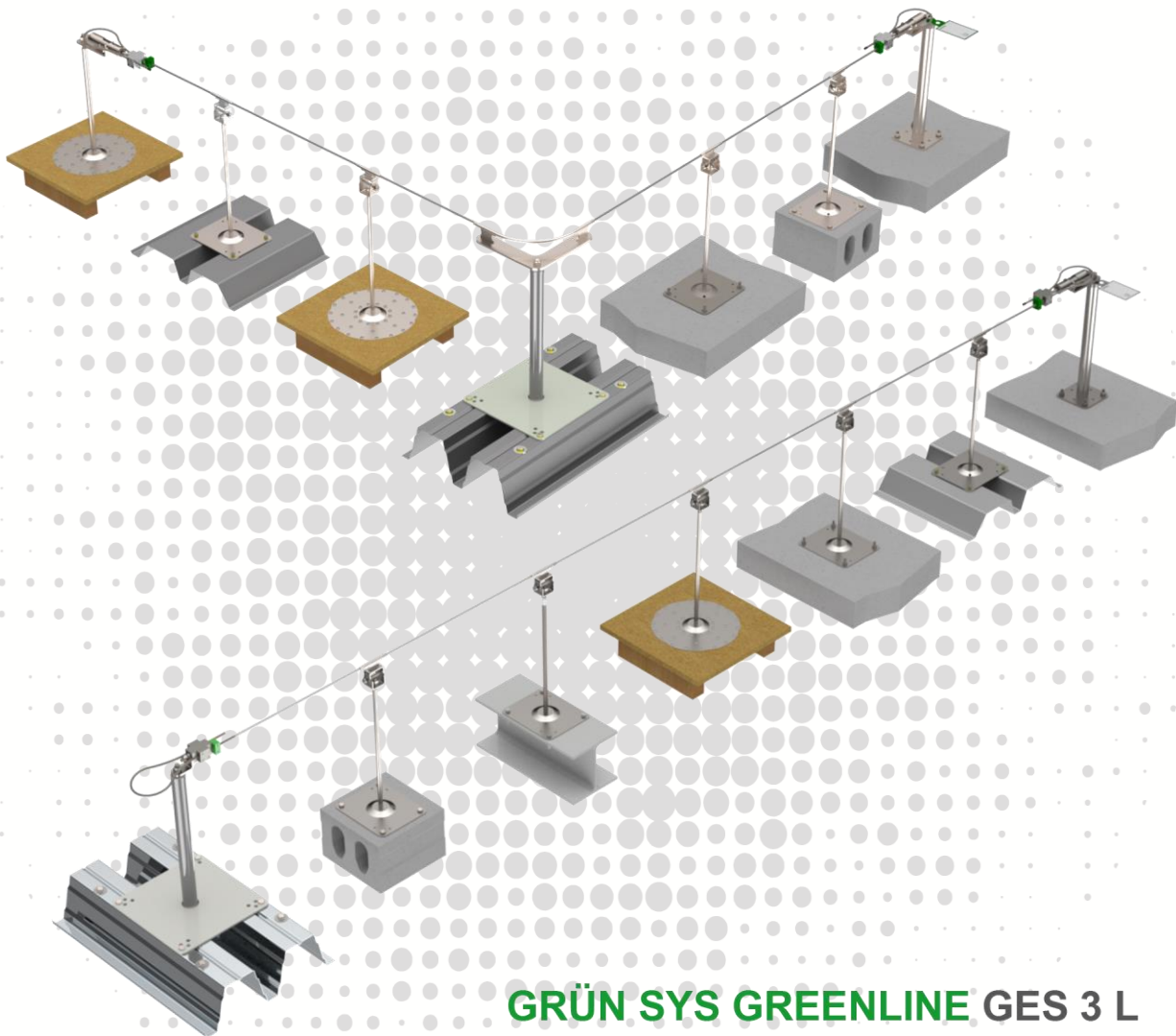




GRÜN SYS GREENLINE GES 3



GRÜN SYS GREENLINE GES 3 L



ATTENTION:

When using the anchor device, observe the GRÜN safety instructions.
When mounting the anchor device, observe the assembly instructions.

Inhaltsverzeichnis

1	Technical data	3
2	Specifications for system versions	4
2.1	Specifications for system versions conforming to EN 795	4
2.2	Specifications for system versions according to DIBt	6
3	System components and installation GRÜN SYS GREENLINE®	9
3.1	End lock sets	12
3.1.1	GRÜN SYS GREENLINE GES 3	12
3.1.2	GRÜN SYS GREENLINE GES 3 L	14
3.1.3	GRÜN SYS GREENLINE GES 3 PLUS	15
3.1.4	GRÜN SYS GREENLINE GES 3 L PLUS	15
3.1.5	GRÜN SYS GREENLINE GKB-X	16
3.2	Curve elements	17
3.2.1	GRÜN SYS GREENLINE GEH 90	17
3.2.2	GRÜN SYS GREENLINE GEH 45	17
3.2.3	GRÜN SYS GREENLINE STAINLESS STEEL CABLE	17
3.2.4	GRÜN SYS GREENLINE FLEX-KURVE GFK	18
3.2.5	GRÜN SYS GREENLINE GZH 40	19
3.2.6	GRÜN SYS GREENLINE GSR LIGHT	19
3.3	Intermediate supports	20
3.3.1	GRÜN SYS GREENLINE GZH	20
3.3.2	GRÜN SYS GREENLINE GZH FIX	21
3.3.3	GRÜN SYS GREENLINE GZH-X	21
3.4	Cable sliders	22
4	GREENLINE rope deflection in case of a fall	22
5	System labelling / type plate (standard)	23
6	Certification bodies	23
7	Documentation	23

Symbols:



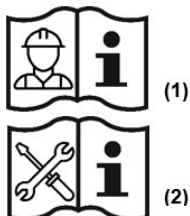
DIN EN 795



General building inspectorate approval /
general type approval from the DIBt
(Deutsches Institut für Bautechnik; German Institute
for Construction Engineering)



Load: parallel to the
mounting plane



Abbreviations	Meaning
EAE	Einzelanschlageinrichtung (Single anchor device)
SYS	Seilsystem (Cable system)
BEF	Befestigungsset (Screw set)
ZUB	Zubehör (Accessories)

ATTENTION:

To use the anchor device, observe the GRÜN safety instructions (1).

To attach the anchor device, observe the assembly instructions (2).

Only assembly instructions from GRÜN apply.

It is only permitted to use fastening materials supplied by GRÜN.

It is not permitted to replace individual parts.

1 Technical data

GREENLINE cable lifeline system

Standards / approvals for the anchor device:

DIN EN	795:2012	type C	for 1 person
CEN/TS	16415:2017	type C	for 4 persons
DIBt approval	Z-14.9-804		for 4 persons

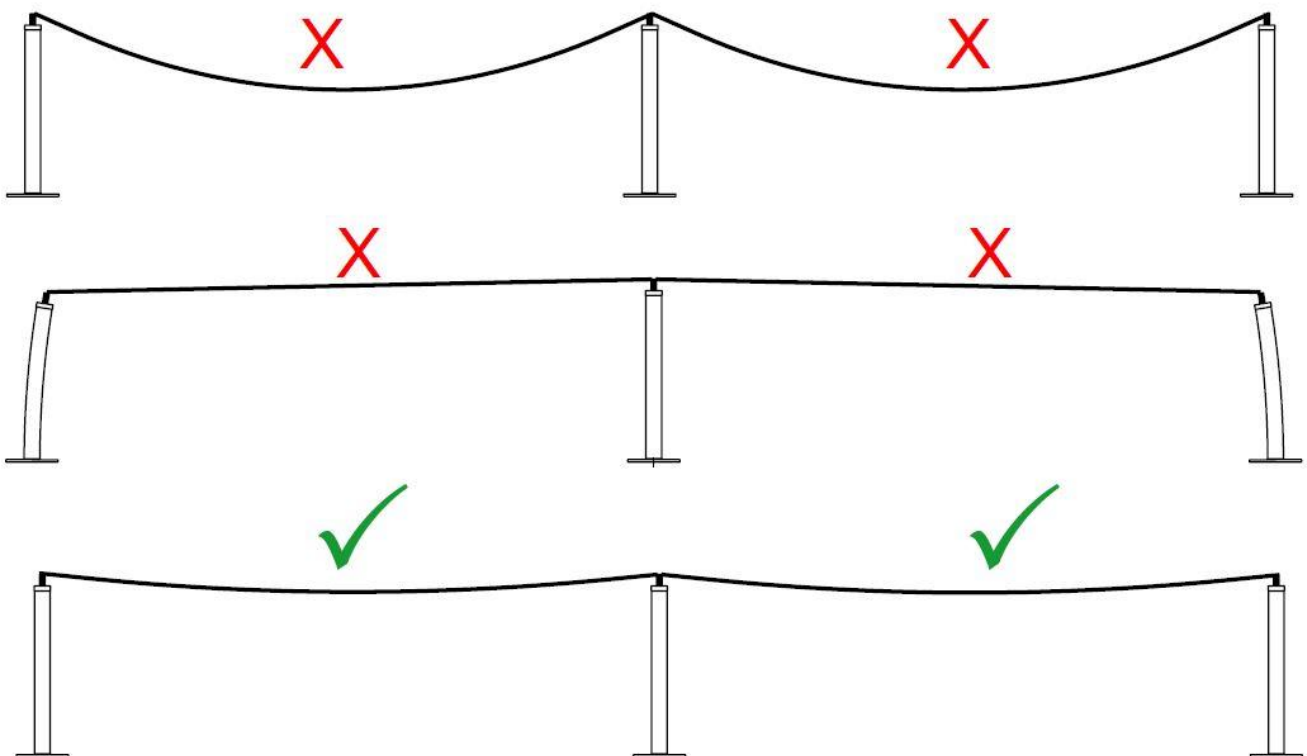
The GREENLINE cable lifeline system has been developed for securing persons and is suitable for the following fall protection systems conforming to EN 363:2019:

- Restraint system
- Fall protection system
- Rescue system

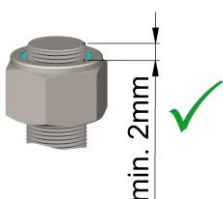
Note:

The GREENLINE cable lifeline system is not suitable for working with cable-supported access.

General installation instructions:



Optimum cable pretension between 50 – 70 kg.



All nuts should be installed with a depth stop.

2 Specifications for system versions

Specifications for system designs according to EN795

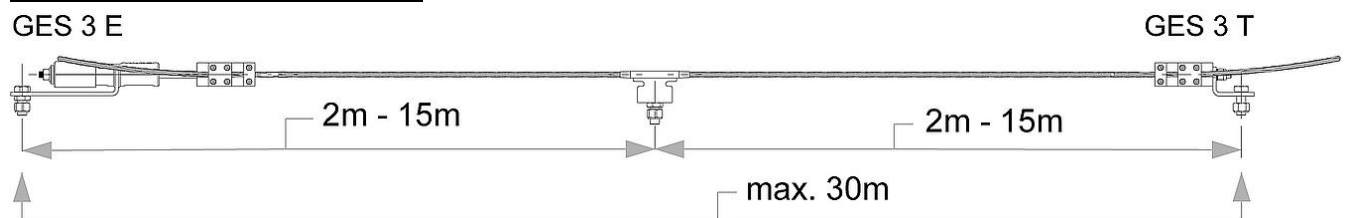
EN 795

Installation must be carried out on suitable subfloors with adequate strength.

The force that is introduced into the structure in the event of a fall when properly used at the end anchors of the anchor device can be up to 15 kN.

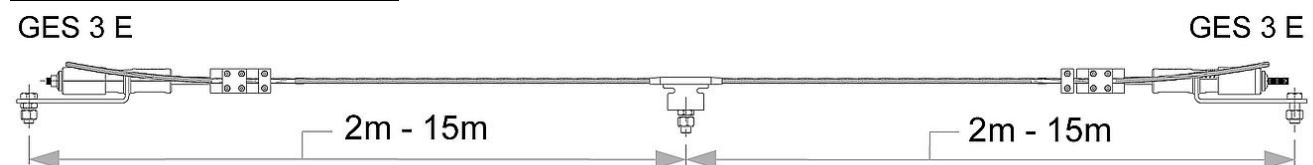
Systems up to 30 m without curve

GRÜN SYS GREENLINE GES 3 L

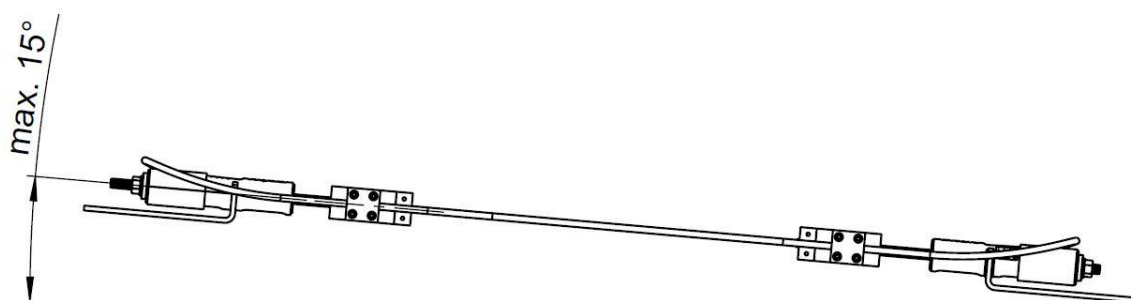


Systems with one or more curves

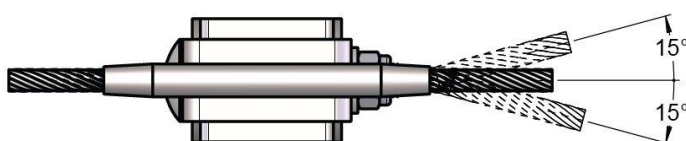
GRÜN SYS GREENLINE GES 3



The cable system angle of inclination is permitted to deviate max. 15° from the horizontal.



































The cable entry angle in system components is max. 15°.



Specifications for system designs according to EN795

EN 795

Allocation of GRÜN system supports and max. number of users according to EN 795

End lock set Subfloor type	System types		Field size according to EN 795	GRÜN recommendation: max. field size
	GES 3 L	GES 3		
Concrete				
GRÜN SYS VARIANT BD GRÜN SYS SAFEX MULTI BD Z			2 m - 15 m	10 m
GRÜN SYS VARIANT BD GRÜN SYS SAFEX MULTI 2 BD Z			2 m - 15 m	10 m
Prestressed concrete hollow core slabs				
GRÜN SYS VARIANT HD GRÜN SYS SAFEX MULTI HD Z			2 m - 15 m	10 m
Metal				
GRÜN SYS VARIANT TR E GRÜN SYS SAFEX MULTI TR Z			2 m - 15 m	10 m
GRÜN SYS VARIANT TR E GRÜN SYS SAFEX TR Z			2 m - 15 m	10 m
GRÜN SYS SDW 1 GRÜN SYS SDW 2			2 m - 15 m	7,5 m
GRÜN SDW FLEX			2 m - 15 m	10 m
GRÜN SYS I-KLEMME			2 m - 15 m	6 m
GRÜN SYS VARIANT ST GRÜN SYS SAFEX MULTI ST Z			2 m - 15 m	10 m
GRÜN SYS VARIANT KT GRÜN SYS SAFEX MULTI KT Z			2 m - 15 m	10 m
Wood				
GRÜN SYS VARIANT WOOD GRÜN SYS SAFEX WOOD			2 m - 15 m	10 m
GRÜN SYS VARIANT HO GRÜN SYS SAFEX MULTI HO Z			2 m - 15 m	10 m
GRÜN SYS VARIANT KT GRÜN SYS SAFEX MULTI KT Z			2 m - 15 m	10 m
Ballasted				
GRÜN SYS TOPGRÜN			2 m - 10 m	10 m
GRÜN SYS TOPGRÜN LIGHT			2 m - 8 m	8 m
GRÜN SYS TOPKIT			2 m - 10 m	10 m

Specifications for system designs according to DIBt



Installation options on:

Individual anchor devices installed in line with manufacturer specifications

Concrete components (C20/25 – C50/60) conforming to technical construction regulations

Steel components (\geq S235) conforming to technical construction regulations

Load effects [kN] in the substructure



On end holders



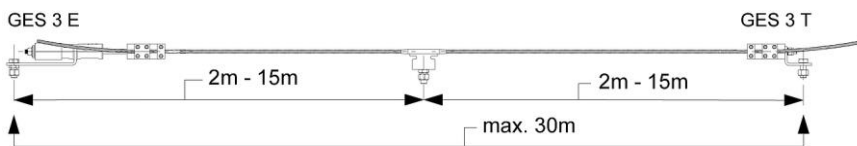
On intermediate supports



On curves

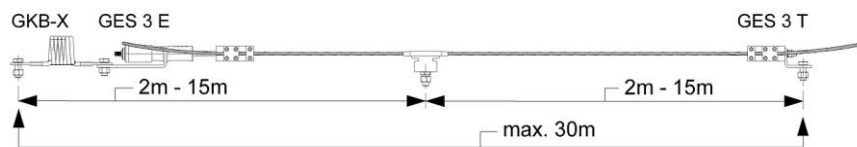
Systems types without curves

GRÜN SYS GREENLINE GES 3 L



Max. users		
1	13.7	9.0
2 - 3	14.2	10.5 / 12.0
4	15.0	13.5

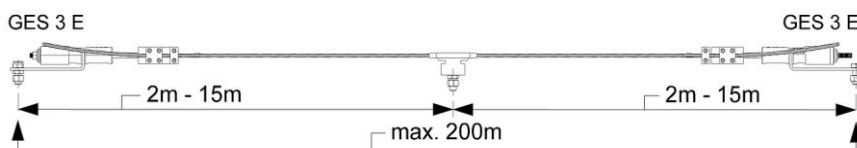
GRÜN SYS GREENLINE GES 3 L PLUS



Max. users		
1	8.2	8.2
2 - 3	10.3	10.3
4	12.2	12.2

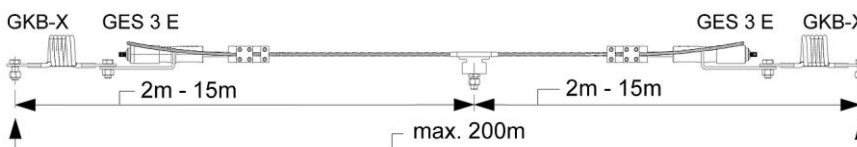
System types with max. one curve

GRÜN SYS GREENLINE GES 3



Max. users			
1	13.7	9.0	13.7
2 - 3	14.2	10.5 / 12.0	14.2
4	15.0	13.5	15.0

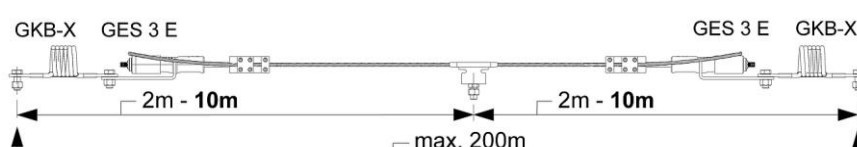
GRÜN SYS GREENLINE GES 3 PLUS



Max. users			
1	8.2	9.0	8.2
2 - 3	10.3	10.5 / 12.0	10.3
4	12.2	13.5	12.2

Systems types with multiple curves

GRÜN SYS GREENLINE GES 3 PLUS



Max. users			
1	8.2	9.0	13.0
2 - 3	10.3	10.5 / 12.0	13.0 / 16.8
4	12.2	13.5	16.8

Specifications for system designs according to DIBt



Allocation of GRÜN system supports and max. number of users according to DIBt

End lock set Subfloor type	System types without curves				Field size according to DIBt	GRÜN recommendation: max. field size
	GES 3 L	GES 3 L PLUS	GES 3	GES 3 PLUS		
Concrete ≥ C 20/25						
SYS VARIANT BD SYS SAFEX MULTI BD Z					2 m - 15 m	10 m
Prestressed concrete hollow cor slabs ≥ C45/55						
SYS VARIANT HD SYS SAFEX MULTI HD Z					2 m - 15 m	10 m
SYS VARIANT HD30 SYS SAFEX MULTI HD Z					2 m - 15 m	10 m
Trapezoidal steel profile ≥ S320GD in positive position						
SYS VARIANT TR E SYS SAFEX TR Z					2 m - 15 m	10 m

End lock set Subfloor type	System types with one curve		Field size according to DIBt	GRÜN recommendation: max. field size
	GES 3	GES 3 PLUS		
Concrete ≥ C 20/25				
SYS VARIANT BD SYS SAFEX MULTI BD Z			2 m - 15 m	10 m
Prestressed concrete hollow cor slabs ≥ C45/55				
SYS VARIANT HD SYS SAFEX MULTI HD Z			2 m - 15 m	10 m
SYS VARIANT HD30 SYS SAFEX MULTI HD Z			2 m - 15 m	10 m
Trapezoidal steel profile ≥ S320GD in positive position				
SYS VARIANT TR E SYS SAFEX TR Z			2 m - 15 m	10 m

End lock set Subfloor type	System types with several curves	Field size according to DIBt	GRÜN recommendation: max. field size
	GES 3 PLUS		
Concrete ≥ C 20/25			
SYS VARIANT BD SYS SAFEX MULTI BD Z		2 m - 10 m	10 m
Prestressed concrete hollow cor slabs ≥ C45/55			
SYS VARIANT HD SYS SAFEX MULTI HD Z		2 m - 10 m	10 m
SYS VARIANT HD30 SYS SAFEX MULTI HD Z		2 m - 10 m	10 m
Trapezoidal steel profile ≥ S320GD in positive position			
SYS VARIANT TR E SYS SAFEX TR Z		2 m - 10 m	10 m

■ Specifications for system designs according to DIBt

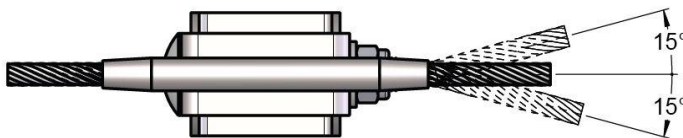


Other system specifications according to DIBt

The traversable cable system angle of inclination is permitted to deviate max. 10% from the horizontal.



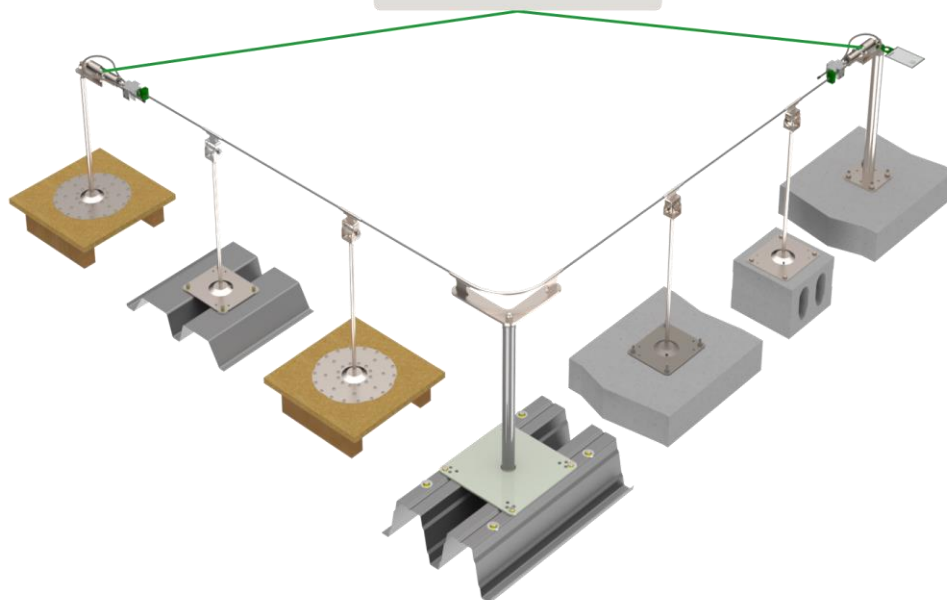
The cable entry angle in system components is max. 15°.



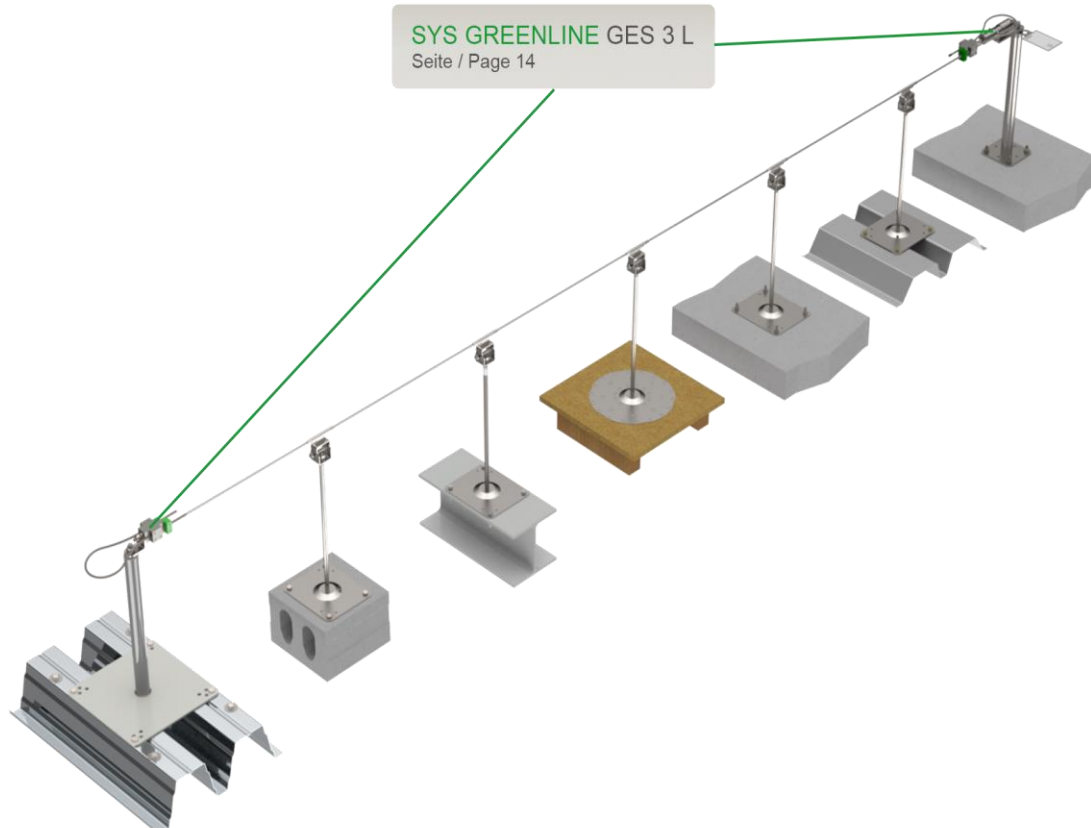
Otherwise, non-traversable intermediate holders or the GRÜN stop clamp must be used.

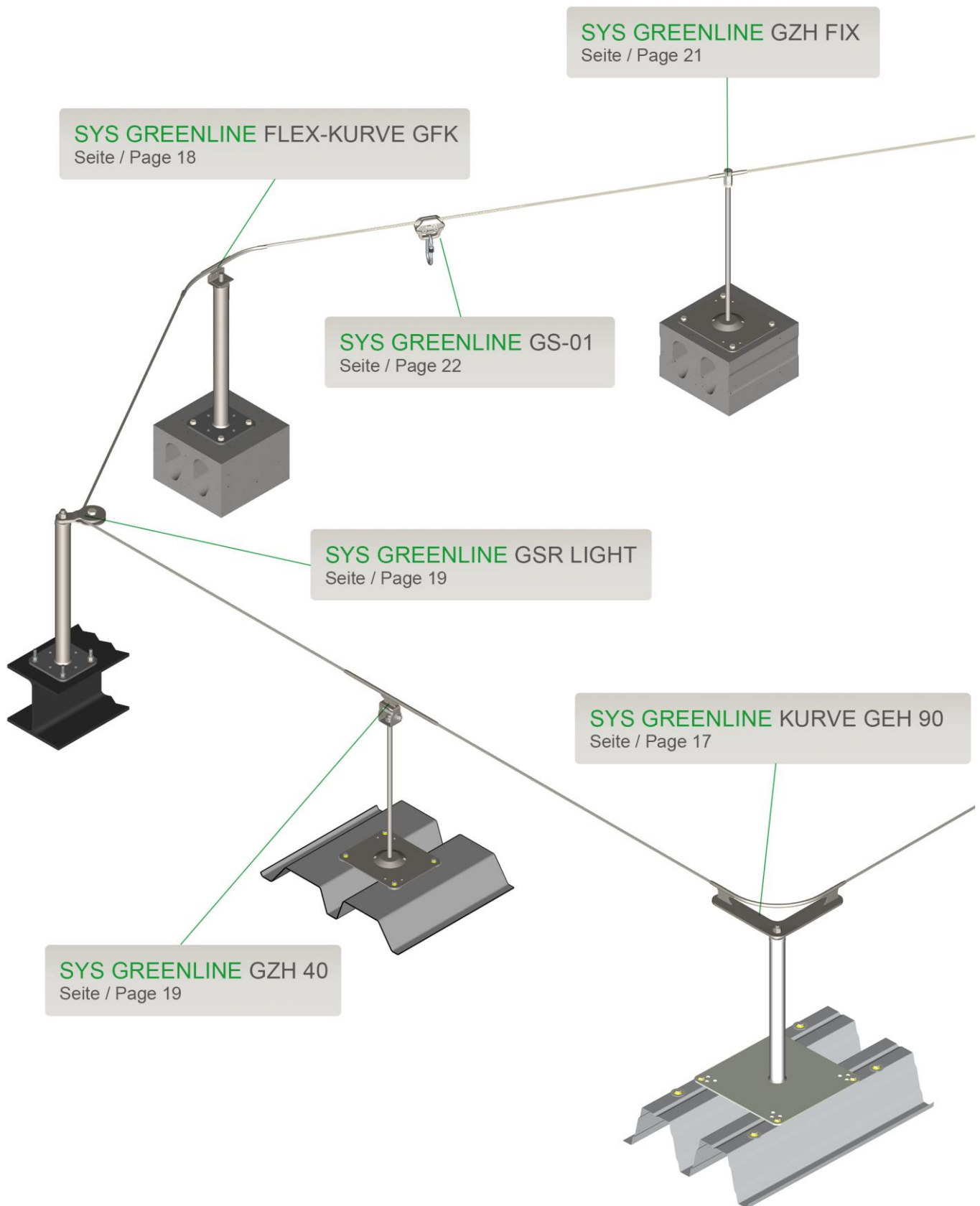
3 System components and installation GRÜN SYS GREENLINE®

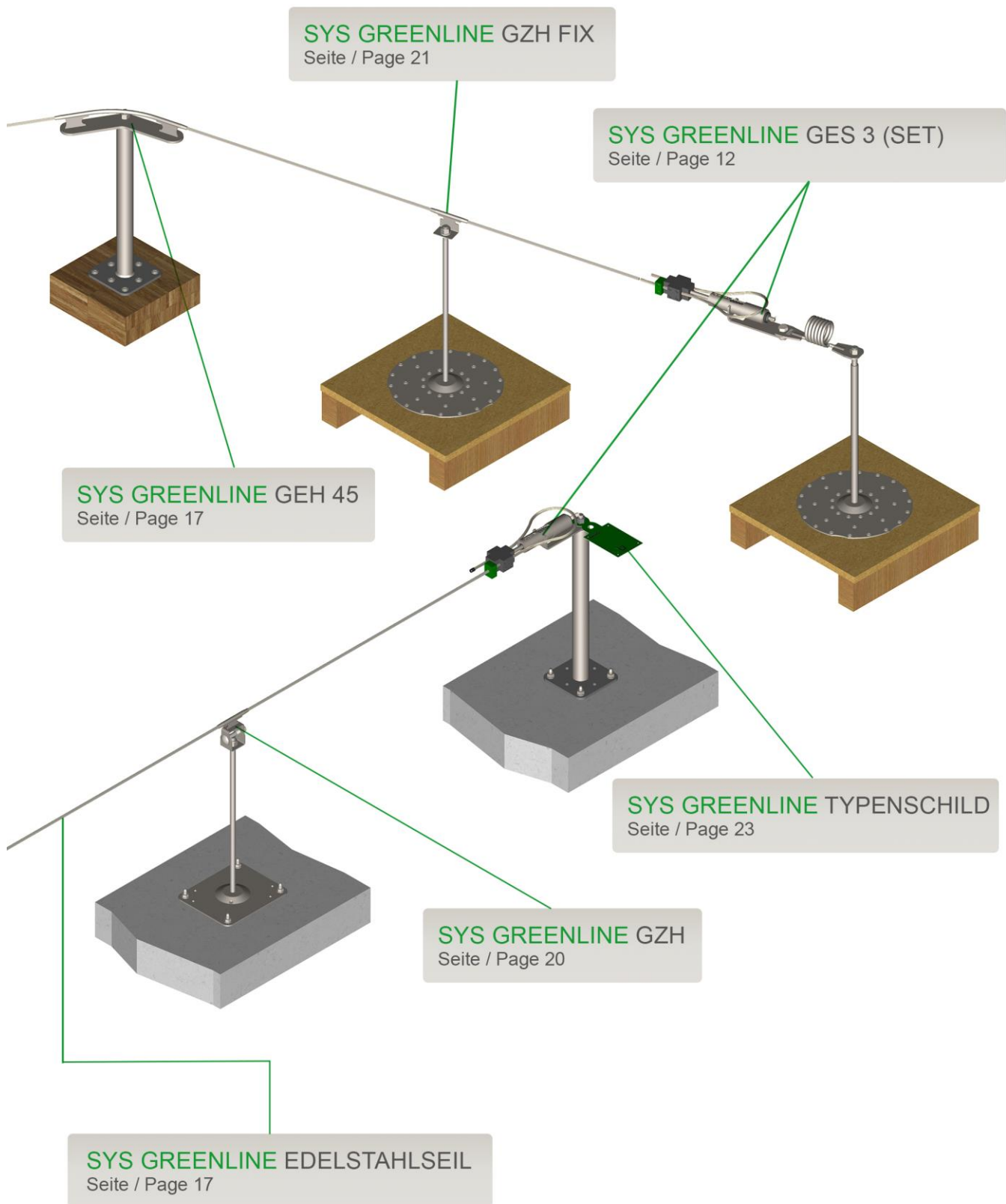
SYS GREENLINE GES 3
Seite / Page 12



SYS GREENLINE GES 3 L
Seite / Page 14



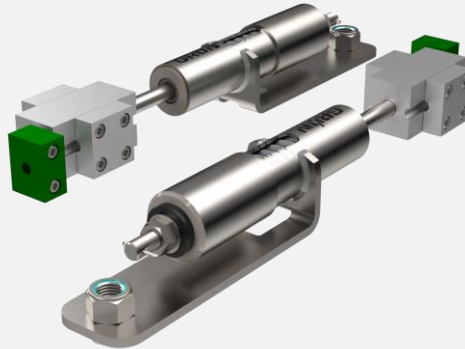




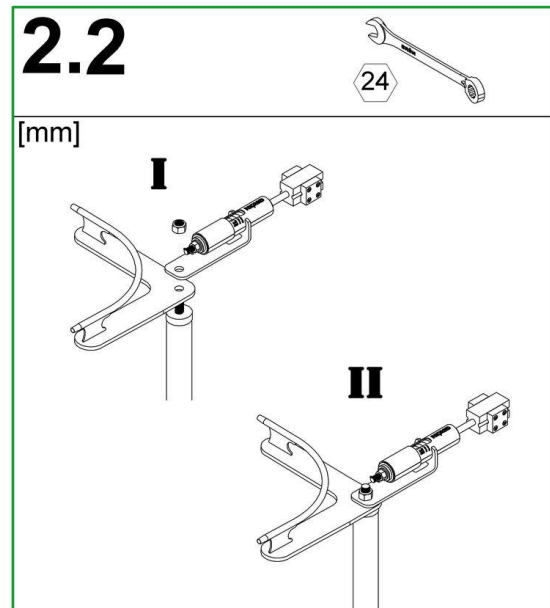
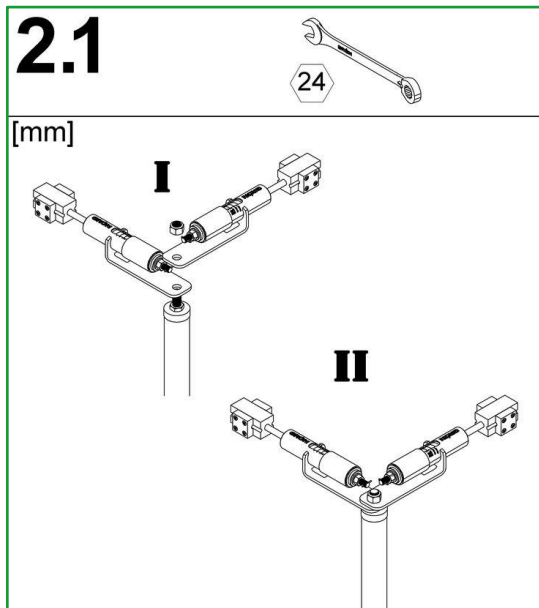
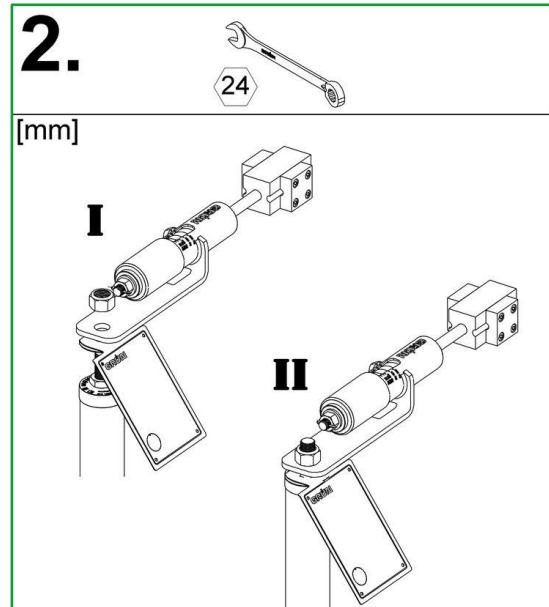
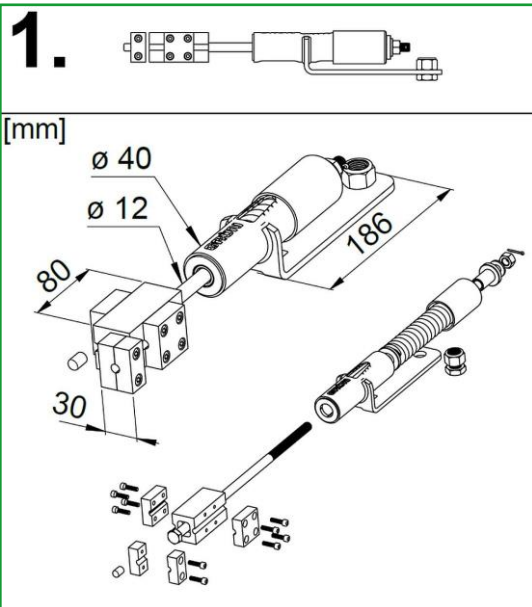
3.1 End lock sets

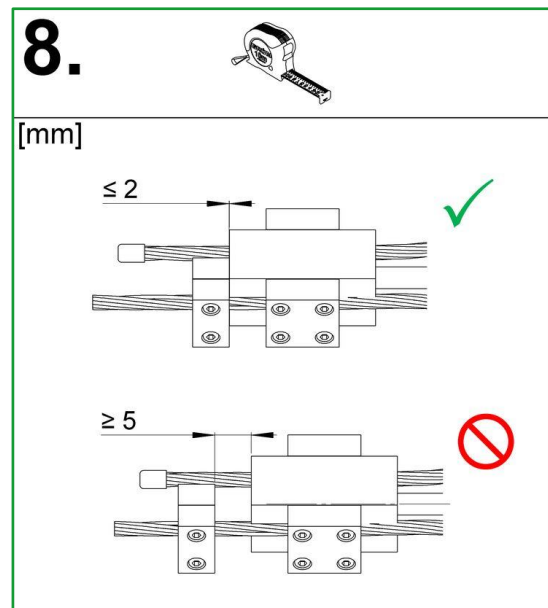
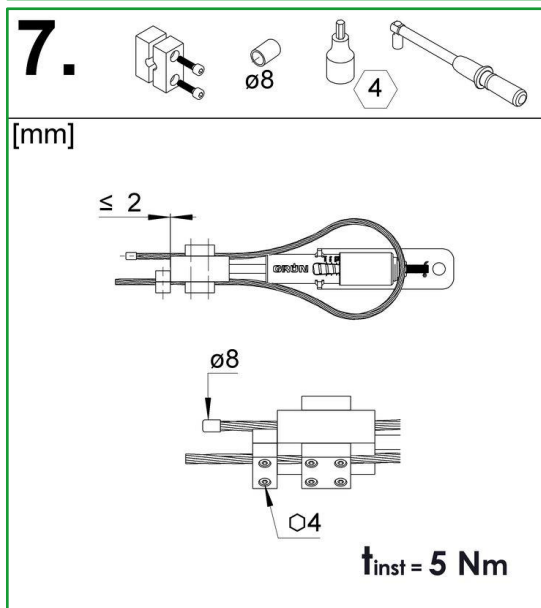
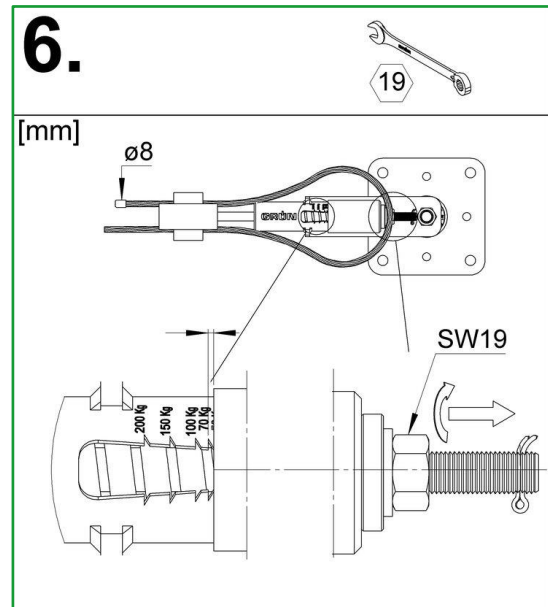
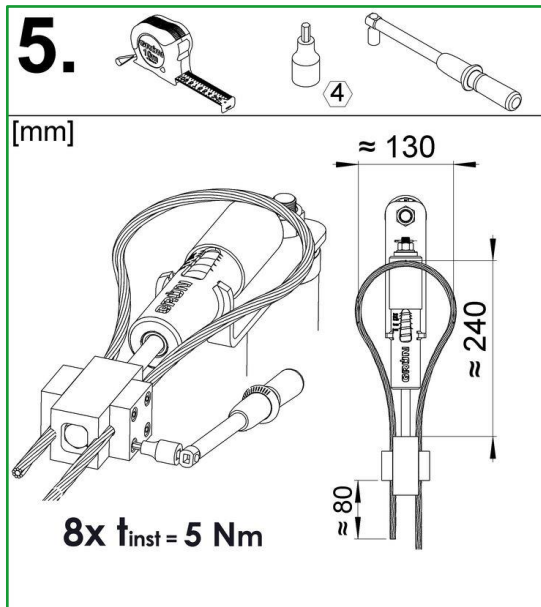
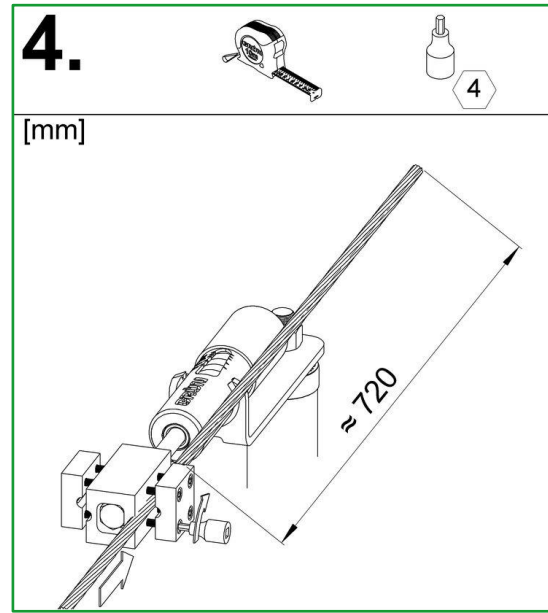
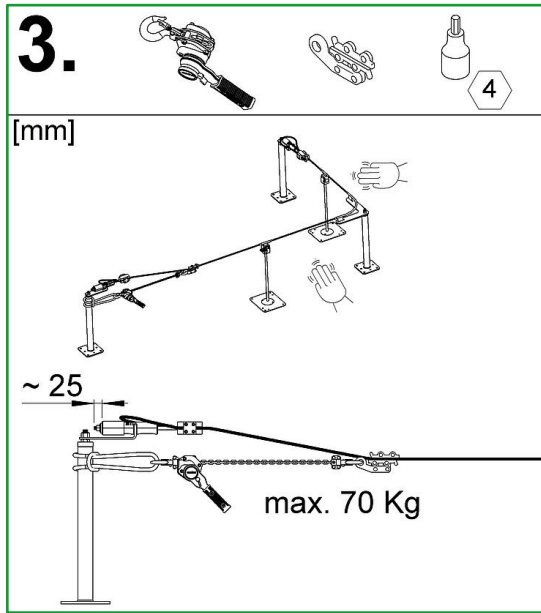
3.1.1 GRÜN SYS GREENLINE GES 3

48910300



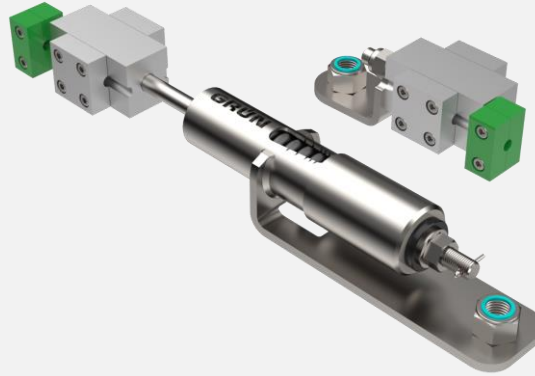
EN 795





3.1.2 GRÜN SYS GREENLINE GES 3 L

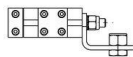
48910350



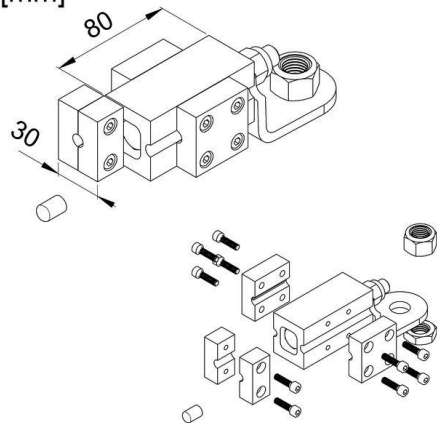
EN 795



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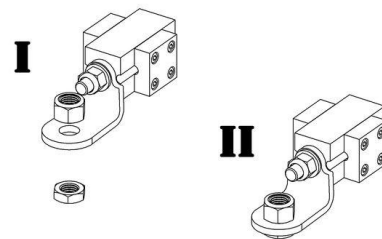
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2.



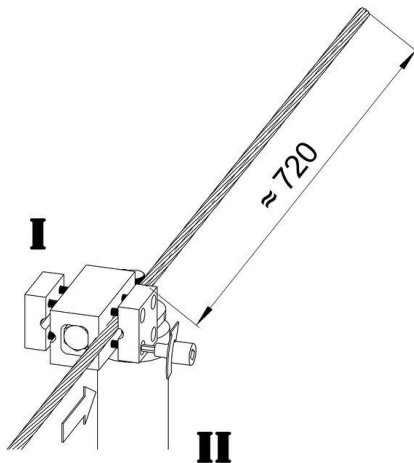
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3.



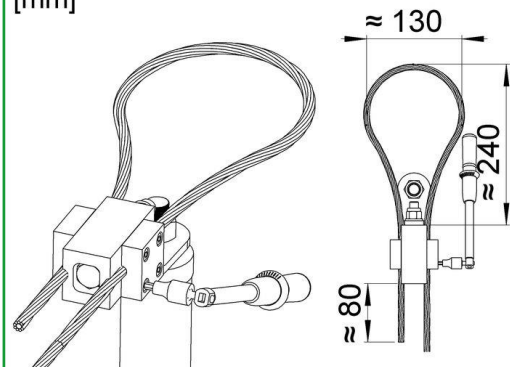
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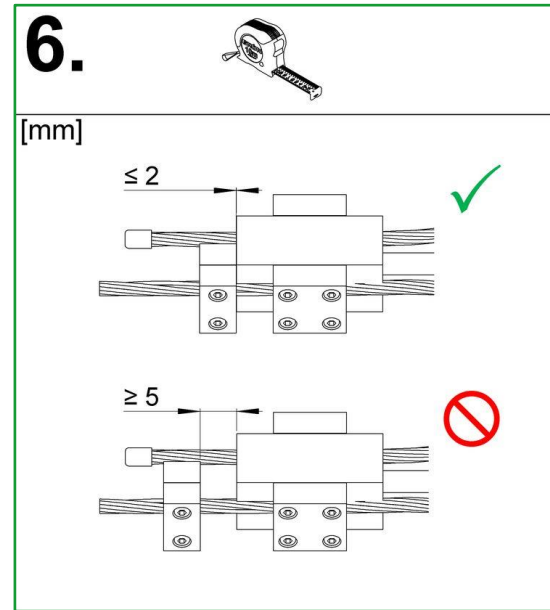
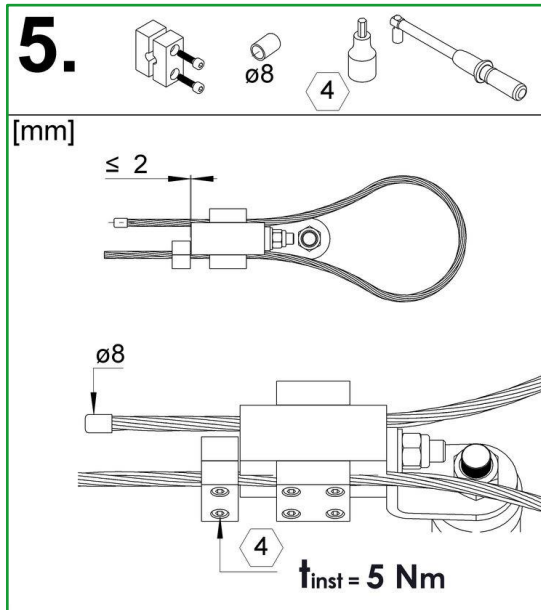
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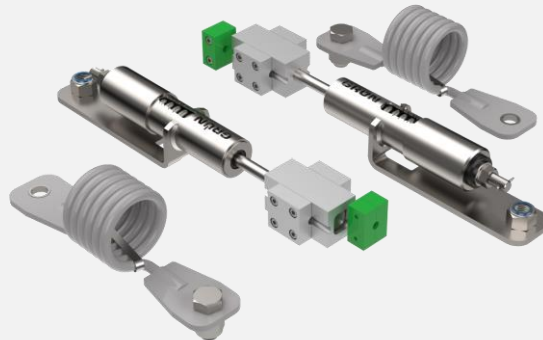


8x $t_{inst} = 5 \text{ Nm}$



3.1.3 GRÜN SYS GREENLINE GES 3 PLUS

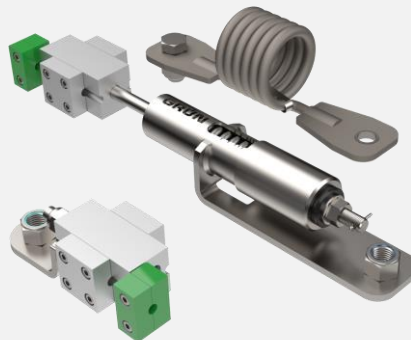
48910340



GRÜN SYS GREENLINE GES 3 and GRÜN SYS GREENLINE GKB-X

3.1.4 GRÜN SYS GREENLINE GES 3 L PLUS

48910360



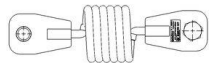
GRÜN SYS GREENLINE GES 3 L and GRÜN SYS GREENLINE GKB-X

3.1.5 GRÜN SYS GREENLINE GKB-X

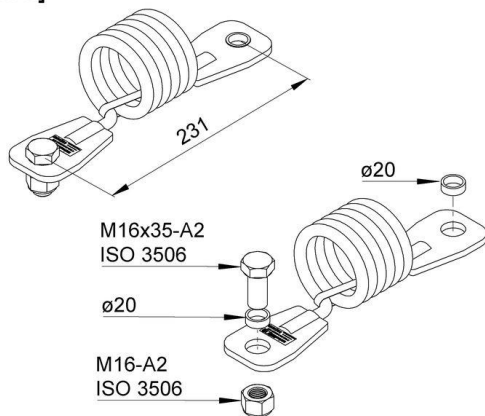
48910700



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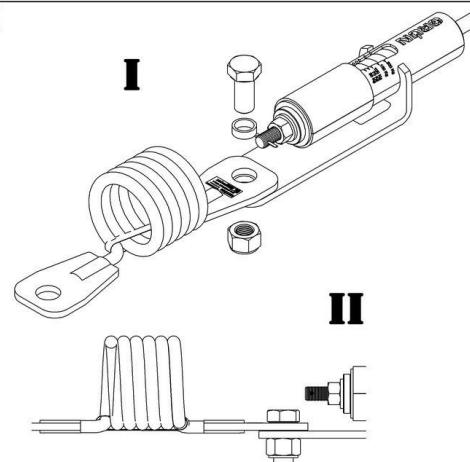
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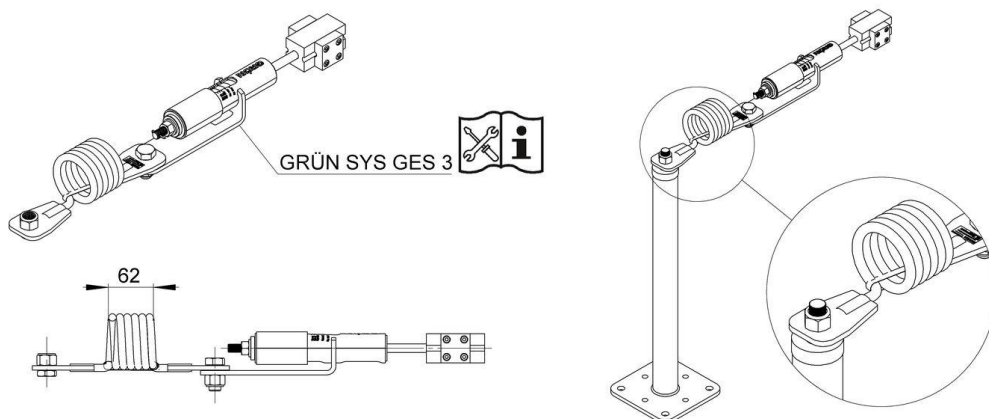


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3.

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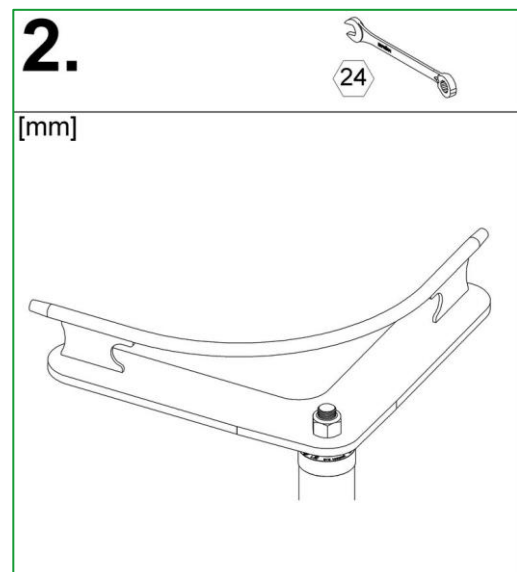
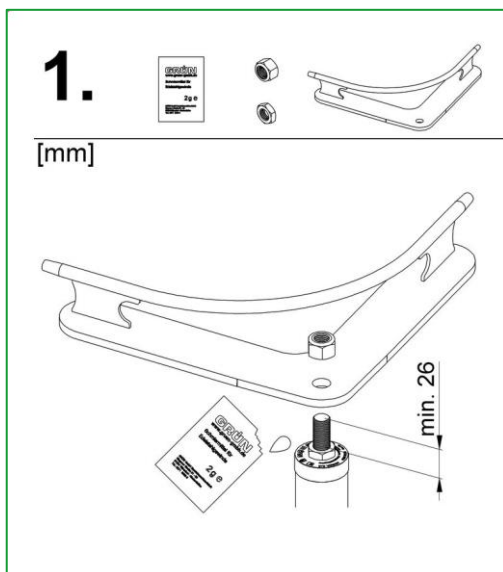
3.2 Curve elements

3.2.1 GRÜN SYS GREENLINE GEH 90



48911200		 
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3.2.2 GRÜN SYS GREENLINE GEH 45

48911300		 
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3.2.3 GRÜN SYS GREENLINE STAINLESS STEEL CABLE

47901011		 
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3.2.4 GRÜN SYS GREENLINE FLEX-KURVE GFK

48911700

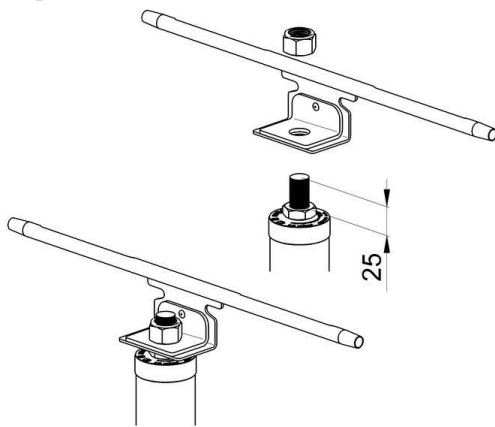


EN 795

1.

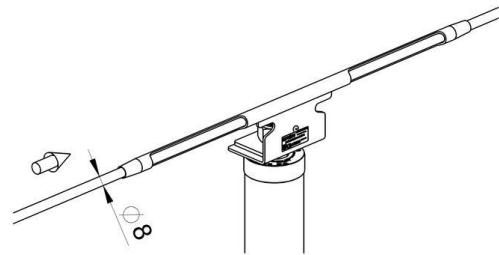


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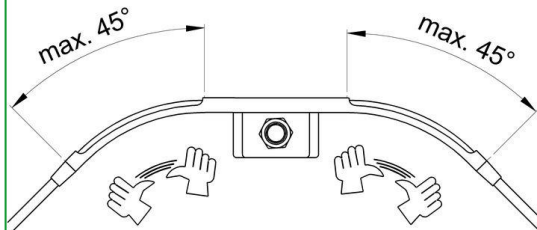
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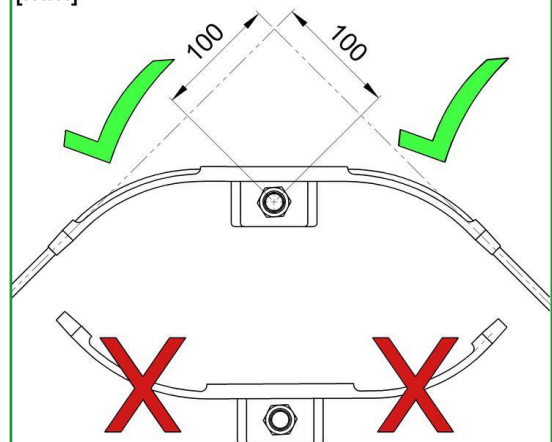
3.

[mm]



4.

[mm]

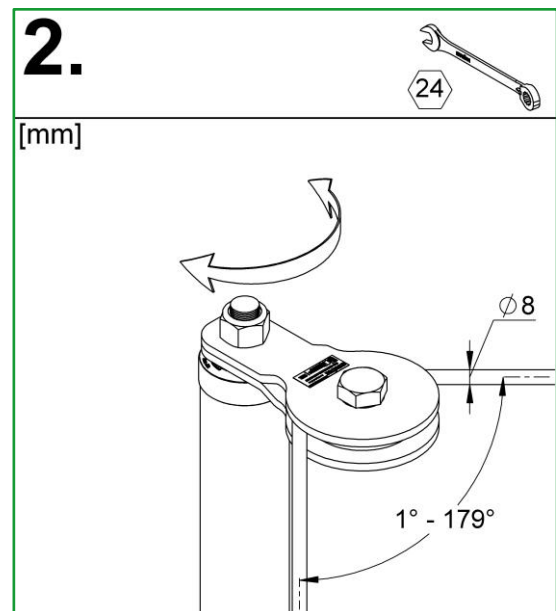
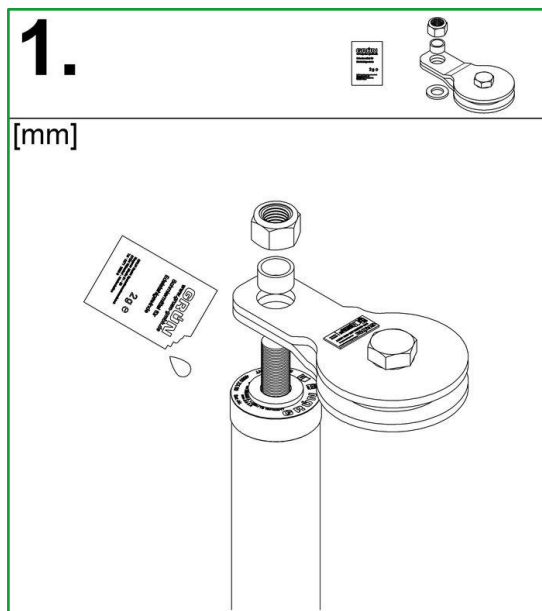


3.2.5 GRÜN SYS GREENLINE GZH 40

48911100	 <p>traversable intermediate support bendable from 0° to 40°</p>	 
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3.2.6 GRÜN SYS GREENLINE GSR LIGHT

48911600		 
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Only for assembly onto "VARIANT" supports

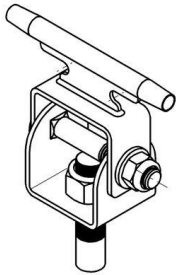
3.3 Intermediate supports

3.3.1 GRÜN SYS GREENLINE GZH

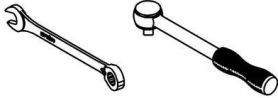

<p>48910400</p>	 <p>traversable intermediate support rotatable by 180°</p>	<p>EN 795</p> <p>DIBt</p>
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1.

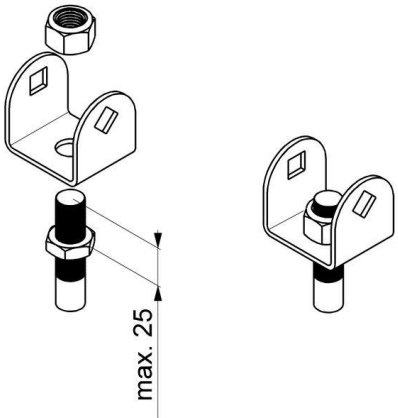
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2.





[mm]

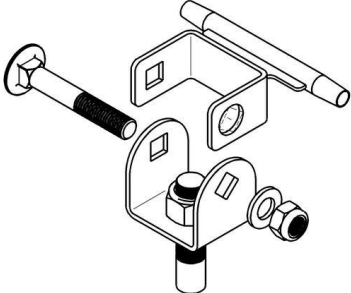
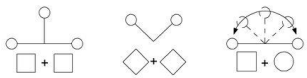


max. 25

3.

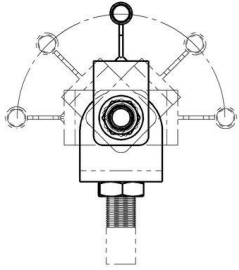


[mm]

4.

[mm]




3.3.2 GRÜN SYS GREENLINE GZH FIX

<p>48910500</p>	 <p>only on system supports</p>	  
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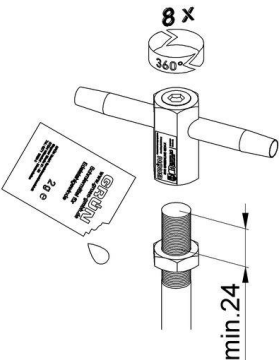
3.3.3 GRÜN SYS GREENLINE GZH-X

<p>60150500</p>	 <p>(Not suitable for anchor devices "GRÜN SDW 1 + GRÜN SDW 2")</p>	 
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1.




[mm]

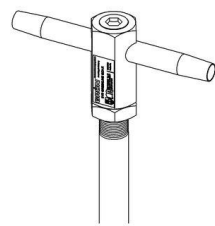


8 x
360°
min. 24

2.






[mm]



3.4 Cable sliders



The separate instructions for use for GRÜN cable sliders are to be followed.

<p>48925500</p>	<p>GRÜN SYS GREENLINE GS-01</p>	
<p>48921400</p>	<p>GRÜN SYS GREENLINE GS-02-LINEAR only overhead systems and only systems without curves</p>	
<p>Other compatible connection options</p>		
 <p>Carabiner hooks (DIN EN 362:2008 B/T/A)</p>	 <p>GRÜN SYS GREENLINE CABLE SLIDER PREMIUM</p>	 <p>GRÜN cable sliders "Greenrunner-01"</p>
<p>With non-traversable systems, for the safety of users it is necessary that the connection device is not attached in fall-risk areas, otherwise a Y-connection device is to be used.</p>		

4 GREENLINE rope deflection in case of a fall

GREENLINE fall protection systems

Theor. cable deflection of the cable systems

Product	Intermediate distance [m]	Theor. cable deflection [m]
GREENLINE GES 3 & GREENLINE GES 3 L	6	1.60
	7.5	1.80
	10	2.05
	15	2.50

The deflection may increase if the cable system is mounted on individual anchor devices with a corresponding support height.

5 System labelling / type plate (standard)

On each anchor device there is a system sign with the following information:

- Personal fall protection system conforming to EN 795:2012 Type C
- Note that the instructions for use for the anchor device are to be observed.
- Max. number of users
- Information on using a fall arrester
- Information on max. cable deflection
- Installation firm
- Date of installation
- Date of the next test (min. every 12 months)
- GRÜN cable sliders used

Note:

If the identification of the anchor device is no longer accessible/legible after installation, additional marking is recommended in the vicinity of the anchor device.



6 Certification bodies

Deutsches Institut für Bautechnik (DIBt)
Kolonnenstr. 30 B
10829 Berlin
Germany

abZ No. Z-14.9-804

DEKRA Testing and Certification GmbH
Persönliche Schutzausrüstung / Personal Protective Equipment
Dinnendahlstr. 9
44809 Bochum
Germany

No.: 0158



7 Documentation

The installer is obliged to document the installation, including photos of details that will no longer be visible.

Installation documentation and maintenance documentation form available at:
(<https://gruen-gmbh.de/de/absturzschutz/download/>)



Digital documentation with the GRÜN app possible at:
(<https://project.gruen-gmbh.de>)



MA_GREENLINE_en_24_11

GRÜN

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