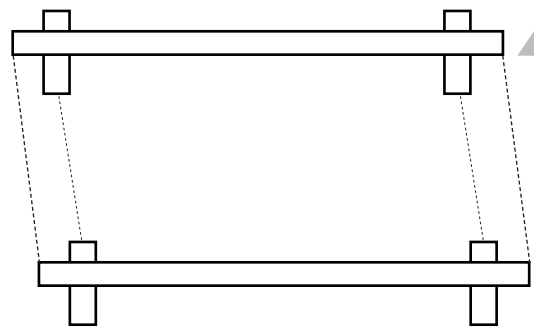
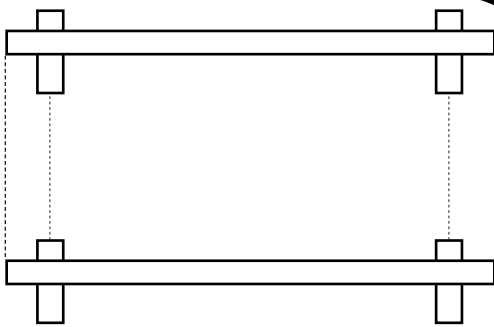
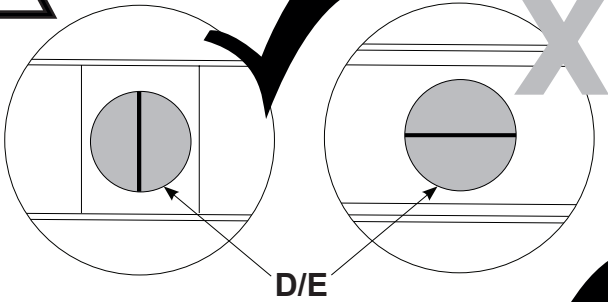
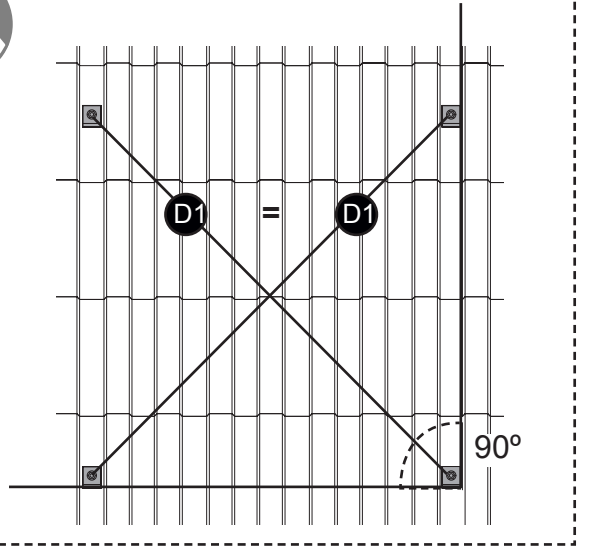
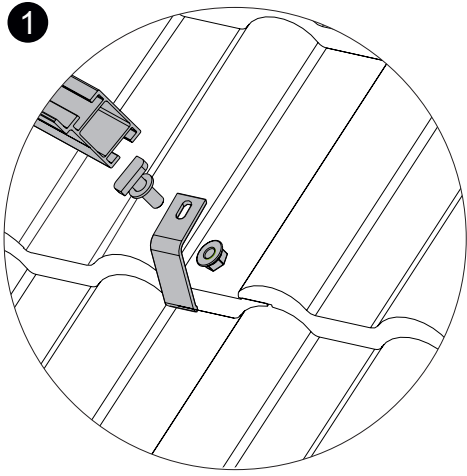
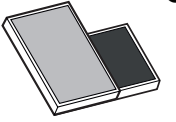


	a (mm)	b (mm)
C250V	1750-1950	1197
C250H	700-900	2237

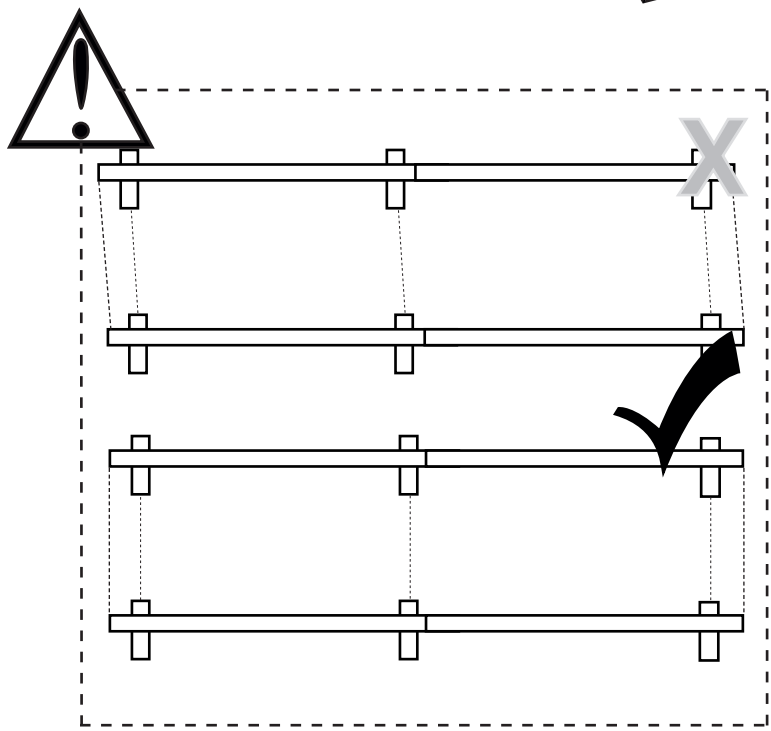
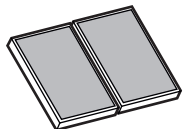


6.0 Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage

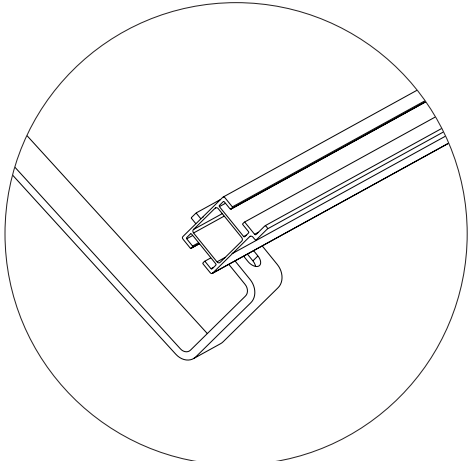
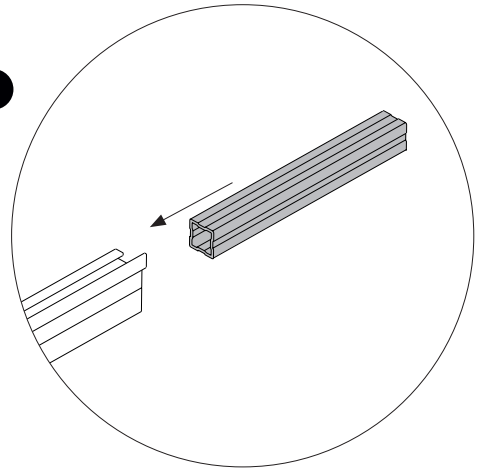




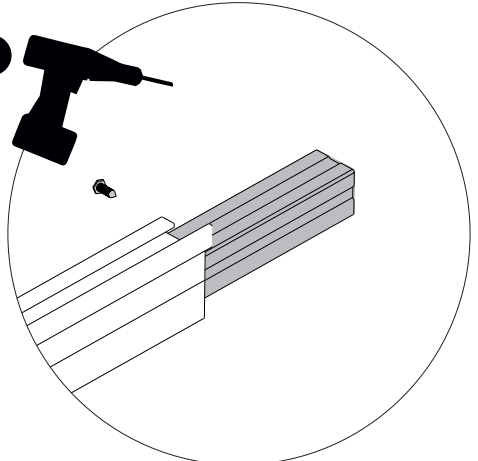
6.0 Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage



2

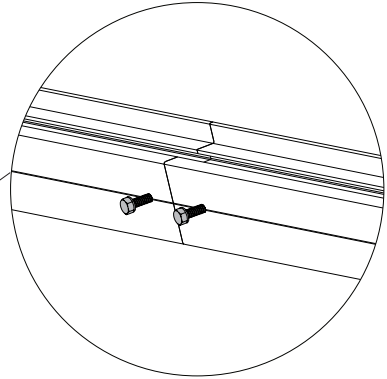
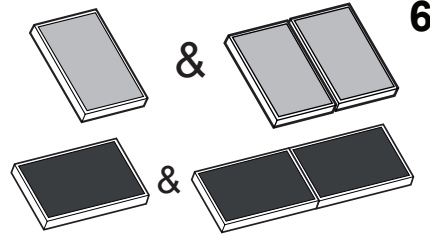
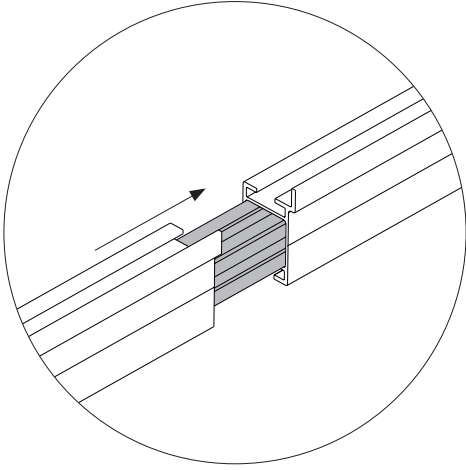


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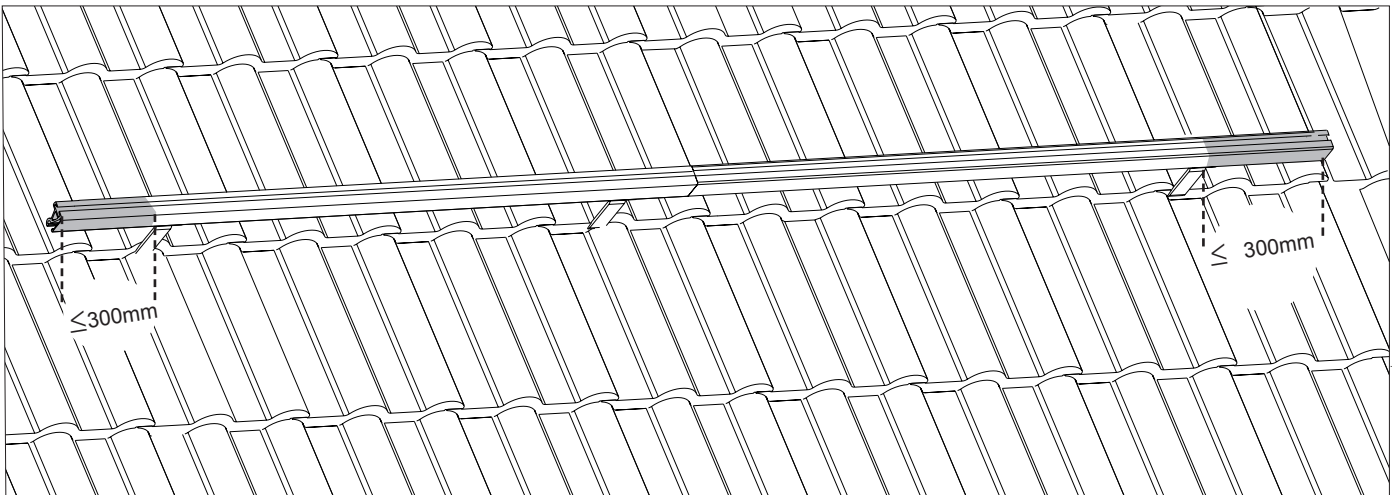
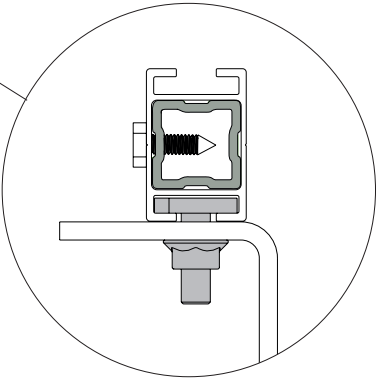
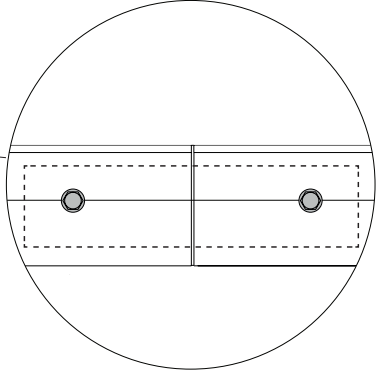
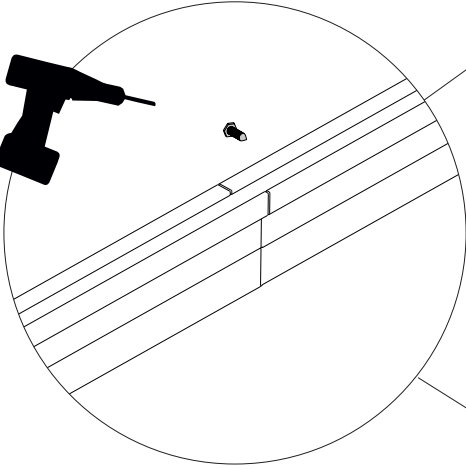


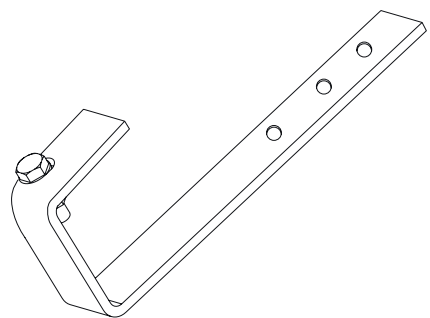


4



5



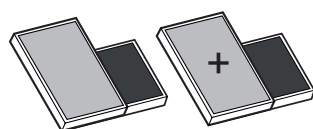
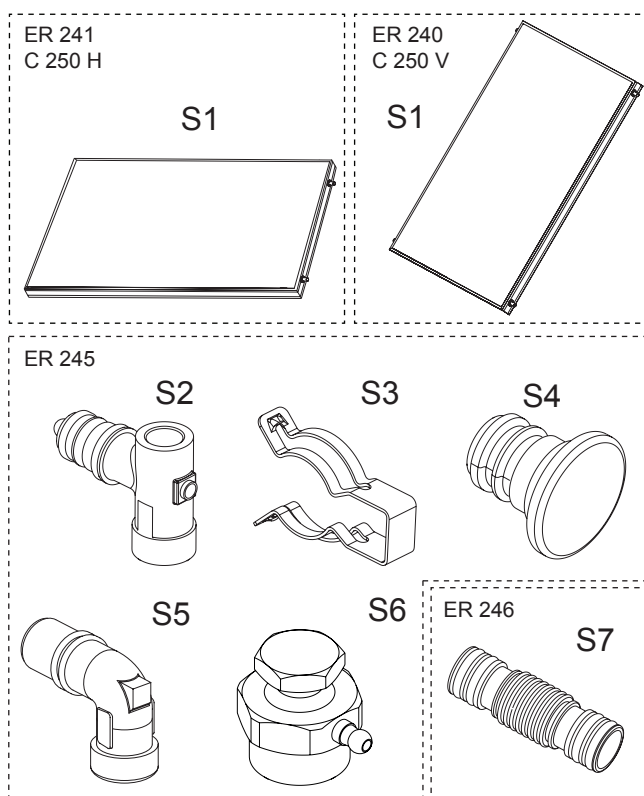


# På tak montasje

## Skifer

EG 319/320

Composants et contenu kit hydraulique  
 Hydraulic kit contents and components  
 Innhold og komponenter i kolliene  
 Componentes e conteúdo kit hidráulico  
 Componenti e contenuto kit parte idraulica  
 Kit hydraulische inhoud en onderdelen  
 Inhalt und Komponenten des Hydraulik-Sets



	ER 245		ER 246	
	C250V	C250H	C250V	C250H
S2	1	1	-	-
S3	4	4	-	-
S4	2	2	-	-
S5	1	1	-	-
S6	1	1	-	-
S7	-	-	2	2

- FR  
 S1- Capteur  
 S2- Raccord en té G3/4  
 S3- Bague  
 S4- Capuchon d'extrémité  
 S5- Pièce coudée G3/4  
 S6- Décharge d'air manuelle  
 S7- Élément de raccord

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 S1- Collector  
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 S3- Clip  
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 S5- Elbow G3/4  
 S6- Manual air vent  
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 S4- Lokk  
 S5- Bend G3/4  
 S6- Manuell lufteventil  
 S7- Koblingsdel

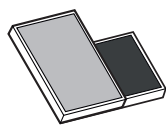
- PT  
 S1- Colector  
 S2- Peça em "T" G3/4  
 S3- Mola  
 S4- Tampão  
 S5- Cotovelo G3/4  
 S6- Ventilação de ar manual  
 S7- Peça de junção

- IT  
 S1- Collettore  
 S2- Elemento a "T" G3/4  
 S3- Graffa  
 S4- Tapón  
 S5- Raccordo a gomito G3/4  
 S6- Sfiato manuale  
 S7- Elemento di giunzione

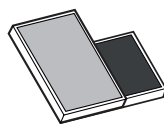
- NE  
 S1- Collector  
 S2- T-stuk G3/4  
 S3- Klem  
 S4- Eindkap  
 S5- Bochtstuk G3/4  
 S6- Handmatige luchtopening  
 S7- Verbindingsstuk

- GE  
 S1- Kollektor  
 S2- T-Stück G3/4  
 S3- Klemme  
 S4- Endstopfen  
 S5- Rohrbogen G3/4  
 S6- Handentlüfter  
 S7- Verbindungsstück



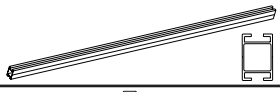
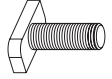
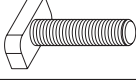

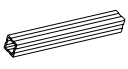
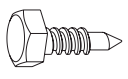

**3.0** Contenu et composants du kit Kit  
 Contents and Components  
 Innhold og komponenter i kolliene  
 Conteúdo e componentes do Kit  
 Contenuto e componenti dei kit  
 Inhoud en onderdelen van de kit  
 Inhalt und Komponenten des Sets



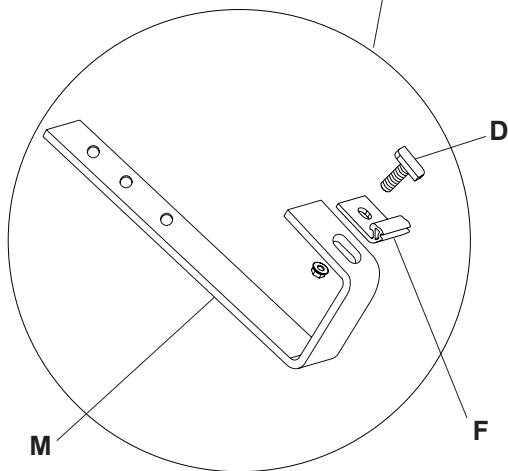
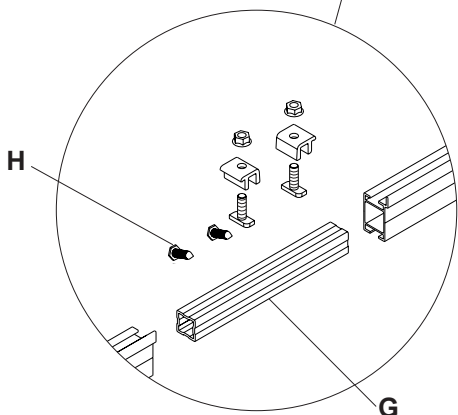
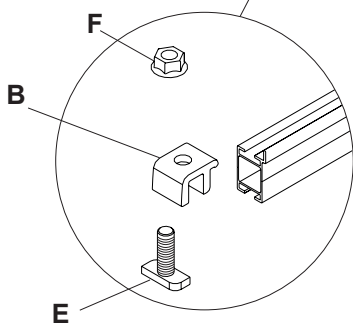
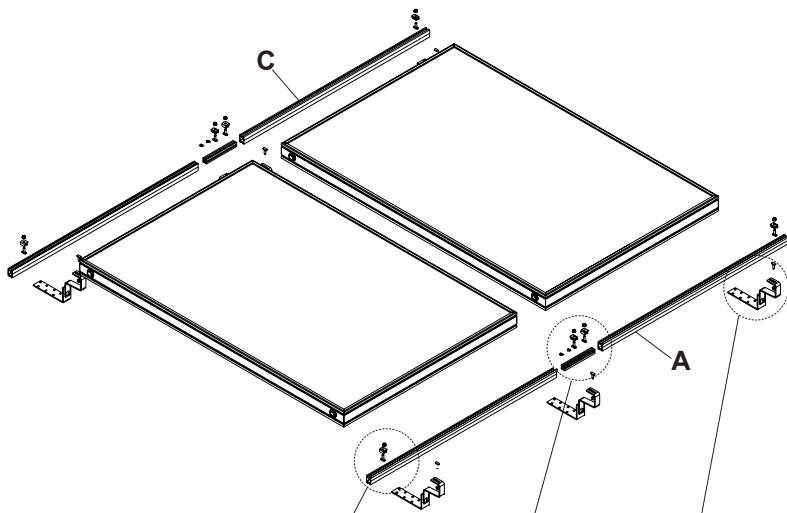
ER 242 243  
 C250V C250H



EG 319 320

	A	1	1
	B	4	4
	C	1	1
	D	4	4
	E	4	4
	F	8	8
	G	2	2
	H	4	4
	J	1	1

	M	4	6
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FR  
 A- Rail inférieur  
 B- Traverse de bout  
 C- Rail supérieur  
 D- Boulons en "T" M8x20  
 E- Boulons en "T" M8x30  
 F- Écrous M8  
 G- Rail de fixation  
 H- Vis auto perforante  
 J- Instructions  
 M- Crochet inférieur

UK  
 A- Lower Rail  
 B- End clamp  
 C- Upper Rail  
 D- T-Bolts M8x20  
 E- T-Bolts M8x30  
 F- M8 Nuts  
 G- End clamp  
 H- Self drilling screw  
 J- Instructions  
 M- Lower Bracket

NO  
 A- Nedre skinne  
 B- Endeklemme  
 C- Øvre skinne  
 D- Skrue "T" M8x20  
 E- Skrue "T" M8x30  
 F- Mutter M8  
 G- Endeklemme  
 H- Selvborende skrue  
 J- Instruksjoner  
 M- Nedre brakett

PT  
 A- Guia inferior  
 B- Grampo fecho  
 C- Guia superior  
 D- Parafusos "T" M8x20  
 E- Parafusos "T" M8x30  
 F- Porcas M8  
 G- Guia de fixação  
 H- Parafuso auto perforante  
 J- Instruções  
 M- Clip inferior

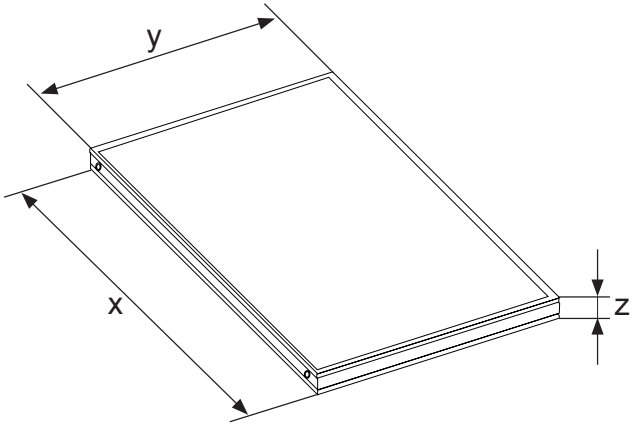
IT  
 A- Profilo inferiore  
 B- Morsetto terminale  
 C- Profilo superiore  
 D- TBulloni M8x20  
 E- TBulloni M8x30  
 F- Dadi M8  
 G- Fissaggio profili  
 H- Vite autofilettante  
 J- Istruzioni  
 M- Staffa inferiore

NE  
 A- Onderste rail  
 B- Eindklem  
 C- Bovenste rail  
 D- T-bouten M8x20  
 E- T-bouten M8x30  
 F- M8 Moeren  
 G- Railbevestiging  
 H- Zelftappende schroef  
 J- Instructies  
 M- Onderarm

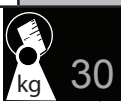
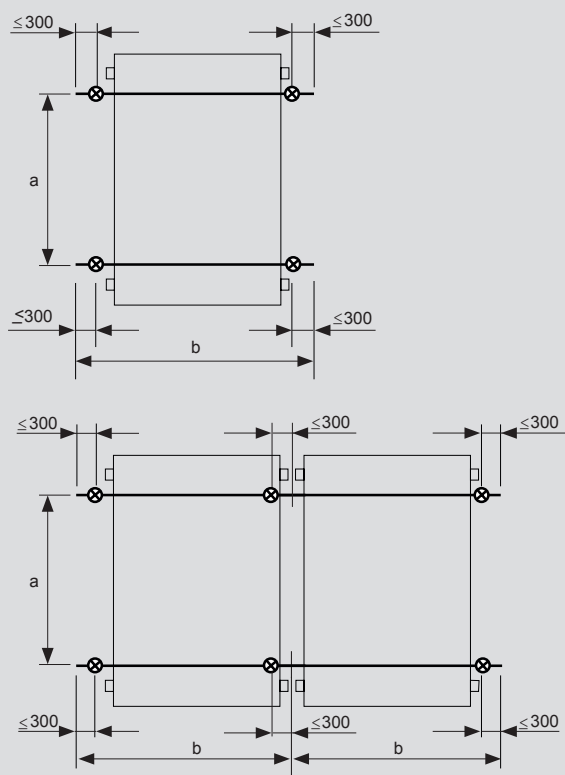
GE  
 A- Untere Schiene  
 B- Abschlussklemmung  
 C- Obere Schiene  
 D- T-Bolzen M8x20  
 E- T-Bolzen M8x30  
 F- M8 Muttern  
 G- Schienenbefestigung  
 H- Bohrschraube  
 J- Anleitung  
 M- Untere Halterung

**4.0 Poids et dimensions**  
 Weight and measurements  
 Vekt og dimensjoner  
 Peso e dimensões  
 Peso e misure  
 Gewicht en afmetingen  
 Gewicht und Abmessungen

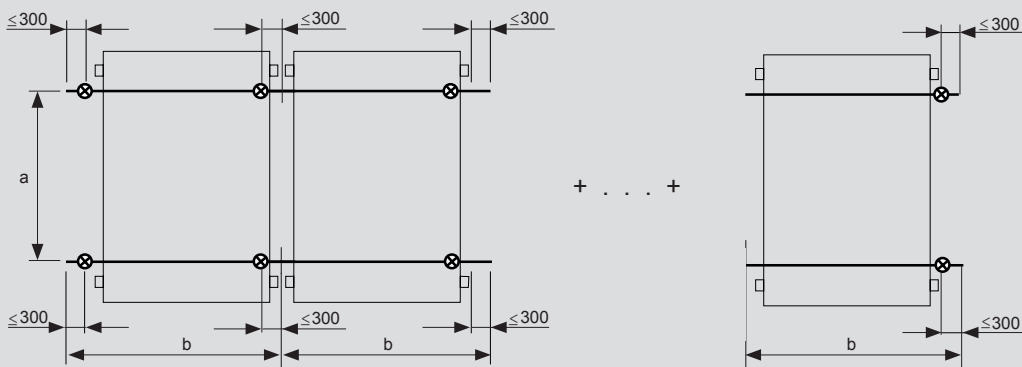
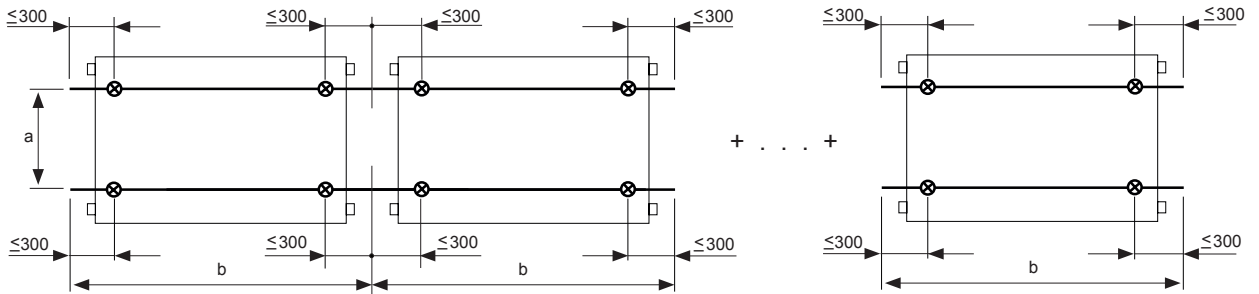
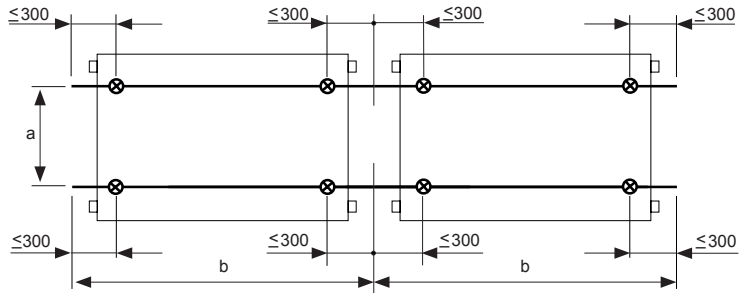
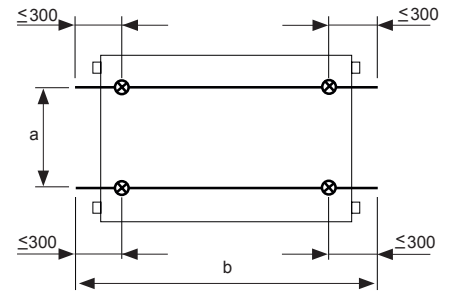
**5.0 Position de fixation**  
 Fixation position  
 Festeosisjon  
 Posição de fixação  
 Posizione di fissaggio  
 Plaats bevestiging  
 Befestigungsposition



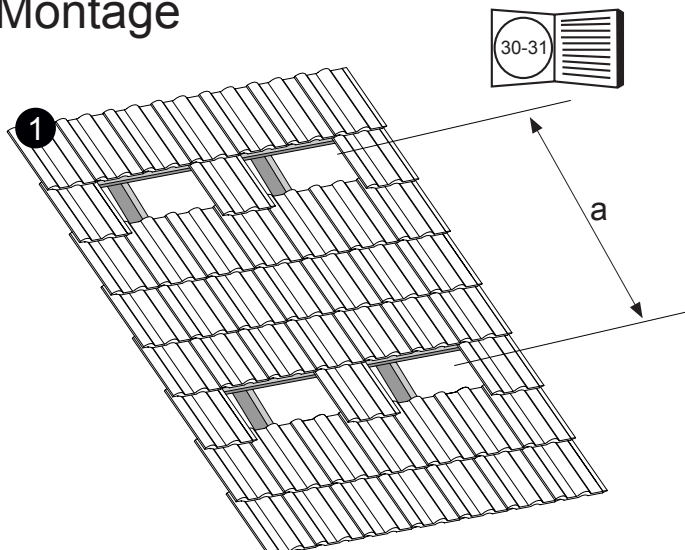
	(kg)	(bar)	X(mm)	Y(mm)	Z(mm)
C250V	48	10	2187	1147	87
C250H	49	10	1147	2187	87



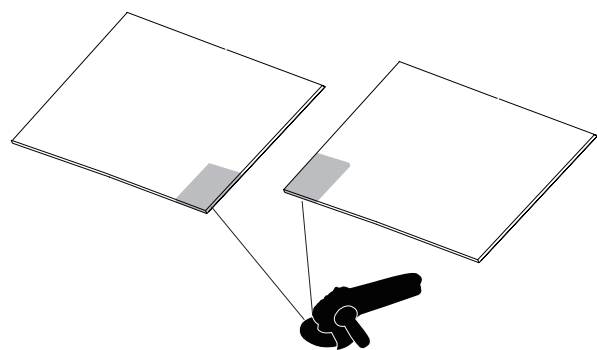
	a (mm)	b (mm)
C250V	1750-1950	1197
C250H	700-900	2237



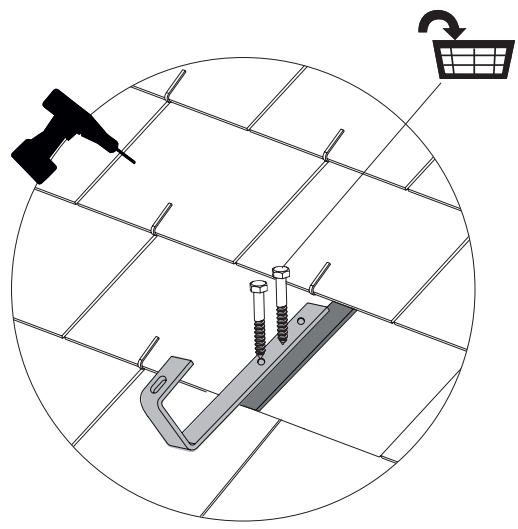
**6.0** Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage



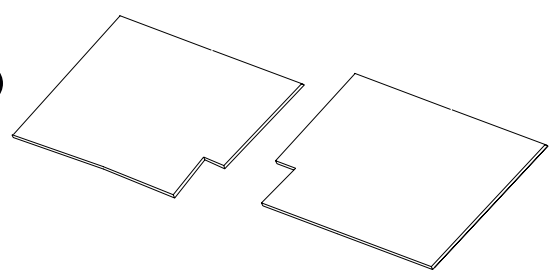
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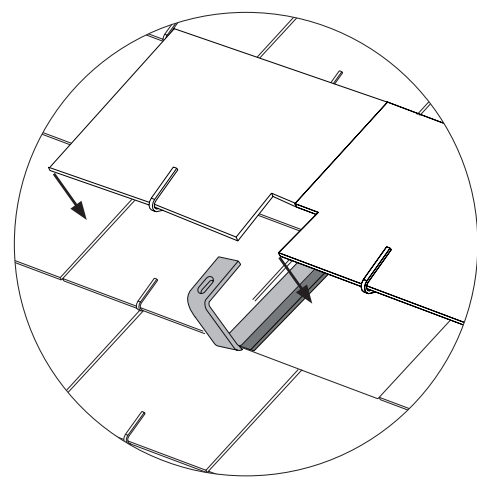
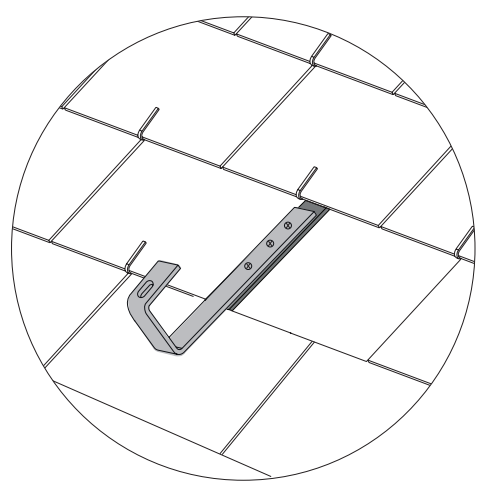
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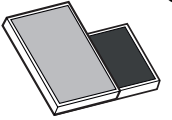
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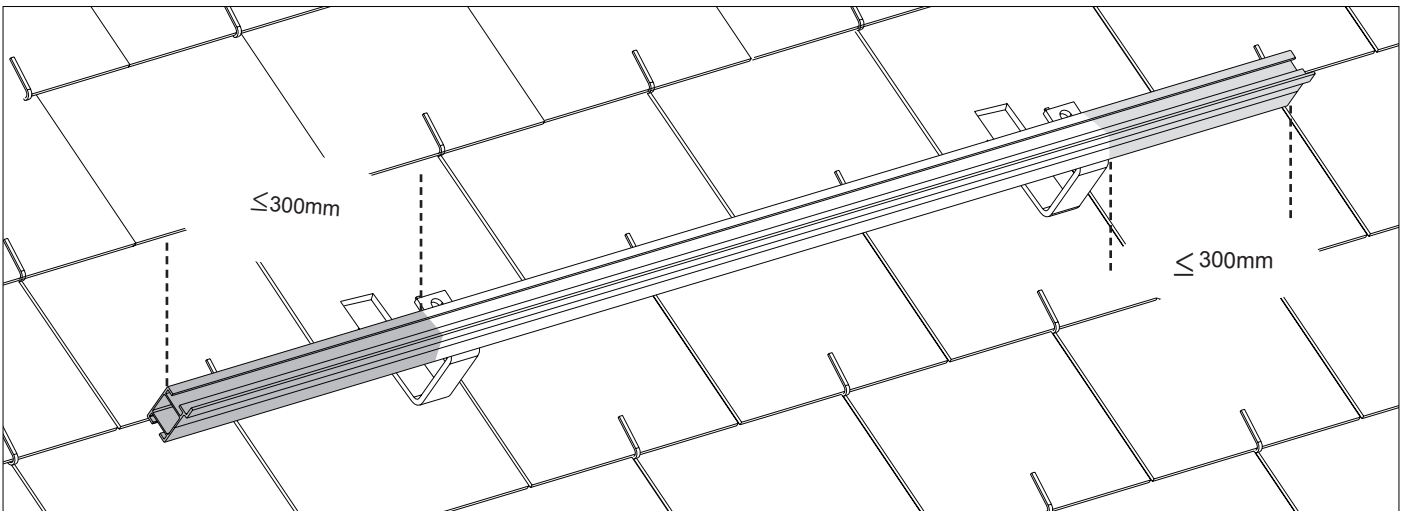
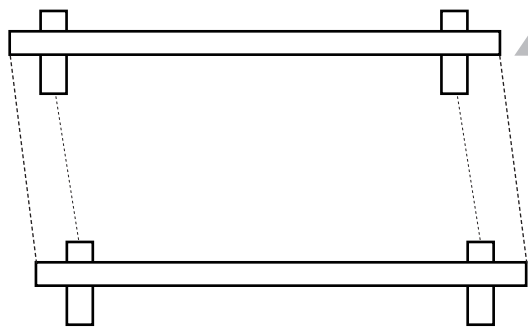
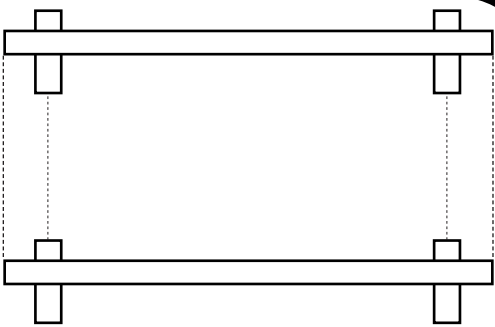
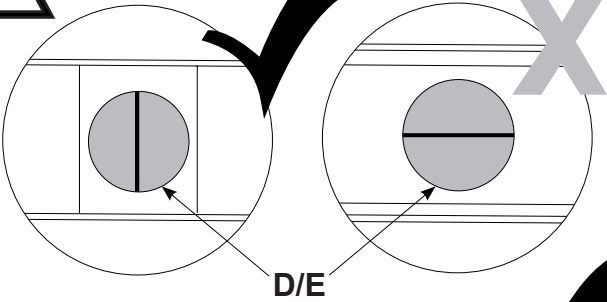
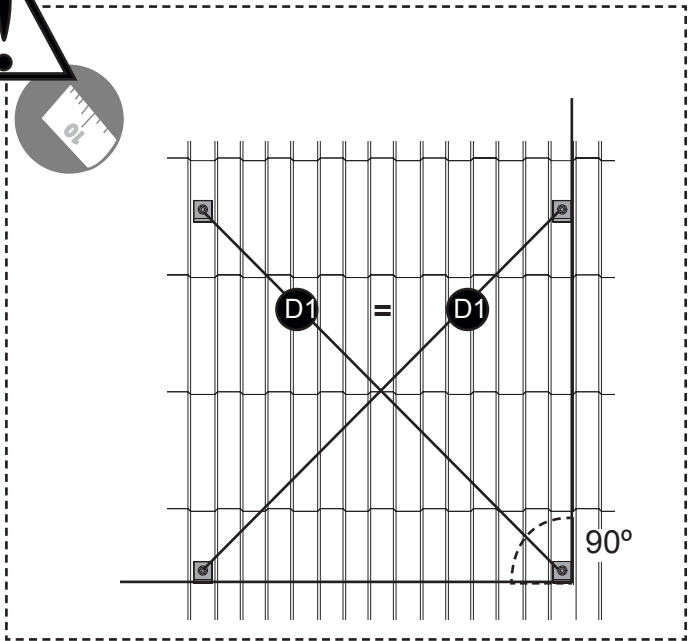
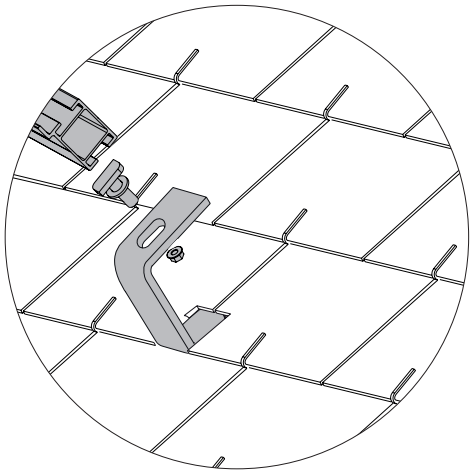
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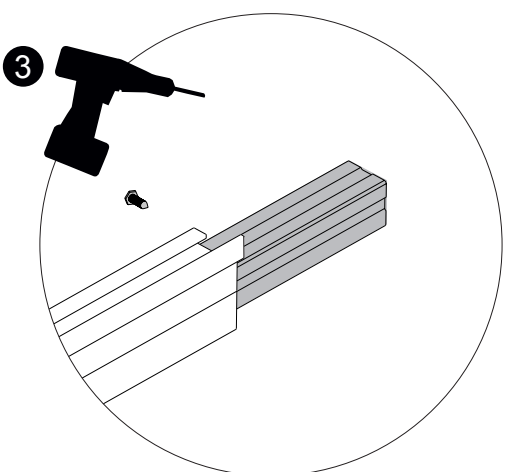
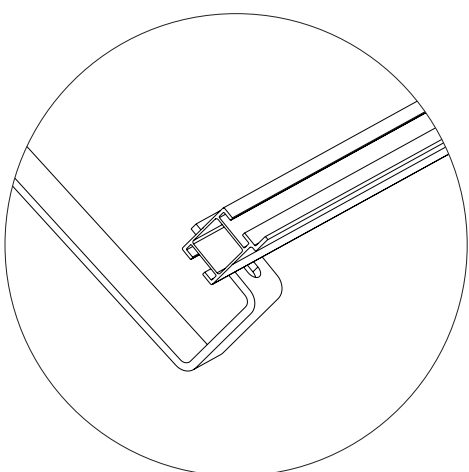
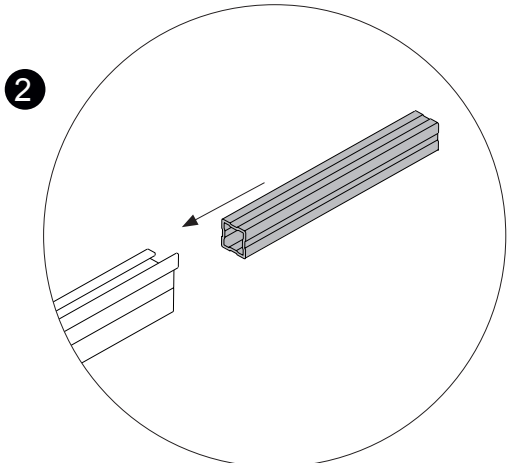
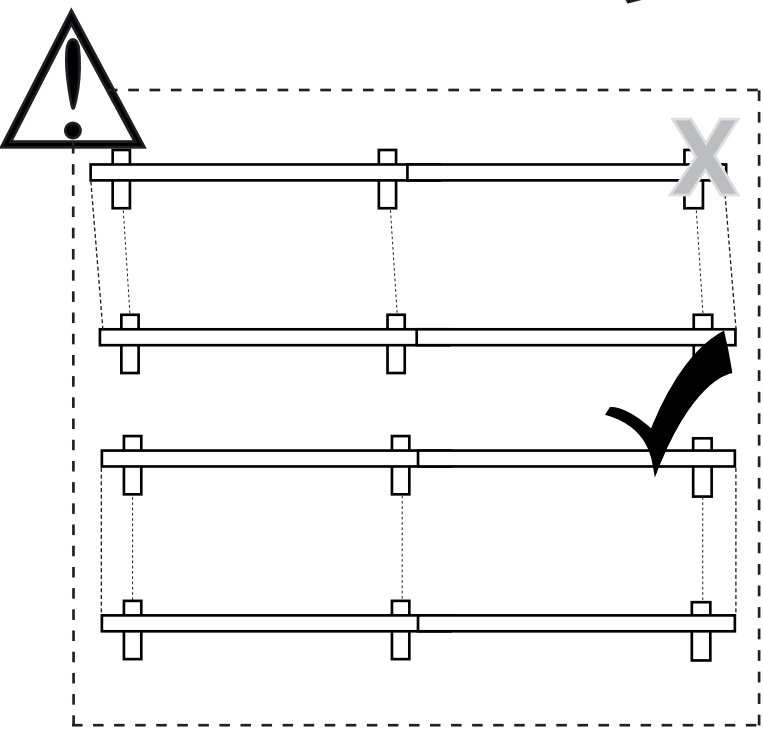
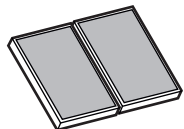




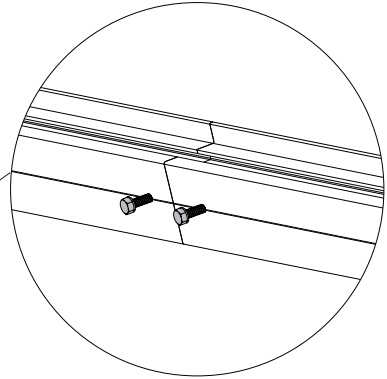
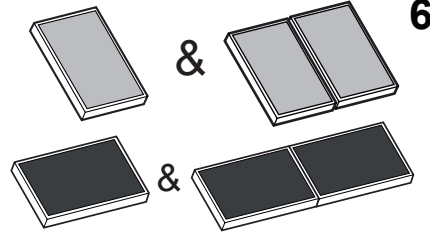
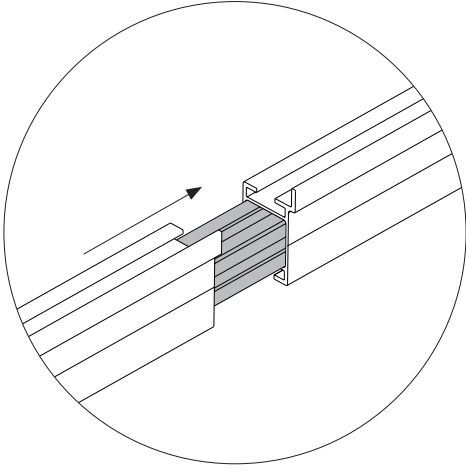
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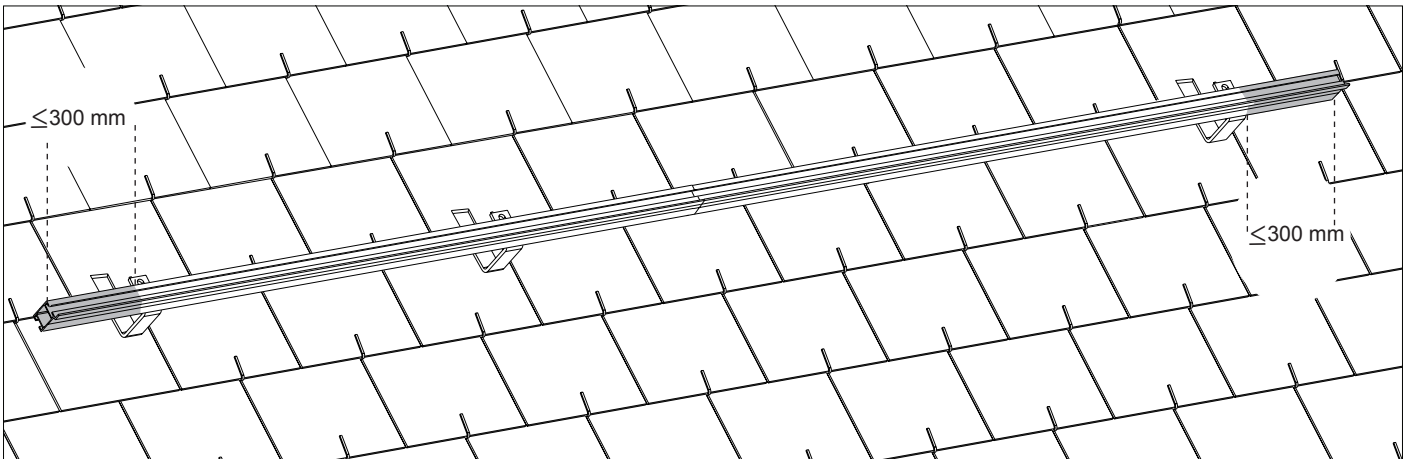
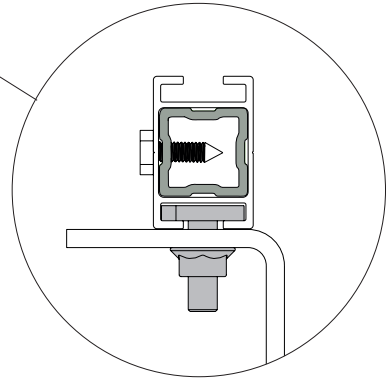
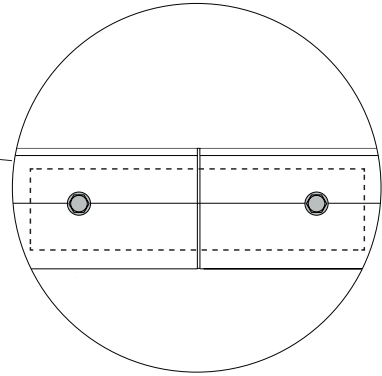
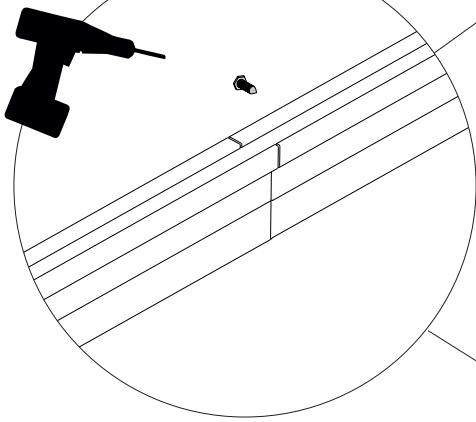
**6.0** Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage



4

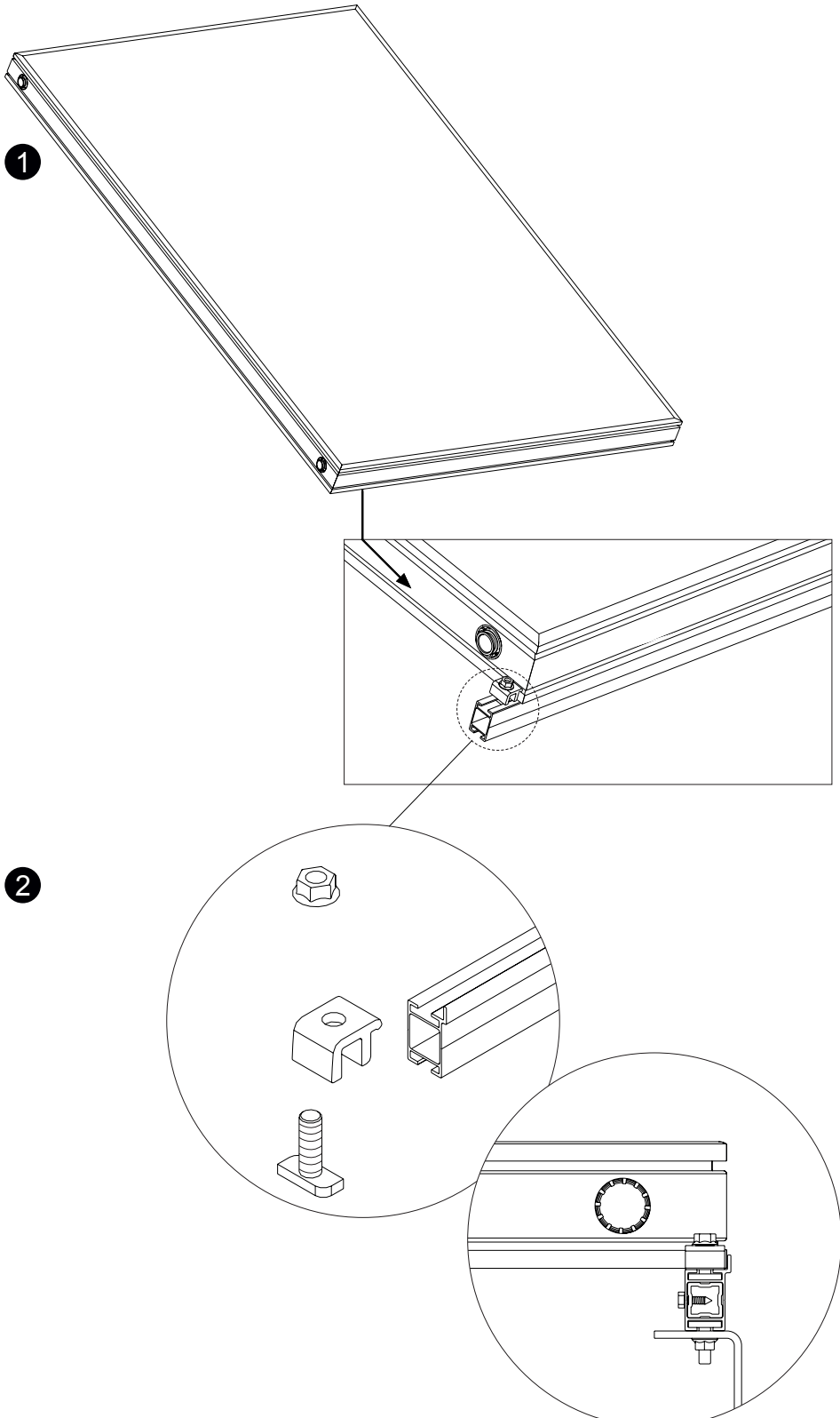


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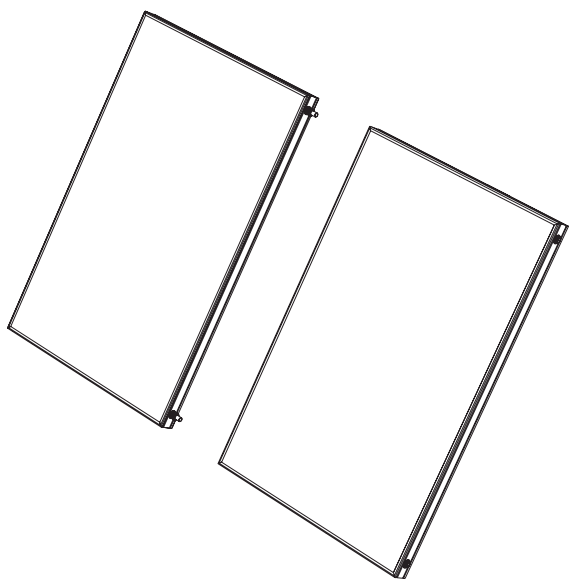


6.0 Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage

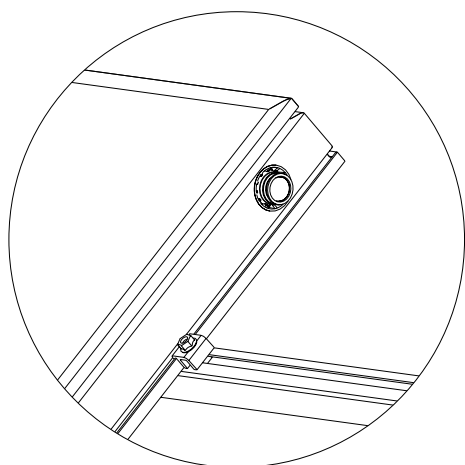
Takstein  
Stålplater  
Skifer



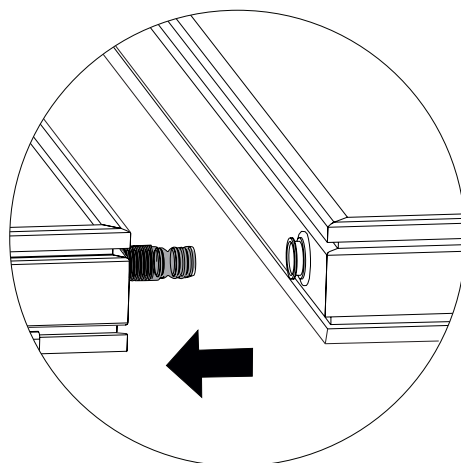
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Stålplater  
Skifer



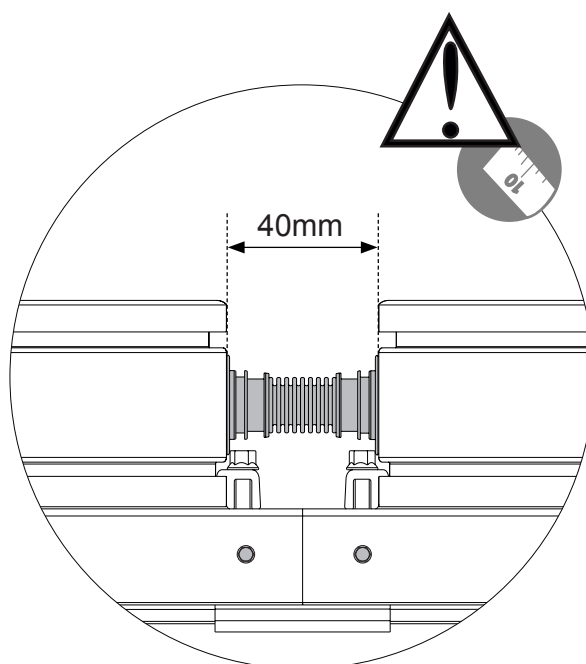
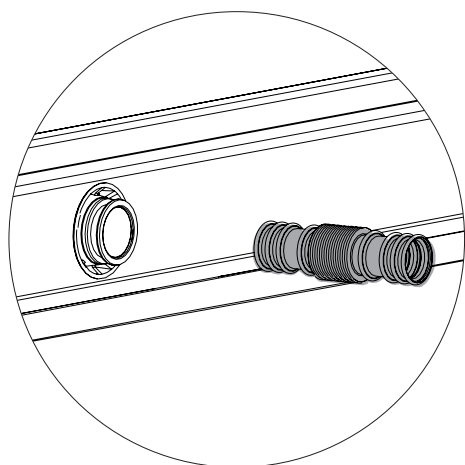
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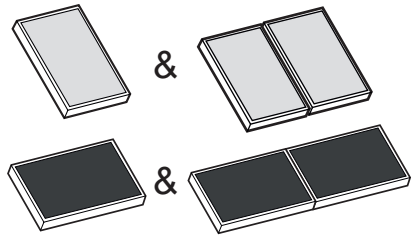
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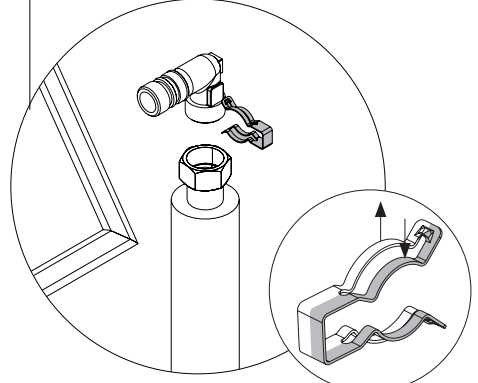
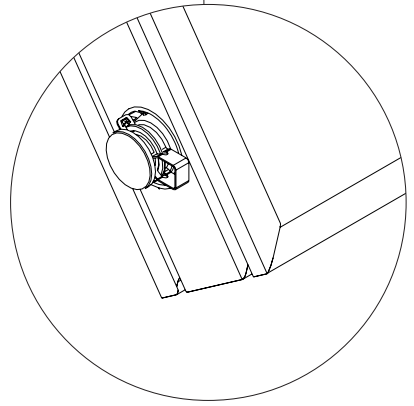
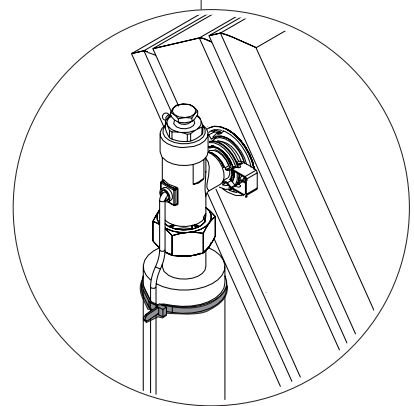
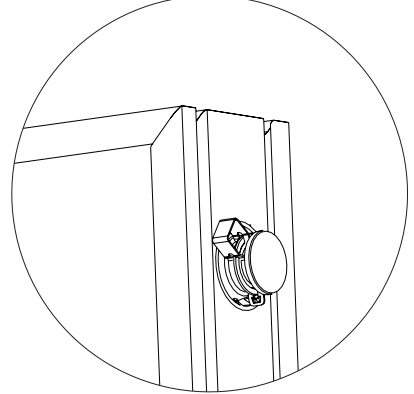
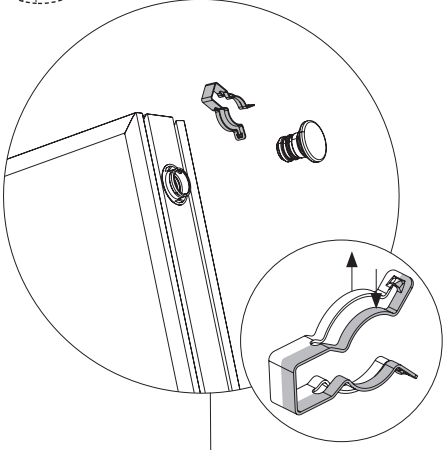
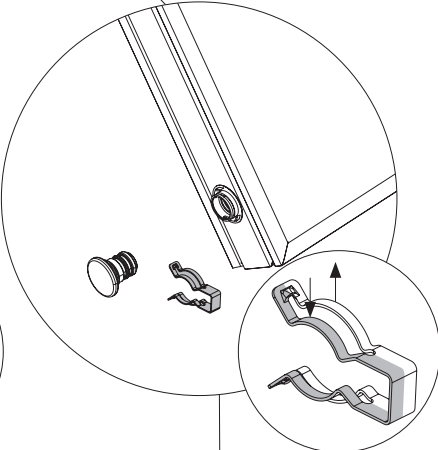
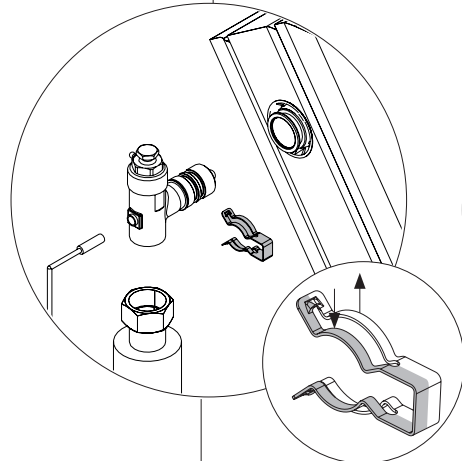
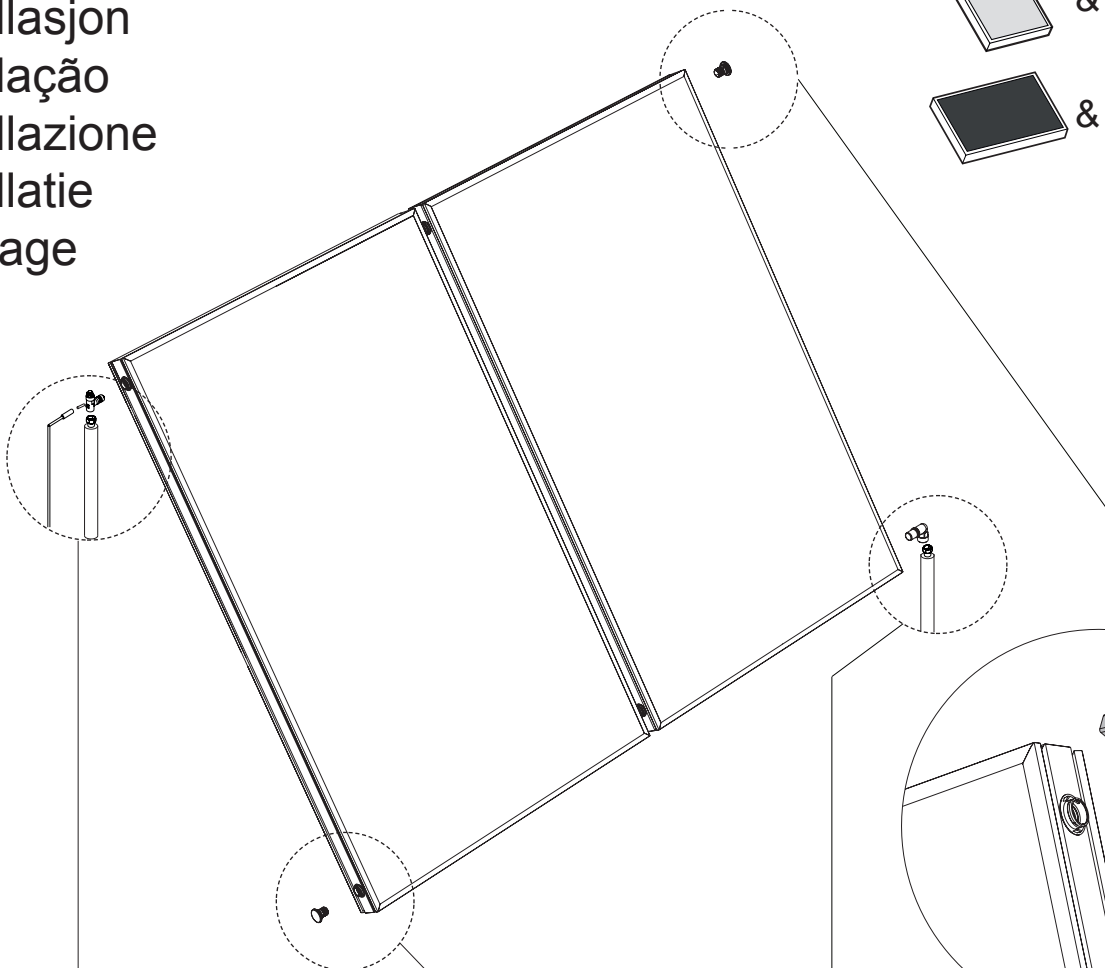
2



**6.0** Installation  
Installation  
Installasjon  
Instalação  
Installazione  
Installatie  
Montage



Takstein  
Stålplater  
Skifer



# Charges de neige et de vent

## Snow and Wind Load

### Snø og vindlaster

### Carga de vento e neve

### Carico della neve e del vento

### Sneeuw- en windlast

### Schnee- und Windlast



#### FR

Charge de neige limite de la conception en surface = **1.9 kN/m<sup>2</sup>**

REMARQUE : cette limite sera réduite pour les installations où les contreforts augmentent les risques de chutes d'eau ou de neige. Dans les zones à charge de neige élevée (plus de 1kN/m<sup>2</sup>), il est recommandé d'installer un pare-neige à une distance maximale de 0.5 m au-dessus du capteur solaire.

La charge de vent maximale supportée par la structure de montage dépend, entre autres facteurs, de la hauteur et de la zone géographique du site. Cette structure doit être installée conformément aux dispositions de la norme EN1991. Consultez votre revendeur agréé en cas de doute.

#### UK

Design limit snow load on the ground = **1.9kN/m<sup>2</sup>**

NOTE: This limit will be reduced for installations where abutments create additional risks of drifting or falling snow. In high snow load areas (greater than 1kN/m<sup>2</sup>) it is recommended that a snow fence is fitted at maximum distance of 0.5m above the collector.

The maximum wind load to be borne by the mounting structure depends on the height and geographical area of the site among other factors This structure must be installed in accordance with the provisions of the EN1991 standard. Consult your official dealer if in doubt.

#### NO

Maksimum snølast på bakken = **1.9 kN/m<sup>2</sup>**

OBS: Denne grensen reduseres ved installasjoner med fare for ekstra laster på grunn av snødrev eller snøras. I områder med mye snø anbefales det at snøfanger monteres maksimum 0.5 meter over kollektoren (ved forventet snømengde over 1 kN/m<sup>2</sup>).

Maksimum vindlast som må bæres av konstruksjonen avhenger av lokale forhold. Konstruksjonen bør designes etter EN1991 standard. Ved tvil bør bygningskonsulent konfereres.

#### PT

Limite de projecto para carga de neve no solo = **1.9 kN/m<sup>2</sup>**

NOTA: Este limite será reduzido em instalações onde os pilares criem riscos adicionais de deslizamento ou queda de neve. Nas áreas com carga de neve elevada (superior a 1 kN/m<sup>2</sup>), recomenda-se a instalação de uma barreira de neve a uma distância máxima de 0,5 m acima do coletor.

A carga de vento máxima suportada pela estrutura de montagem depende da altura e da zona geográfica do lugar, entre diversos factores. Esta estrutura deve ser instalada de acordo com o disposto pela norma EN1991. Consulte o seu vendedor oficial caso tenha dúvidas.

#### IT

Limite di progetto per il carico della neve a terra= **1.9 kN/m<sup>2</sup>**

NOTA: tale limite andrà ridotto per installazioni nelle quali gli ancoraggi creano ulteriore rischio di spostamento o caduta di neve. Nelle zone soggette a carichi di neve elevati (maggiori di 1 kN/m<sup>2</sup>) si raccomanda di installare una barriera paraneve ad una distanza massima di 0,5 m al di sopra del collettore.

Tra gli altri fattori, dipende dall'altezza e dalla zona geografica del luogo. Questa struttura deve essere installata in ottemperanza alla norma EN1991. Consultare il distributore ufficiale in caso di dubbi.

#### NE

Ontwerplimiet sneeuwlast op de grond= **1.9 kN/m<sup>2</sup>**

OPMERKING : Deze limiet zal gereduceerd worden voor installaties waarvan steunpunten bijkomende risico's vormen voor opgewaai- de of vallende sneeuw. In gebieden met een grote sneeuwlast (hoger dan 1kN/m<sup>2</sup>) wordt de opstelling van een sneeuwheka aanbevolen op een maximale afstand van 0.5m boven de collector.

De maximum windbelasting die de montagestructuur moet aankanen, hangt o.a. af van de hoogte en het geografische gebied van de locatie. Deze structuur moet geïnstalleerd worden in overeenstemming met de bepalingen van de norm EN1991. Raadpleeg uw officiële verdeler in geval van twijfel.

#### GE

Auslegungsgrenzwert für Schneelast am Boden = **1,9 kN/m<sup>2</sup>**

HINWEIS: Dieser Grenzwert wird für Installationen, bei denen Dachaufbauten zu einem zusätzlichen Risiko für Abrutschen oder Herabfallen von Schnee führen, herabgesetzt. In Bereichen mit hoher Schneelast (höher als 1 kN/m<sup>2</sup>) wird empfohlen, einen Schneezäun in einem maximalen Abstand von 0,5 m über dem Kollektor anzubringen.

Die vom Montagesystem aufzunehmende Höchstbelastung durch Wind hängt neben anderen Faktoren von der Höhe und der geografischen Lage des Standorts ab. Das Montagesystem ist nach den Anweisungen der Norm EN1991 zu installieren. Bei Fragen bitte an Ihren Vertriebshändler wenden.

# 8.0 Législation et maintenance

## Legislation and maintenance

### Lovkrav og vedlikehold

### Legislação e manutenção

### Legislazione e manutenzione

### Wetgeving en onderhoud

### Vorschriften und Wartung

## FR LÉGISLATION

Veillez tenir compte des instructions suivantes en termes de lois, réglementations et règles techniques. Lors de la mise en place d'installations à énergie solaire, il convient de respecter la législation et la réglementation en vigueur aux niveaux régional, national, européen ou international s'appliquant au pays concerné. Les règles techniques généralement admises s'appliquent. Elles sont habituellement formulées sous formes de normes, directives, prescriptions, dispositions et règlements techniques formulés par les organismes régionaux et nationaux, les fournisseurs d'énergie, les organisations de commerce et comités techniques dans les domaines concernés. Lors de l'installation de modules solaires, sont à prendre en compte de manière conséquente les éventuelles mesures d'étanchéification du toit et des murs répondant à des exigences élevées en matière de protection contre les eaux de pluie. Afin de répondre aux exigences en termes de prévention des accidents, l'emploi de dispositifs de sécurité tels que des sangles, échafaudages, supports, etc. peut s'avérer nécessaire. Un tel matériel de sécurité n'est pas fourni et doit être commandé séparément. Seul un personnel dûment qualifié et autorisé, disposant de qualifications reconnues (délivrées par un institut régional ou national) dans le domaine concerné, est en droit de procéder au montage.

- Utilisez un harnais de sécurité lors de travaux en hauteur.
- La structure du toit doit être contrôlée et reconnue comme appropriée avant le début des travaux.
- Consultez un ingénieur en charpente si vous n'êtes pas sûr de l'installation du capteur solaire.
- Les charges dues à la neige peuvent dépasser les capacités de la structure de la propriété.
- Les charges dues au vent peuvent engendrer des forces excessives au niveau de la structure et provoquer des dégâts.
- L'installateur est responsable de l'adéquation du site et de sa sous-structure.
- Des goujons et boulons d'ancrage peuvent s'avérer nécessaires pour sécuriser le capteur solaire sur une surface de toit appropriée.
- Si le toit n'est pas adapté pour l'utilisation de goujons et de boulons d'ancrage, des lests peuvent être utilisés.
- Le capteur solaire doit être installé correctement afin d'éviter tout dommage dû à la chute de débris ou à des actes de vandalisme.
- Tous les travaux de tuyauterie de l'installation doivent être reliés à la terre.
- Dans les zones à risques, le capteur solaire doit être protégé contre la foudre.
- Deux personnes au moins sont recommandées pour soulever ce produit.
- Le capteur solaire ne doit pas être soulevé par ses raccords de tuyauterie.
- Assurez-vous que tous les raccords hydrauliques sont correctement serrés et exempts de fuites.
- Le système doit être inspecté une fois les travaux terminés.
- Il est en outre recommandé de procéder à une inspection annuelle.
- Évitez d'installer le capteur solaire dans des zones ombragées.
- Le couple de serrage généralement recommandé pour les écrous et boulons est de 10 Nm.
- Un champ séparé peut être installé derrière le premier si nécessaire.
- Pour les champs importants, des canalisations, des ensembles de pompes et des plans spécifiques seront nécessaires.
- Le capteur solaire ne doit pas être installé sur une surface de toit irrégulière.
- N'employez pas de force excessive lors de l'installation du capteur solaire.
- Les surfaces chaudes et exposées devant être touchées doivent être isolées pour éviter toute blessure.
- Il n'est pas nécessaire de lubrifier les raccords à joint torique.

## MAINTENANCE

Il est recommandé d'effectuer chaque année les vérifications suivantes:

- 1) Vérifiez que l'installation du capteur solaire ne présente pas de signe de détérioration ni d'accumulation de débris.
- 2) Vérifiez que le capteur solaire et le système de montage ne sont pas corrodés et réparez-les si nécessaire.
- 3) Vérifiez l'étanchéité des attaches. Si les attaches ne sont pas facilement accessibles, la sécurité globale de l'installation du capteur solaire peut indiquer la présence d'un problème.
- 4) Recherchez d'éventuelles fuites de liquide ou détériorations sur les raccords et la tuyauterie, en vérifiant notamment l'état de l'isolation des tuyaux, et réparez si nécessaire. Recherchez d'éventuelles traces de fuites à l'intérieur du bâtiment.
- 5) Examinez la toiture autour de l'installation du capteur solaire et recherchez d'éventuelles détériorations ; réparez-les si nécessaire.
- 6) Assurez-vous que des feuillages ne font pas de l'ombre aux capteurs solaires.
- 7) Le cas échéant, vérifiez l'état des lests servant à sécuriser le système.
- 8) Dans les zones où de la poussière s'est accumulée sur le capteur solaire, utilisez uniquement des matériaux et méthodes de nettoyage non abrasifs pour nettoyer les capteurs

## UK LEGISLATION

Please note the following instructions regarding laws, regulations and technical rules. When setting up solar energy installations, the laws and regulations at local, state, European and international level that apply to the country in question must be observed. Generally acknowledged technical regulations apply; these are usually formulated in the form of standards, guidelines, provisions, regulations and technical rules laid down by local and national bodies, energy supply companies, trade organisations and technical committees in the relevant fields. The installation of solar units may require improved rain resistance with regard to roof, wall and sealing technology and this must be taken into account accordingly. To meet regulations for the prevention of accidents, it may be necessary to use safety equipment (straps, scaffolding, supports, etc.). Such safety equipment is not supplied. Installation must only be carried out by technically qualified and authorised personnel with a recognised qualification (verified by a state or national body) in the relevant technical area.

- Use a safety harness when working at height.
- The structure of the roof must be assessed for its suitability prior to commencing work.
- Consult a Structural Engineer if you are unsure of the collector's siting.
- Loading due to snow may exceed the capability of the property's structure.
- Wind loads may cause excess forces on the structure and cause damage.
- The Installer is responsible for the suitability of the site and its sub-structure.
- An anchor plug and bolt may be used to secure the collector on a suitable roof surface.
- The collector should be sited to avoid damage from falling debris and vandalism.
- All pipe work within this installation must be Earth bonded.
- In exposed areas, the collector must be protected against the risk of lightning.
- It is recommended that a minimum of 2 people are used to lift this product.
- The collector must not be lifted by its pipe connections.
- Ensure all hydraulic connections are securely fixed and are free of leaks.
- The system must be inspected on completion of the work.
- A further inspection is recommended annually.
- Avoid installing the collector in shaded areas.
- The general recommended torque setting for nuts and bolts is 10Nm.
- A separate second array can be installed behind the first if necessary.
- The collector must not be installed on an uneven roof surface.
- Do not apply excessive force when installing the collector.
- Hot, exposed surfaces that can be touched must be insulated to protect against injury.
- Lubrication is not required for the 'O' ring connections.

## MAINTENANCE

It is recommended that the following checks are carried out on an annual basis:

- 1) Check the collector installation for any signs of damage or any build up of debris.
- 2) Check for any corrosion to the collector or the mounting system and repair if necessary.
- 3) Check the tightness of the fasteners. Where fasteners cannot be readily accessed, the overall security of the collector installation may indicate whether problems exist.
- 4) Check the fittings and pipe work for any signs of fluid leakage or damage, including the condition of the pipe insulation, and repair if necessary. Check inside the building for any evidence of leaks.
- 5) Examine the roof tiles around the collector installation for any damage or deterioration, and repair if necessary.
- 6) Check for any foliage growth that may cause shading of the collectors.
- 7) Where applicable, check the condition of any ballast used to secure the system.
- 8) In areas where there may be a build up of dirt on the collector, only nonabrasive cleaning materials and methods should be used to clean the collectors and mounting system components.



## NO LOVKRAV

Observer følgende angående lovkrav, reguleringer og teknisk design. Når en monterer et solvarmeanlegg gjelder norske lovkrav hva angår planlegging, montasje og igangkjøring. Generelle tekniske bygningskrav må overholdes. Disse fremkommer normalt i byggeforskrifter og standarder. Solfanger installasjonen kan kreve økt beskyttelse mot vann/regn for tak og vegger, og en tett bygningsmasse må påses.

For å møte lovkrav og unngå skader kan det være nødvendig med ekstra sikkerhetsutstyr, så som stropper, stillas, støtter, etc. Dette utstyret leveres ikke med leveransen. Installasjon må kun foretas av kvalifiserte installatører som har de nødvendige HMS sertifikater.

- Bruk sikringsutstyr når en arbeider i høyden.
- Takets struktur og robusthet bør vurderes før montasje påbegynnes.
- Konsulter med statiker/bygningskonsulent hvis du er usikker på byggets robusthet.
- Snølast kan overstige bygningens lastgrenser.
- Vindlast kan gi store krefter og kan forårsake skade.
- Installatøren er ansvarlig for å forsikre seg om at bygningen tåler lasten fra solfangerene.
- En kan bolte installasjonen fast i taket (dersom taket er egnet til dette).
- Solfangeren bør beskyttes mot fallende rusk og rask samt herværk.
- Alle rørføringer bør være jordet.
- I utsatte områder bør solfangeren beskyttes mot lynnedslag.
- Det er anbefalt at minimum to personer løfter solfangeren.
- Solfangeren må ikke løftes i rørstusser.
- Sikre at alle hydrauliske koblinger er faste og tette.
- Anlegget bør kontrolleres etter montasje.
- Videre bør anlegget kontrolleres årlig.
- Unngå å montere solfangeren i skyggen.
- Det generelle momentet for bolter og muttere er 10Nm.
- Flere felt med solfangere kan monteres bak hverandre.
- Solfangeren må ikke monteres på et ujevnt underlag/tak.
- Ikke bruk unødvendig mye kraft ved montering av solfangeren.
- Varme, eksponerte overflater bør isoleres for å unngå skade.
- Det er ikke nødvendig å smøre o-ring pakningene.

## VEDLIKEHOLD

Det anbefales at følgende punkter kontrolleres årlig:

- 1) Kontroller anlegget, bygget og solfangere for lekkasjer.
- 2) Kontroller solfangere og stativer for korrosjon, skader og "rusk og rask".
- 3) Kontroller at fester er faste. Kontroller at solfangere fremdeles er solid festet.
- 4) Kontroller isolasjon på rørene for skader.
- 5) Kontroller takstein rundt solfangerene for skader, fiks hvis nødvendig.
- 6) Kontroller at trær og fremvekst av trær ikke gir skygge til solfangerene.
- 7) Kontroller eventuell ballast som sikrer anlegget. Kontroller festebolter.
- 8) I områder hvor solfangeren kan bli tilsmusset - bruk kun vaskemidler/materialer som ikke skraper til å rengjøre solfanger og festesystem.

## PT LEGISLAÇÃO

Tenha em atenção as seguintes instruções relativas a leis, regulamentos e regras técnicas. Na montagem de instalações de energia solar, devem ser cumpridas as leis e regulamentos ao nível local, estatal, europeu e internacional aplicáveis no país em questão. São aplicáveis regulamentos técnicos geralmente reconhecidas.

- Estes apresentam-se, habitualmente, na forma de normas, directrizes, disposições, regulamentos e regras técnicas elaboradas pelas entidades locais e nacionais, empresas de fornecimento energético, organizações comerciais e comissões técnicas das áreas relevantes. A instalação de unidades solares pode exigir uma resistência à chuva mais rigorosa no que respeita ao telhado, paredes e tecnologia de vedação, devendo ser considerada de modo adequado. Com vista ao cumprimento dos regulamentos relativos à prevenção de acidentes, poderá ser necessária a utilização de equipamentos de segurança (correias, andaimes, apoios, etc.). Tais equipamentos de segurança não são fornecidos. A instalação só deve ser realizada por pessoal tecnicamente qualificado e autorizado, com uma qualificação acreditada (verificada por uma entidade estatal ou nacional) na área técnica relevante.
- Utilize um arnés de segurança aquando da realização de trabalhos em altura.
- A estrutura do telhado deve ser avaliada quanto à sua adequação antes do início dos trabalhos.
- Consulte um engenheiro de estruturas caso tenha dúvidas relativamente ao local de instalação do colector.
- A pressão resultante de carga de neve pode exceder a capacidade da estrutura da propriedade.
- As cargas de vento podem forçar em excesso a estrutura e causar danos.
- O Instalador é responsável pela adequação do local e respectiva subestrutura.
- Pode utilizar-se um parafuso e tampão de ancoragem para fixar o colector numa superfície de telhado adequada.
- Se o telhado não for adequado para a utilização de parafuso e tampão de ancoragem, pode utilizar-se lastro.
- O colector deve ser instalado num local onde se evitem danos resultantes da queda de detritos e vandalismo.
- Toda a tubagem relativa à instalação deve estar ligada à terra.
- Em áreas expostas, o colector deve ser protegido contra o risco de relâmpagos.
- Recomenda-se que este produto seja elevado, no mínimo, por 2 pessoas.
- O colector não deve ser elevado através das respectivas ligações de tubagem.
- Verifique se todas as ligações hidráulicas estão firmemente apertadas e se não existem fugas.
- O sistema deve ser inspeccionado após a conclusão do trabalho.
- Recomenda-se a realização de uma inspecção adicional anualmente.
- Evite instalar o colector em áreas com sombra.
- O binário habitualmente recomendado para porcas e parafusos é de 10 Nm.
- Pode ser instalada uma segunda sequência de colectores por detrás da primeira, se necessário.
- O colector não deve ser instalado num telhado de superfície irregular.
- Não exerça força excessiva ao instalar o colector.
- Superfícies quentes e expostas que possam ser tocadas devem ser isoladas com vista a proteger contra ferimentos.
- Não é necessário lubrificar as ligações dos O-ring.

## MANUTENÇÃO

Recomenda-se que as seguintes verificações sejam realizadas anualmente:

- 1) Verifique a instalação do colector quanto a danos ou acumulação de detritos.
- 2) Verifique se existe corrosão no colector ou no sistema de montagem e repare, se necessário.
- 3) Verifique a tensão dos fixadores. Quando não for possível aceder facilmente aos fixadores, a segurança geral da instalação do colector pode indicar a existência de problemas.
- 4) Verifique os encaixes e tubagens quanto a fugas de fluido ou danos, incluindo o estado do isolamento da tubagem e repare, se necessário. Verifique a existência de fugas no interior do edifício.
- 5) Examine as telhas nas proximidades da instalação do colector quanto a danos ou deterioração e repare, se necessário.
- 6) Verifique o crescimento de qualquer vegetação que possa causar sombreamento nos colectores.
- 7) Quando aplicável, verifique o estado de qualquer lastro utilizado para fixar o sistema.
- 8) Em áreas onde possa ocorrer a acumulação de sujidade no colector, apenas devem ser utilizados métodos e materiais de limpeza não abrasivos para limpar os colectores e os componentes do sistema de montagem.

# 8.0 Législation et maintenance

## Legislation and maintenance

### Lovkrav og vedlikehold

### Legislação e manutenção

### Legislazione e manutenzione

### Wetgeving en onderhoud

### Vorschriften und Wartung

## IT LEGISLAZIONE

Tenere presenti le seguenti istruzioni in relazione a leggi, normative e regolamenti tecnici. Per la progettazione di un impianto a energia solare occorre rispettare le leggi e le normative in vigore a livello locale, statale, europeo e internazionale valide per il paese in questione. Inoltre, è necessario tenere conto dei regolamenti tecnici comunemente riconosciuti, che in genere sono formulati sotto forma di standard, linee guida, disposizioni, regolamenti e norme tecniche elaborati da organismi locali e nazionali, aziende di erogazione di energia elettrica, organizzazioni commerciali e comitati tecnici nei campi di competenza. L'installazione di unità solari potrebbe richiedere un miglioramento delle caratteristiche di resistenza alla pioggia di tetto, pareti e tecnologie di impermeabilizzazione, che dovranno essere tenute nella dovuta considerazione. Per soddisfare le normative in materia di prevenzione di incidenti, potrebbe essere necessario utilizzare attrezzature di sicurezza (cinghie, ponteggi, supporti, ecc.). Tali attrezzature non sono fornite e pertanto devono essere ordinate separatamente. L'installazione deve essere eseguita da personale tecnico specializzato autorizzato, in possesso di qualifiche riconosciute (verificate da un organismo nazionale) nello specifico settore tecnico.

- Per l'esecuzione di lavori in altezza utilizzare un'imbracatura di sicurezza.
- Prima di iniziare l'installazione, accertarsi dell'idoneità della struttura del tetto.
- In caso di dubbi nella scelta dell'ubicazione del collettore, rivolgersi a un ingegnere strutturista.
- Il carico dovuto alla neve può superare quello tollerato dalla struttura dell'edificio.
- I carichi dovuti al vento possono esercitare sollecitazioni eccessive sulla struttura e provocare danni.
- È responsabilità dell'installatore verificare l'idoneità del sito di installazione e della struttura su cui poggia.
- Il sito di installazione del collettore deve essere scelto in modo da evitare danni dovuti all'eventuale caduta di detriti o ad atti di vandalismo.
- Tutte le tubazioni dell'impianto devono essere dotate di collegamento a terra.
- Nelle aree esposte, il collettore deve essere dotato di protezione contro i fulmini.
- Questo prodotto deve essere sollevato da almeno 2 persone.
- Per sollevare il collettore, evitare di afferrarlo dai collegamenti per i tubi.
- Verificare che tutti i collegamenti idraulici siano fissati saldamente e non presentino perdite.
- Al termine dell'installazione, ispezionare il sistema.
- È consigliabile ispezionare ulteriormente il sistema con frequenza annuale.
- Evitare di installare il collettore in zone ombreggiate.
- Come regola generale, si consiglia di serrare dadi e bulloni con una coppia di 10 Nm.
- Se necessario, è possibile montare una seconda serie distinta di collettori dietro la prima.
- Le serie di grandi dimensioni richiedono configurazioni, tubazioni e gruppi di pompaggio specifici.
- Non installare il collettore su superfici del tetto irregolari.
- Non esercitare una forza eccessiva per l'installazione del collettore.
- Le superfici calde esposte e accessibili devono essere opportunamente protette per evitare il rischio di infortuni.
- Non è necessario lubrificare i collegamenti ad anello toroidale.

## MANUTENZIONE

Si raccomanda di effettuare i seguenti controlli ogni anno:

- 1) Controllare l'installazione del collettore per individuare eventuali segni di danneggiamento o accumuli di sporcizia.
- 2) Verificare l'eventuale presenza di segni di corrosione sul collettore o sul sistema di montaggio e riparare se necessario.
- 3) Controllare la tenuta dei dispositivi di fissaggio. Se l'accesso ai dispositivi di fissaggio non è agevole, per individuare la presenza di eventuali problemi può essere utile verificare la tenuta complessiva del collettore.
- 4) Controllare le tubazioni e i raccordi per individuare segni di perdite o danneggiamenti, anche nel sistema di isolamento delle tubazioni, e riparare se necessario. Controllare l'interno dell'edificio per individuare eventuali perdite.
- 5) Esaminare le tegole intorno al collettore, verificare la presenza di danneggiamenti o deterioramenti e riparare se necessario.
- 6) Individuare eventuali crescite di fogliame che provochino ombreggiatura dei collettori.
- 7) Se applicabile, controllare le condizioni di eventuali zavorre utilizzate per fissare il sistema.
- 8) Nelle zone in cui potrebbero esserci accumuli di sporco sul collettore, utilizzare solo materiali e metodi

## NE WETGEVING

Gelieve de volgende instructies m.b.t. wetten, voorschriften en technische regels in acht te nemen. Bij het opstellen van zonne-energieinstallaties, dienen de wetten en reglementeringen op lokaal, nationaal, Europees en internationaal niveau die van toepassing zijn op het land in kwestie nageleefd te worden. Algemeen erkende technische voorschriften zijn van toepassing; deze worden doorgaans geformuleerd onder de vorm van normen, richtlijnen, bepalingen, voorschriften en technische regels die uitgesteld werden door lokale en nationale organen, energievoorzieningsbedrijven, handelsorganisaties en technische commissies binnen de desbetreffende branches. De vestiging van zonne-installaties kan verbeterde regenbestendigheidmaatregelen vereisen m.b.t. dak-, muur- en dichtingstechnologie en er dient dienovereenkomstig rekening mee te worden gehouden. Ten einde te voldoen aan de voorschriften op het gebied van preventie van ongevallen, kan het noodzakelijk zijn veiligheidsuitrusting (riemen, stellingen, steunstukken, etc.). Dergelijke veiligheidsuitrusting wordt niet meegeleverd en dient afzonderlijk besteld te worden. De installatie mag enkel uitgevoerd worden door technisch gekwalificeerd en bevoegd personeel met een erkend diploma (bekrachtigd door een staat of nationaal orgaan) in het desbetreffende technisch vakgebied.

- Gebruik een veiligheids gordel als u op grote hoogte werkt.
- De structuur van het dak dient op zijn geschiktheid beoordeeld te worden alvorens het werk aan te vatten.
- Raadpleeg een bouwkundig ingenieur indien u niet zeker bent van de bevestigingsplaats van de collector.
- Verzwaring door sneeuw kan het draagvermogen van de structuur van het gebouw overschrijden.
- Windbelasting kan voor buitensporige kracht op de structuur en zodoende voor schade zorgen.
- De installateur is verantwoordelijk voor de geschiktheid van de locatie en de substructuur ervan.
- Een ankerplug en -bout kunnen gebruikt worden om de collector op een geschikt dakoppervlak te bevestigen.
- Indien het dak ongeschikt is voor de ankerplug en -bout, kan er ballast gebruikt worden.
- De collector dient zodanig geplaatst te worden zodat het niet beschadigd kan worden door vallend puin of door vandalisme.
- Alle leidingen binnen deze installatie moeten aan de aarde bevestigd zijn.
- Op onbeschutte plaatsen dient de collector beschermd te worden tegen bliksemrisico.
- Het wordt aanbevolen dat er minimum 2 personen ingeschakeld worden om dit product op te tillen.
- De collector mag niet opgetild worden via de leidingaansluitingen.
- Zorg ervoor dat alle hydraulische aansluitingen stevig vastzitten en lekvrij zijn.
- Het systeem dient gecontroleerd te worden eens het werk voltooid is.
- Vervolgens dient het jaarlijks opnieuw gecontroleerd te worden.
- Vermijd de installatie van de collector op schaduwrijke plaatsen.
- Het algemeen aanbevolen draaimoment voor moeren en bouten is 10Nm.
- Indien nodig kan er een tweede rij achter de eerste geïnstalleerd worden.
- Grote rijen zullen gespecialiseerde piping, pompgroepen en -ontwerpen vergen.
- De collector mag niet geïnstalleerd worden op een oneffen dakoppervlak.
- Oefen geen overmatige kracht uit bij het installeren van de collector.
- Hete, blootliggende oppervlakken die aangeraakt kunnen worden, dienen te worden geïsoleerd om letsels te voorkomen.
- Smering is niet vereist bij de 'O'-ringverbindingen.

## ONDERHOUD

Het wordt aanbevolen dat de volgende controles op jaarlijkse basis uitgevoerd worden:

- 1) Controleer de collectorinstallatie op tekenen van schade of ophopingen van puin.
- 2) Controleer op corrosie aan de collector of aan het montagesysteem en repareer indien nodig.
- 3) Controleer de strakheid van de klemmen. Waar klemmen niet vlot bereikbaar zijn, kan de algemene beveiliging van de collectorinstallatie aangeven of er problemen zijn.
- 4) Controleer de fittings en de leidingen op tekenen van lekkage of schade, waaronder de toestand van de leidingisolatie, en herstel indien nodig. Controleer de binnenkant van het gebouw op sporen van lekkage.
- 5) Controleer de dakpannen rond de collectorinstallatie op enige schade of aantasting, en herstel indien nodig.
- 6) Controleer op bladertegroei die schaduw op de collectoren kan werpen.
- 7) Waar van toepassing, controleer de conditie van ballast die gebruikt wordt bij de beveiliging van het systeem.
- 8) In gebieden waar er mogelijk een ophoping van vuil op de collector is, mogen er enkel niet-schurende reinigingsmaterialen en -methoden gebruikt worden bij het schoonmaken van de collectoren en de onderdelen van het montagesysteem.

## GE VORSCHRIFTEN

Bitte beachten Sie die folgenden Hinweise zu Gesetzen, Vorschriften und technischen Regeln. Bei der Einrichtung von Solarenergieanlagen müssen die Gesetze und Vorschriften auf der lokalen, europäischen und internationalen Ebene, die für das jeweilige Land gelten, beachtet werden. Es gelten die allgemein anerkannten Regeln der Technik; diese sind für gewöhnlich in Form von Normen, Richtlinien, Bestimmungen, Vorschriften und technischen Regeln formuliert, die von lokalen und nationalen Behörden, Energieversorgungsunternehmen, Handelsorganisationen und technischen Ausschüssen im jeweiligen Gebiet aufgestellt werden. Die Montage von Solareinheiten kann im Hinblick auf Dächer, Wände und die Abdichtungstechnologie eine erhöhte Regenbeständigkeit erfordern, was entsprechend berücksichtigt werden muss. Zur Einhaltung von Unfallverhütungsvorschriften kann es erforderlich sein, Sicherheitsausrüstung (Gurte, Gerüste, Abstütungen usw.) zu verwenden. Derartige Sicherheitsausrüstung ist nicht im Lieferumfang enthalten und muss separat bestellt werden. Die Installation muss durch technisch qualifiziertes und zugelassenes Personal mit einer anerkannten Ausbildung (durch eine staatliche Einrichtung geprüft) im jeweiligen technischen Bereich erfolgen.

- Bei Höhenarbeiten ein Sicherheitsgeschirr verwenden.
- Die Dachstruktur muss vor Beginn der Arbeiten auf ihre Eignung überprüft werden.
- Bei Zweifeln bezüglich des Montageortes der Kollektoren einen Statiker befragen.
- Die Last aufgrund von Schnee kann die Tragfähigkeit des Gebäudes übersteigen.
- Windlasten können zu übermäßiger Krafteinwirkung auf die Gebäudestruktur führen und Schäden verursachen.
- Der Installateur ist für die Eignung des Montageortes und seines Unterbaus verantwortlich.
- Der Kollektor sollte so platziert werden, dass Schäden durch herabfallende Objekte und Vandalismus vermieden werden.
- Alle Rohre innerhalb der Anlage müssen mit Erdungsschellen versehen werden.
- In exponierten Bereichen muss der Kollektor vor Blitzschlag geschützt werden.
- Es wird empfohlen, dieses Produkt mindestens zu zweit anzuheben.
- Der Kollektor darf nicht an den Rohranschlüssen angehoben werden.
- Sicherstellen, dass alle Hydraulikanschlüsse ordnungsgemäß fixiert sind und frei von Lecks sind.
- Das System muss nach Abschluss der Arbeiten inspiziert werden.
- Es wird empfohlen, jährlich eine weitere Inspektion durchzuführen.
- Vermeiden, den Kollektor in beschatteten Bereichen zu installieren.
- Das allgemeine empfohlene Drehmoment für Muttern und Schrauben ist 10 Nm.
- Bei Bedarf kann eine zweite Kollektorreihe hinter der ersten installiert werden.
- Große Anlagen erfordern eine spezielle Verrohrung und Auslegung sowie spezielle Pumpengruppen.
- Der Kollektor darf nicht auf einer unebenen Dachoberfläche installiert werden.
- Bei der Installation des Kollektors keine übermäßige Kraft anwenden.
- Heiße, freiliegende Oberflächen, die berührt werden könnten, müssen geschützt werden, um Verletzungen zu vermeiden.
- Die O-Ring-Verbindungen müssen nicht geschmiert werden.

## WARTUNG

Es wird empfohlen, jährlich folgende Prüfungen durchzuführen:

- 1) Kollektoranlage auf Anzeichen von Beschädigungen oder Ablagerungen prüfen.
- 2) Kollektor- und Montagesystem auf Korrosion prüfen und ggf. reparieren.
- 3) Festen Sitz der Befestigungsteile prüfen. Wenn Befestigungsteile nicht zugänglich sind, kann der Montagezustand des gesamten Kollektors darauf hinweisen, ob Probleme vorliegen.
- 4) Die Anschlussstücke und Rohre auf jegliche Anzeichen von Lecks oder Beschädigungen prüfen, einschließlich Zustand der Rohrisolierung, und ggf. reparieren. Das Gebäudeinnere auf Anzeichen von Lecks prüfen.
- 5) Die Dachziegel im Bereich des Kollektors auf Schäden prüfen und ggf. reparieren.
- 6) Umgebung auf Pflanzenwuchs prüfen, der zur Beschattung der Kollektoren führen könnte.
- 7) Sofern vorhanden, den Zustand jeglichen Ballasts prüfen, der zur Fixierung des Systems verwendet wird.
- 8) In Bereichen, in denen sich Schmutz auf dem Kollektor abgelagert hat, nur nicht scheuernde Materialien und Verfahren verwenden, um die Kollektoren und Komponenten des Montagesystems zu reinigen.

**9.0** Notes  
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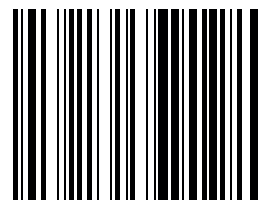


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