

# Compact Slide CS 8 / CS 12

- Declaration of Incorporation
- Module Information
- Montage Instructions
- Maintenance Instructions



„Translation“ of the Original Montage Instructions

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These Montage instructions apply to:



Type	Order No.	Type	Order No.
CS 8/10-SD	50036720	CS 12/30-SD	50048476
CS 8/30-SD	50035820	CS 12/60-SD	50050602
CS 8/60-SD	50035829	CS 12/90-SD	50050825
CS 8/10-ED	50300525	CS 12/30-ED	50300528
CS 8/30-ED	50300526	CS 12/60-ED	50300529
CS 8/60-ED	50300527	CS 12/90-ED	50300530


Version of this documentation: CS8-CS12-OI-vers .3.8 gb. 15.04.15

Symbols:

Assembly and initial start-up must be carried out by qualified Personnel only and according to these Montage Instructions.

 <b>WARNING</b>	
	<p>Indicates a possible dangerous situation.</p> <p>Non-compliance with this information can result in death or serious personal injuries (invalidity).</p>

 <b>CAUTION</b>	
	<p>Indicates a possible dangerous situation.</p> <p>Non-compliance with this information can result in damage to property or light to medium personal injuries.</p>

<b>NOTE</b>	
	<p>Indicates general notes, useful operator tips and operating recommendations which don't affect safety and health of the personnel.</p>

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## 1.0.0 EC Declaration for Incorporation (Document original)

1.1.0 According to: **2006/42/EC**

Standard: **EN ISO 12100:2010** (German Version)

The manufacturer:

**Afag Automation AG, Fiechtenstrasse 32, CH-4950 Huttwil**

hereby declares that the incomplete machine:

**Designation:** **Compact Slide** (pneumatic)

**Type:** **CS 8 / CS 12**

Sequential series: **Nr.50xxxxxx**

- **EC Directive: 2006/42/EC**
- **Standard: EN ISO 12100:2010** (German Version)
- Safety of machinery General principles for risk assessment and risk reduction.
- The special technical documents shall be sent to a reasoned request by national authorities in printed documents or electronically (pdf).
- 

### **Applied and fulfilled essential requirements:**

- 1.1; 1.1.1; 1.1.2; 1.2.3; 1.3.3; 1.3.6; 1.3.7.1.4.1; 1.5; 1.6; 1.6.1; 1.6.2; 1.6.4; 1.7; 1.7.4; 1.7.4.2;

Who installs this incomplete machine or assemble with other machines, a risk assessment for its resulting machine which must make the provisions of the **EC directive: 2006/42 / EC.**

**Norme:** **EN ISO 12100:2010** (German Version)

Agent:

For the compilation of the technically relevant documents:

Niklaus Röthlisberger, Products Manager Afag Automation AG, CH-4950 Huttwil

Place, Date: Huttwil, 15.04.2015

Siegfried Egli

Niklaus Röthlisberger





Managing Director  
Afag Automation AG


Managin Director  
Afag Automation AG

## 2.0.0 Module Information

### 2.1.0 Transport and storage (packing and unpacking)

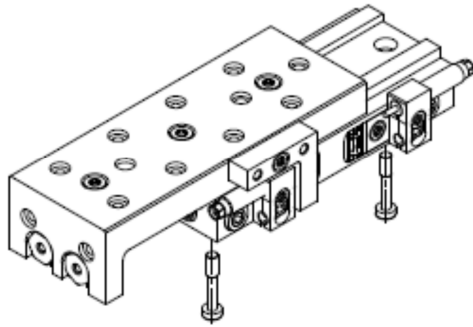
 <b>CAUTION</b>	
	<p>The CS module is packed in the original cardboard box, if the module is not handled property it may fall out of the box when unpacking and cause injuries to limbs or squeeze your fingers.</p>



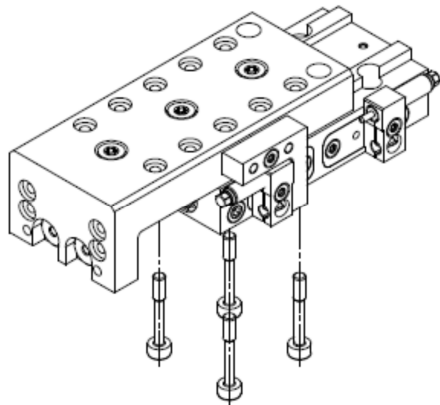
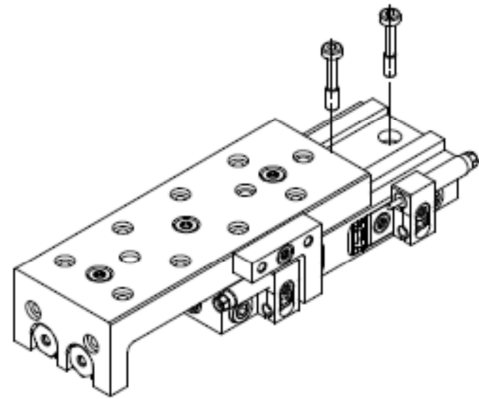
<b>NOTE</b>	
	<p><b>Consider please!</b> With each module security is settled a technical newspaper. This newspaper is to be reas busily by each person with the module.</p>

## 2.1.1 Possibilities of fastening the CS 8 / CS 12

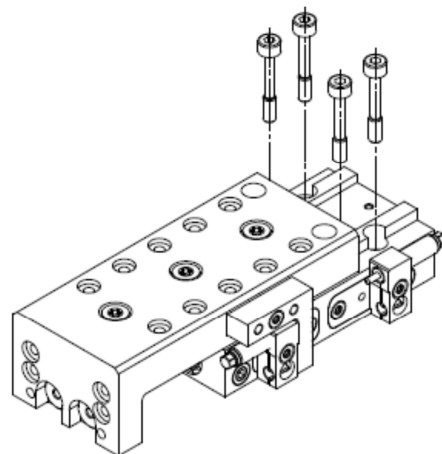
(Mounting the Module)



CS 8



CS 12



Installation of the bottom of the base body with

Installation of base body, through bolted with

(CS 8 Special screws M3x16/6)

(CS 12 Special screws M4x25/8)

### CAUTION



**When the module is installed in a vertical position, the slide should always be moved, before the installation, into the lowermost position, since masses that move suddenly can cause injury.**

## 2.1.2 Centering bushings and hole matrix

Hole matrix at the CS 8 / CS 12 Compact slide

CS 8		CS 12	
Hole matrix	20x20 mm	Hole matrix	30x30 mm
Thread / bore hole	M3	Thread/bore hole.	M4
Centering bushings (H7)	5x2.5 mm	Centering bushings (H7)	7x3 mm

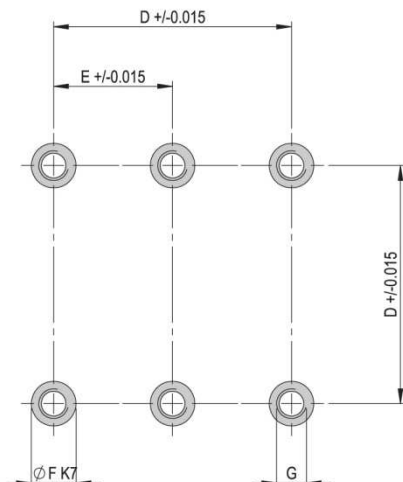
Use the centering bushings included in the scope of supply for positioning and insert these sleeves in the diagonally opposite bore holes of the mounting grid.

Modul-Zentrierung	Centrage de module	Squaring of modules				
<b>Zentrierhülse</b>	<b>Douilles de centrage</b>	<b>Centering bushings</b>	<b>4h6x2.0 mm</b>	<b>5h6x2.5 mm</b>	<b>7h6x3.0 mm</b>	<b>8h6x3.5 mm</b>
Bestellnummer	Article No.	Order No.	50332257	50035831	11016850	50263565
Mass A	Dimension A	Dimension A	4 mm	5 mm	7 mm	8 mm
Mass B	Dimension B	Dimension B	2 mm	2.5 mm	3 mm	3.5 mm
Mass C	Dimension C	Dimension C	2.6 mm	3.2 mm	4.3 mm	5.4 mm

	<b>9h6x4.0 mm</b>	<b>12h6x5.0 mm</b>	<b>15h6x5.2 mm</b>	<b>19h6x5.8 mm</b>
	11004942	50187424	—	50189497
	9 mm	12 mm	15 mm	19 mm
	4 mm	4.8 mm	5.2 mm	5.8 mm
	6.5 mm	8.5 mm	10.5 mm	13 mm

Befestigungsrastrer	Treme de fixation	Fixing grid	16x16 mm	20x20 mm	30x30 mm	38x38 mm
Mass D	Dimension D	Dimension D	16 mm	20 mm	30 mm	38 mm
Mass E	Dimension E	Dimension E	8 mm	10 mm	15 mm	19 mm
Mass F	Dimension F	Dimension F	4x1.1 mm	7x1.6 mm	7x1.6 mm	8x3.5 mm
Mass G	Dimension G	Dimension G	M2.5	M3	M4	M5



48x48 mm	60x60 mm	75x75mm	96x96 mm
48 mm	60 mm	75 mm	96 mm
24 mm	30 mm	75 mm	48 mm
9x2.1 mm	12x2.5 mm	15x2.7 mm	19x5.8 mm
M6	M8	M10	M12



### 2.1.3 Tightening torques moments for screw

The screws to be used for assembly must at least satisfy the following conditions:


Standard: VDI 2230  
 Strength: class 8.8  
 Surface: galvanized blue, oiled or greased


Thread	Tightening moments
M3	1,1 ... 1,4 Nm
M4	2,6 ... 3,3 Nm
M5	5,2 ... 6,5 Nm
M6	9,0 ... 11,3 Nm
M8	21,6 ... 27,3 Nm

### This is an incomplete machine

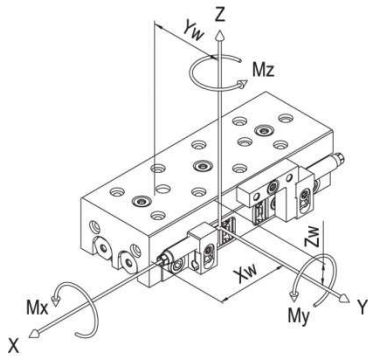
#### Assembly of the CS 8 / CS 12 Compact Slide in a system

The series of the CS module is used for the linear, smooth movement of rigidly mounted loads under the ambient and operating conditions defined for this module, see Technical data. The CS module can be installed in the horizontal or vertical position.

NOTE	
	<p>These Montage Instructions should be read carefully before carrying out any activity on or with the CS module. The CS module may only be deployed in accordance with the intended use.</p>

NOTE	
	<p><b>Safety instructions</b></p> <p>Modifications on the CS module that are not described in these Montage Instructions or have not been approved in writing by Afag Automation AG are not permitted. In case of improper changes or assembly, installation, operation and maintenance or repairs Afag rejects all liability.</p>

## 2.1.4 Slide unit load factors CS 8



Typ	Type	Type		CS 8/10	CS 8/30	CS 8/60
Max. zulässige Momente	Moments max. autorisés	Max. permitted torque	Mx My Mz	3.6 Nm 1.7 Nm 1.7 Nm	5.4 Nm 3.6 Nm 3.6 Nm	5.4 Nm 3.6 Nm 3.6 Nm
Wirkabstand Hub eingefahren	Distance active Course derrière	Active distance Behind Stroke	Xw Yw Zw	24 mm 20 mm 6.5 mm	28 mm 20 mm 6.5 mm	28 mm 20 mm 6.5 mm

### Verfahrzeit

Messung bei 6 bar

### Durée du déplacement

Pression mesurer près 6 bar

### Traversing time

Measurement by 6 bar

### Hinweis / Note:

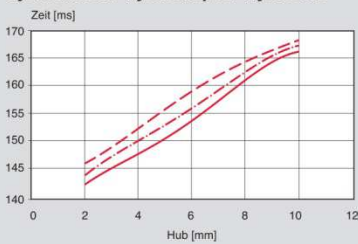
Bei Nichteinhalten der dargestellten Verfahr- und Zykluszeiten können Beschädigungen an den Modulen auftreten.

Le défaut de se conformer aux temps de déplacement et le cycle peut se produire des dommages présentés aux modules.

Failure to comply with the presented travel and cycle times damage can occur to the modules.

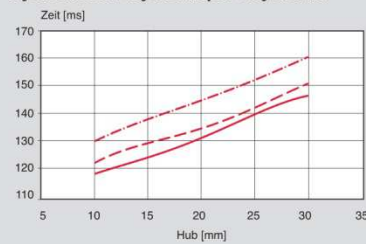
### CS 8/10 - SD

hydraulisch / hydraulique / hydraulic



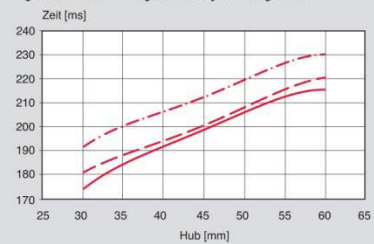
### CS 8/30 - SD

hydraulisch / hydraulique / hydraulic



### CS 8/60 - SD

hydraulisch / hydraulique / hydraulic



### Verfahrzeit

Messung bei 6 bar

### Durée du déplacement

Pression mesurer près 6 bar

### Traversing time

Measurement by 6 bar

### CS 8/10 - ED

elastomer / élastomère / elastomer



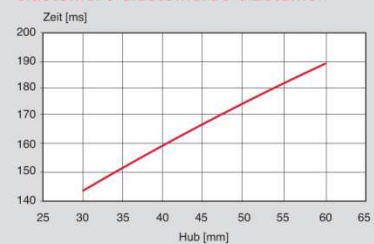
### CS 8/30 - ED

elastomer / élastomère / elastomer

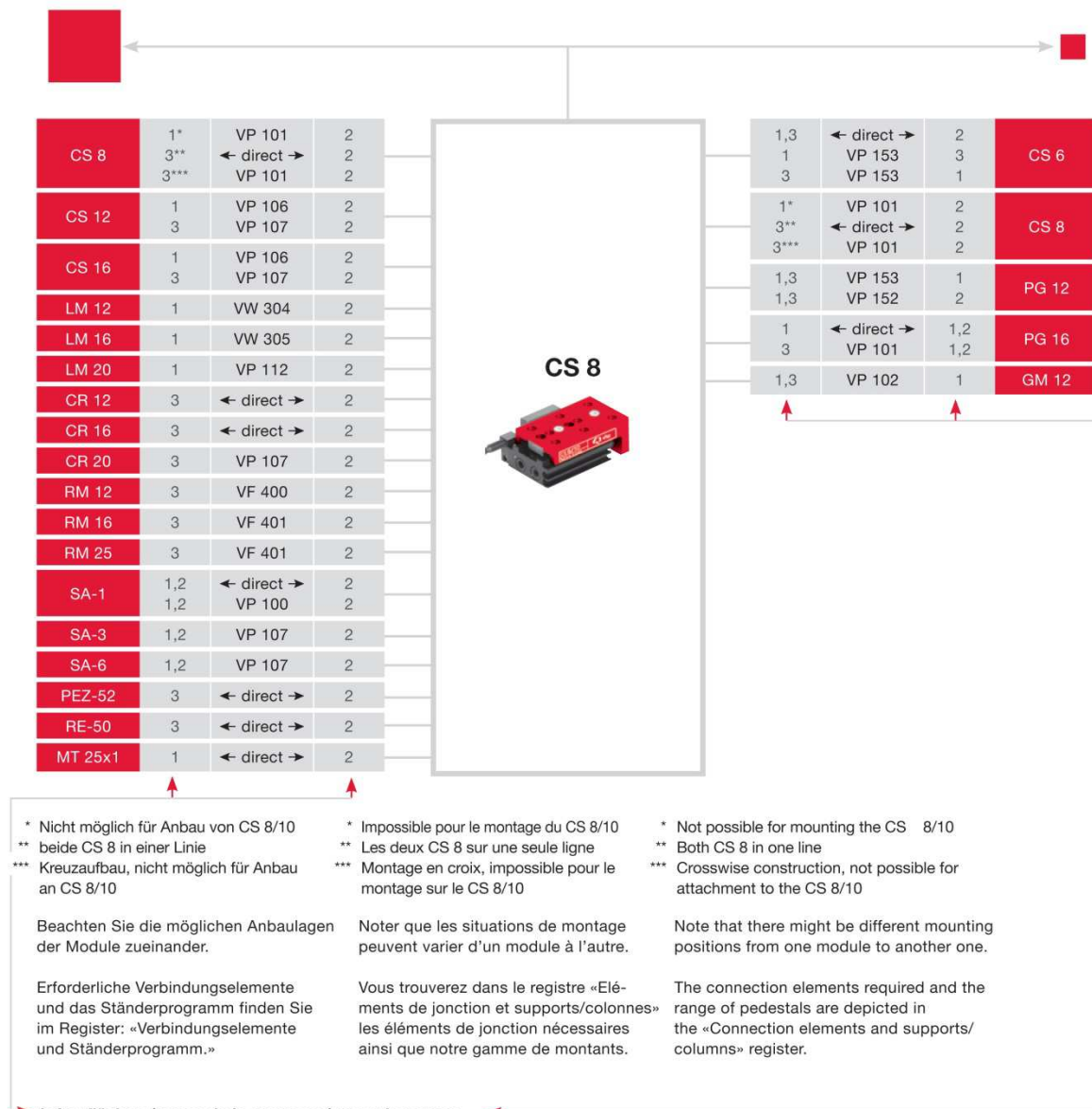


### CS 8/60 - ED

elastomer / élastomère / elastomer



## 2.1.5 Preferred combinations CS 8



## 2.1.6 Slide unit load factors CS 12

### Verfahrzeit

Messung bei 6 bar

### Durée du déplacement

Pression mesurer près 6 bar

### Traversing time

Measurement by 6 bar

### Hinweis / Note:

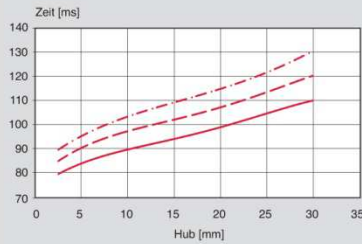
Bei Nichteinhalten der dargestellten Verfahr- und Zykluszeiten können Beschädigungen an den Modulen auftreten.

Le défaut de se conformer aux temps de déplacement et le cycle peut se produire des dommages présentés aux modules.

Failure to comply with the presented travel and cycle times damage can occur to the modules.

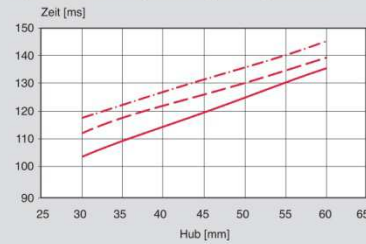
#### CS 12/30 - SD

hydraulisch / hydraulique / hydraulic



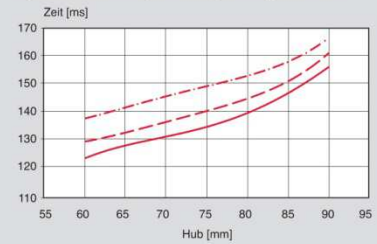
#### CS 12/60 - SD

hydraulisch / hydraulique / hydraulic



#### CS 12/90 - SD

hydraulisch / hydraulique / hydraulic



### Verfahrzeit

Messung bei 6 bar

### Durée du déplacement

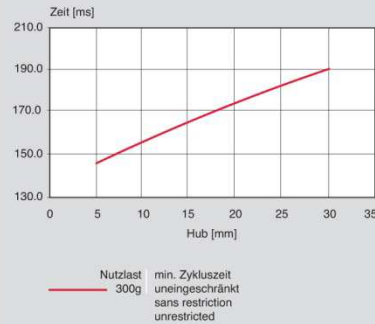
Pression mesurer près 6 bar

### Traversing time

Measurement by 6 bar

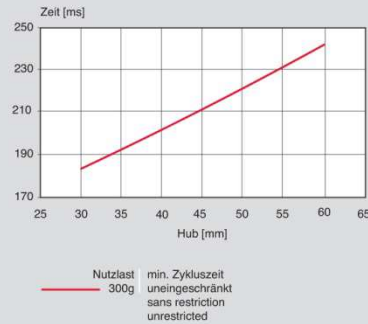
#### CS 12/30 - ED

elastomer / élastomère / elastomer



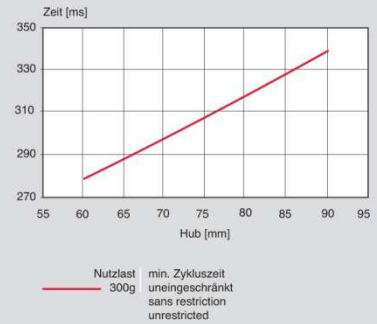
#### CS 12/60 - ED

elastomer / élastomère / elastomer

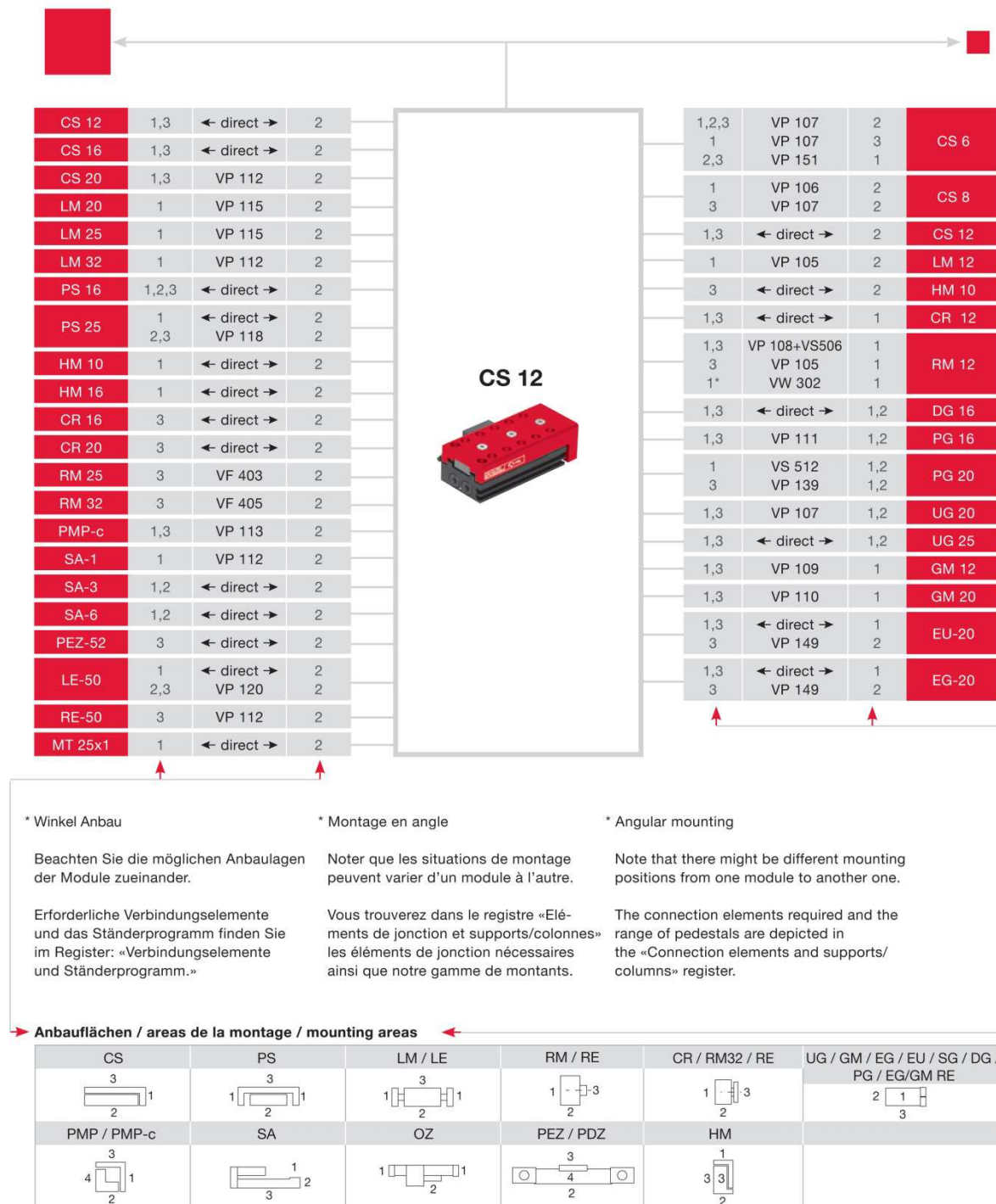


#### CS 12/90 - ED

elastomer / élastomère / elastomer



## 2.2.7 Preferred combinations CS 12



### 3.0.0 Montage Instructions

**3.1.0** The manufacturer: **Afag Automation AG**  
**Fiechtenstrasse 32**  
**CH-4950 Huttwil**

**These operating instructions apply to:**

**Producte name:** **Compact Slide** (pneumatic)  
**Types:** **CS 8/10-SD; CS 8/30-SD; CS 8/60-SD**  
**CS 8/10-ED; CS 8/30-ED; CS 8/60-ED**  
**CS 12/30-SD; CS 12/60-SD; CS 12/90-SD**  
**CS 12/30-ED; CS 12/60-ED; CS 12/90-ED**  
**Consecutive Series:** **No. 50xxxxxx**

#### **This is an incomplete machine**

Who installs this incomplete machine or assemble with other machines, a risk assessment for its resulting machine which must make the provisions of the **EC directive: 2006/42 / EC.**



**Standard: EN ISO 12100:2010** (German version)


Agent:

For the compilation of the technically relevant documents:  
Niklaus Röthlisberger, Products Manager Afag Automation AG, CH-4950 Huttwil

### 3.1.1 Symbols

Assembly and initial start-up must be carried out by qualified personnel only and according to these Instructions.

 <b>CAUTION</b>	
	<p>Indicates a possibly dangerous situation.</p> <p><b>Non-compliance with this information can result in damage to property or light to medium personal injuries.</b></p>

<b>NOTE</b>	
	<p>Indicates general notes, useful operator tips and operating recommendations which don't affect safety and health of the personnel.</p>

### 3.1.2 General description

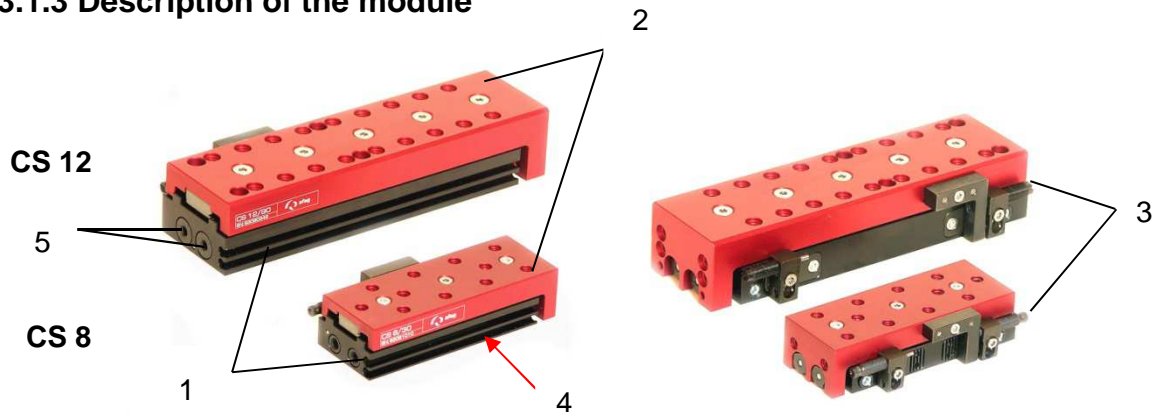
#### **This is an incomplete machine**

The series of the CS-module is used for the linear, smooth movement of rigidly mounted loads under the ambient and operating conditions defined, see Technical data.

The CS-module can be installed in the horizontal or vertical position.

Modifications on the CS-module that are not described in these Montage Instructions or have not been approved in writing by Afag Automation AG are not permitted. In case of improper changes or assembly, installation, operation, maintenance or repairs, Afag Automation AG rejects all liability.

### 3.1.3 Description of the module



- |   |           |   |   |
|---|-----------|---|---|
| 1 | Base body | 3 | Stop screw with integrated shock absorber |
| 2 | Slide     | 4 | Sensor nuts                               |
|   |           | 5 | Air connection                            |

The CS 8/12 consists of the base body (1) with pneumatic connections and cylinder and the moveably mounted slide (2).

The stop positions are set by means of a stop screw with integrated shock absorber (3). The stop positions are queried either by:

- a d 3 mm inductive switch (accessories : not included in the scope of supply), mounted under the stop screw, or,
- a proximity switch (accessories : not included in the scope of supply), fastened in the sensor groove.

The movement in the stop positions is absorbed by a shock absorber (3) or a steel stopper (accessories : not included in the scope of supply).

## ⚠ CAUTION



**The shock absorbers installed in the CS modules are precision-mechanical parts. If the fastening screw is tightened to strongly the shock absorber can be damaged.**

Torque recommended 0,63. ..1,1 Nm


### 3.1.4 Scope of Supply



Description	Description
1 <b>Module CS 8</b>	1 <b>Module CS 12</b>
2 Stop screw/shock absorber ASED M5x0.5-1	2 Stop screw/ shock absorber SED M6x0.5-1
2 Centering bushings 5x2.5 mm	2 Centering bushings 7x3 mm
2 Special screw M3x16 mm	4 Special screw M4x20 mm



### 3.1.5 Designated use

The series of the compact slides CS-Modules is used for the linear movement of rigidly mounted loads in non-explosion hazardous ambient and operating conditions that are specified for this Module; see catalogue.

NOTE	
	<p>Montage Instructions should be read carefully before carrying out any activity on or with the module.</p> <p>The module may only be deployed in accordance with the intended use.</p> <p>Modifications on the module that are not described in these Montage Instructions or have not been approved in writing by Afag are not permitted. In case of improper changes or assembly, installation, operation, maintenance or repairs, Afag rejects all liability.</p>

 CAUTION	
	<p><b>Connection of compressed air and operation of pneumatic systems may cause unpredictable movement which may result in personal injury or damage to property.</b></p>

When connecting compressed air for the first time make sure that all air chokes are closed. Ventilate the system slowly.

### 3.1.6 Warranty

The module is designed for 40 million load alternations\* under the ambient conditions and conditions of use defined for this module, see catalogue. Wearing parts (shock absorbers and stop screws) are excluded from the warranty. The warranty includes repair or replacement of faulty Afag parts.


\*whichever comes first

When repairs are carried out by the customer without prior training or instruction by Afag AG the warranty will become void. Any additional claims are excluded.

### 3.1.7 Areas of application

The CS Compact Slides are exclusively designed for the linear movement of load capacities of up to 0,3 – 0.7 – 3.0 kg (CS 8); (CS 12 to 1,2 kg), in any position on the slide and maximum 0.3-0.4 kg (CS 8); (CS 12 to 0.7 kg) at the face side of the module; the load capacities should not affect persons, property or the environment. They can also be used in combination with other modules than Pick&Place machines, the permissible load capacities should, however, not be exceeded.

**Any other use is regarded as inadequate.**

<b>NOTE</b>	
	<p>The manufacturer does not accept any liability for damage resulting from such use. The risk is that of the user alone.</p>

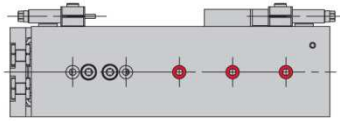
Intended use also includes paying attention to the Montage Instructions and observing the maintenance and repair instructions specified by the manufacturer.

The CS module may only be operated and serviced by correspondingly trained personnel who have also profound knowledge of the dangers.

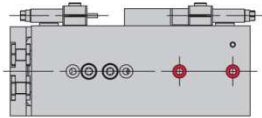
 <b>CAUTION</b>	
	<p><b>The applicable regulations for prevention of accidents and the other generally accepted safety-relevant and occupational safety and health regulations are to be followed.</b></p>

### 3.1.8 Dimension CS 8

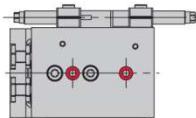
CS 8/60



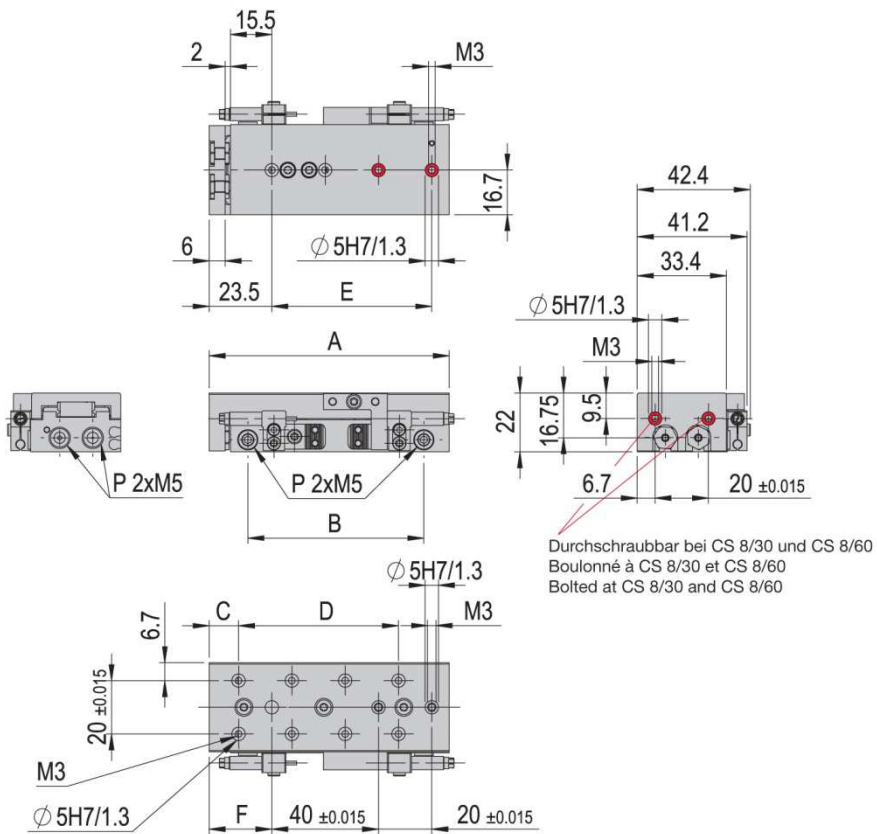
CS 8/30



CS 8/10



Bohrungen sind durchschraubbar  
Perçage avec taraudage débouchant  
Drilled holes can be tapped



Typ	Type	CS 8/10	CS 8/30	CS 8/60
Mass A	Dim. A	54 mm	90 mm	120 mm
Mass B	Dim. B	-	66 mm	96 mm
Mass C	Dim. C	7.5 mm	11 mm	8 mm
Mass D	Dim. D	2 x 20 mm	3 x 20 mm	5 x 20 mm
Mass E	Dim. E	20 mm	3 x 20 mm	4 x 20 mm
Mass F	Dim. F	-	23.5 mm	23.5 mm

### 3.1.9 Technical data CS 8

Typ**	Type**	Type**	CS 8/10-SD	CS 8/30-SD	CS 8/60-SD
Bestellnummer	Article No.	Order no.	50036720	50035820	50035829
Typ***	Type***	Type***	CS 8/10-ED	CS 8/30-ED	CS 8/60-ED
Bestellnummer	Article No.	Order no.	50300525	50300526	50300527
Hub = H	Course = H	Stroke = H	10 mm	30 mm	60 mm
Hubbegrenzung	Limitation de course	Stroke limiter	2 x 10 mm	2 x 25 mm	2 x 25 mm
Zylinder Ø	Cylindre Ø	Cylindre Ø	2 x 6 mm	2 x 6 mm	2 x 6 mm
*max. Nutzlast (Schlitten oben)	*Charge utile max. (coulisseau en haut)	*Max. ef. weight (carriage upside)	0.3 kg** 0.2 kg***	0.7 kg** 0.2 kg***	0.7 kg** 0.2 kg***
*max. Nutzlast (Stirnseite)	*Charge utile max. (front page)	*Max. ef. weight (front side)	0.3 kg** 0.2 kg***	0.4 kg** 0.2 kg***	0.4 kg** 0.2 kg***
Kolbenkraft einfahren	Force du piston entrer	Piston force retract	25 N	25 N	25 N
Kolbenkraft ausfahren	Force du piston sortir	Piston force extrend	34 N	34 N	34 N
Betriebsdruck	Pression d'alimentation	Operating pressure	6 bar +/-2	6 bar +/-2	6 bar +/-2
Luftanschluss = P	Raccords d'air = P	Air connect.P	M5	M5	M5
Luftverbrauch / Zyklus	Consomation d'air / cycle	Air consumption / cycle	0.001 NL	0.002 NL	0.005 NL
Einbaulage	Position de montage	Mounting position	✚	✚	✚
Modulgewicht	Poids du module	Weight of module	0.15 kg	0.24 kg	0.3 kg
Schlittengewicht	Masse chariot	Chariage masse	0.07 kg	0.11 kg	0.14 kg
**Stossdämpfer hydraulisch ASSD	**Amortisseurs hydraulique ASSD	**Shock absorber hydraulic ASSD	M5x0.5-2	M5x0.5-2	M5x0.5-2
***Stossdämpfer elastomer ASED	***Amortisseurs élastomère ASED	***Shock absorber elastomer ASED	M5x0.5-1	M5x0.5-1	M5x0.5-1
Maximalgeschwindigkeit	Vitesse maximum	Maximum speed	1 m/s	1 m/s	1 m/s
Minimalgeschwindigkeit	Vitesse minimum	Minimum speed	0.05 m/s	0.05 m/s	0.05 m/s
Lärmpegel bei 6 bar max. Nutzlast	Niveau de bruit à 6 bar sous charge utile max.	Decibel level, at 6 bar at max. effective weight	60 dB (A)	60 dB (A)	60 dB (A)
Befestigungsraster	Trame de fixation	Fixing grid	20 x 20 mm	20 x 20 mm	20 x 20 mm
Befestigungsgewinde	Filet de montage	Mounting thread	M3	M3	M3
Temperatur:	Température:	Temperature:			
- Lager	- de stockage	- Storage	0 °C..+50 °C	0 °C..+50 °C	0 °C..+50 °C
- Betrieb	- d'utilisation	- Operation	0 °C..+50 °C	0 °C..+50 °C	0 °C..+50 °C
- Luftfeuchtigkeit nicht kondensierend	- Humidité sans condensation	- Humidity non condensing	< 90 %	< 90 %	< 90 %
Medium: gefüllt. Druckluft	Fluide: air comprimé filtré	Medium: filtered compressed air	10...40 µm	10...40 µm	10...40 µm
Wiederholgenauigkeit	Précision de répétition	Repeating precision	+/- 0.01 mm	+/- 0.01 mm	+/- 0.01 mm

Die technischen Daten beziehen sich auf einen Nenndruck von 6 bar und Afag Standard-Testbedingungen.

\*Verfahrzeit-Diagramm beachten

#### Im Lieferumfang inbegriffen:

2 Zentrierhülsen Ø5x2.5 mm  
2 Spezialschrauben M3x16 mm

Der Compactschlitten kann mit geölter oder ölfreier Luft betrieben werden.  
Reinraumklasse:  
10 000 (Federal Standard 209E)

Les caractéristiques techniques se basent sur une pression de consigne de 6 bar et les tests standard Afag.

\*Durée du déplacement diagr. de noter

#### La livraison comprend:

2 Douilles de centrage Ø5x2.5 mm  
2 Vis spécial M3x16 mm

Pour les chariots compacts mini CS on peut utiliser aussi bien de l'air huilé que de l'air exempt d'huile.  
Classe de salle blanche:  
10 000 (Federal Standard 209E)

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.

\*Traversing time diagramm note

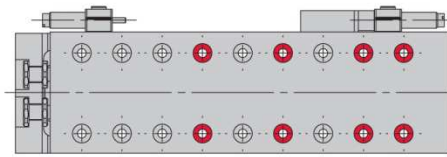
#### Includes in the delivery:

2 Centering bushings Ø5 x 2.5 mm  
2 Special screws M3 x 16 mm

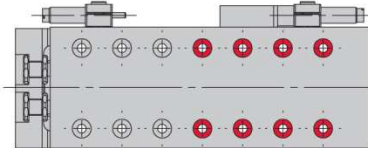
The compact slides may be operated with oil-containing or oil-free air.  
Clean room class:  
10 000 (Federal Standard 209E)

### 3.2.0 Dimension CS 12

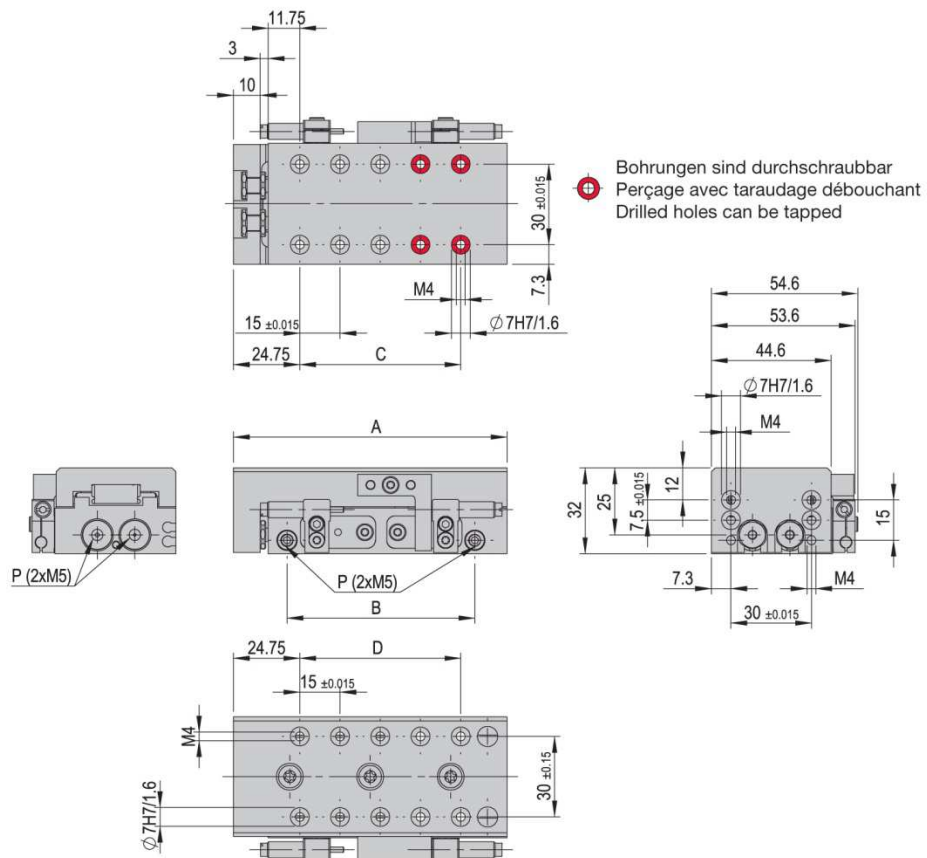
CS 12/90



CS 12/60



CS 12/30



Typ	Type	CS 12/30	CS 12/60	CS 12/90
Mass A	Dim. A	102 mm	132 mm	162 mm
Mass B	Dim. B	70 mm	100 mm	130 mm
Mass C	Dim. C	4 x 15 mm	6 x 15 mm	8 x 15 mm
Mass D	Dim. D	4 x 15 mm	6 x 15 mm	8 x 15 mm

### 3.2.1 Technical data CS 12

Typ**	Type**	Type**	CS 12/30-SD	CS 12/60-SD	CS 12/90-SD
Bestellnummer	Article No.	Order no.	50048476	50050602	50050825
Typ***	Type***	Type***	CS 12/30-ED	CS 12/60-ED	CS 12/90-ED
Bestellnummer	Article No.	Order no.	50300528	50300529	50300530
Hub = H	Course = H	Stroke = H	30 mm	60 mm	90 mm
Hubbegrenzung	Limitation de course	Stroke limiter	2 x 25 mm	2 x 25 mm	2 x 25 mm
Zylinder Ø	Cylindre Ø	Cylindre Ø	2 x 10 mm	2 x 10 mm	2 x 10 mm
*max. Nutzlast (Schlitten oben)	*Charge utile max. (coulisseau en haut)	*Max. ef. weight (carriage upside)	1.2 kg** 0.3 kg***	1.2 kg** 0.3 kg***	1.2 kg** 0.3 kg***
*max. Nutzlast (Stirnseite)	*Charge utile max. (front page)	*Max. ef. weight (front side)	0.7 kg** 0.3 kg***	0.7 kg** 0.3 kg***	0.7 kg** 0.3 kg***
Kolbenkraft einfahren Kolbenkraft ausfahren	Force du piston entrer Force du piston sortir	Piston force retract Piston force extrend	71 N 94 N	71 N 94 N	71 N 94 N
Betriebsdruck Luftanschluss = P Luftverbrauch / Zyklus	Pression d'alimentation Raccords d'air = P Consomation d'air / cycle	Operating pressure Air connect.P Air consumption / cycle	6 bar +/-2 M5 0.002 NL	6 bar +/-2 M5 0.005 NL	6 bar +/-2 M5 0.005 NL
Einbaulage	Position de montage	Mounting position	✚	✚	✚
Modulgewicht	Poids du module	Weight of module	0.5 kg	0.61 kg	0.73 kg
Maximalgeschwindigkeit Minimalgeschwindigkeit	Vitesse maximum Vitesse minimum	Maximum speed Minimum speed	1 m/s 0.02 m/s	1 m/s 0.02 m/s	1 m/s 0.02 m/s
Schlittengewicht	Masse chariot	Chariage masse	0.24 kg	0.3 kg	0.36 kg
**Stossdämpfer hydraulisch ASSD	**Amortisseurs hydraulique ASSD	**Shock absorber hydraulic ASSD	M6x0.5-1	M6x0.5-1	M6x0.5-1
***Stossdämpfer elastomer ASED	***Amortisseurs élastomère ASED	***Shock absorber elastomer ASED	M6x0.5-1	M6x0.5-1	M6x0.5-1
Befestigungsrastrer Befestigungsgewinde	Trame de fixation Filet de montage	Fixing grid Mounting thread	30 x 30 mm M4	30 x 30 mm M4	30 x 30 mm M4
Temperatur: - Lager - Betrieb - Luftfeuchtigkeit nicht kondensierend	Température: - de stockage - d'utilisation - Humidité sans condensation	Temperature: - Storage - Operation - Humidity non condensing	0 °C..+50 °C 0 °C..+50 °C < 90 %	0 °C..+50 °C 0 °C..+50 °C < 90 %	0 °C..+50 °C 0 °C..+50 °C < 90 %
Medium: gefüllt. Druckluft	Fluide: air comprimé filtré	Medium: filtered compressed air	10...40 µm	10...40 µm	10...40 µm
Wiederholgenauigkeit	Précision de répétition	Repeating precision	+/- 0.01 mm	+/- 0.01 mm	+/- 0.01 mm

Die technischen Daten beziehen sich auf einen Nennndruck von 6 bar und Afag Standard-Testbedingungen.

Les caractéristiques techniques se basent sur une pression de consigne de 6 bar et les tests standard Afag.

The technical data refer to a nominal pressure of 6 bar under Afag standard test conditions.

\*Verfahrzeit-Diagramm beachten

\*Durée du déplacement diagr. de noter

\*Traversing time diagramm note

**Im Lieferumfang inbegriffen:**

2 Zentrierhülsen Ø7 x3 mm  
4 Spezialschrauben M4 x20/8 mm

**La livraison comprend:**

2 Douilles de centrage Ø7 x3 mm  
4 Vis spécial M4 x20/8 mm

**Includes in the delivery:**

2 Centering bushings Ø7 x3 mm  
4 Special screws M4 x20/8 mm

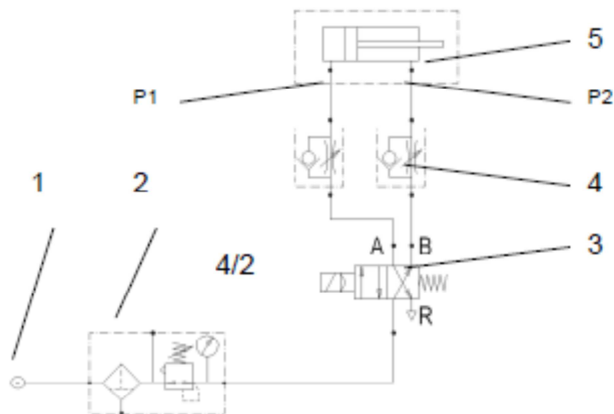
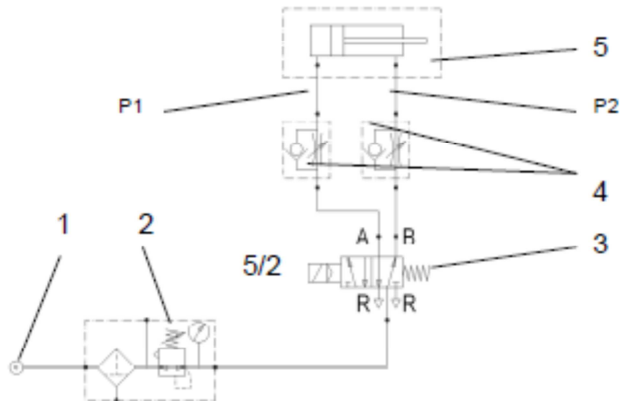
Der Compactschlitten kann mit geölter oder ölfreier Luft betrieben werden.  
Reinraumklasse:  
10 000 (Federal Standard 209E)

Pour les chariots compactes mini CS on peut utiliser aussi bien de l'air huilé que de l'air exempt d'huile.  
Classe de salle blanche:  
10 000 (Federal Standard 209E)

The compact slides may be operated with oil-containing or oil-free air.  
Clean room class:  
10 000 (Federal Standard 209E)

### 3.2.2 Pneumatic connection

The shock absorber is located at the side of the base body of the CS 8/30 / CS 8/60 /CS 12/30 / CS 12/60 / CS 12/90 Two pneumatic connections (M5), are on the rear.. The CS 8/10 only has 2 air connections on the rear. Pneumatic connections that are not used must be closed airtight with the locking screws included in the scope of supply.



- |   |                                |    |                           |
|---|--------------------------------|----|---------------------------|
| 1 | Compressed air connection      | 4  | One-way restrictor        |
| 2 | Maintenance unit               | 5  | Compact slide CS 8 / CS12 |
| 3 | Directional valve 5/2 standard | P1 | Air connection module     |
|   |                                | P2 |                           |

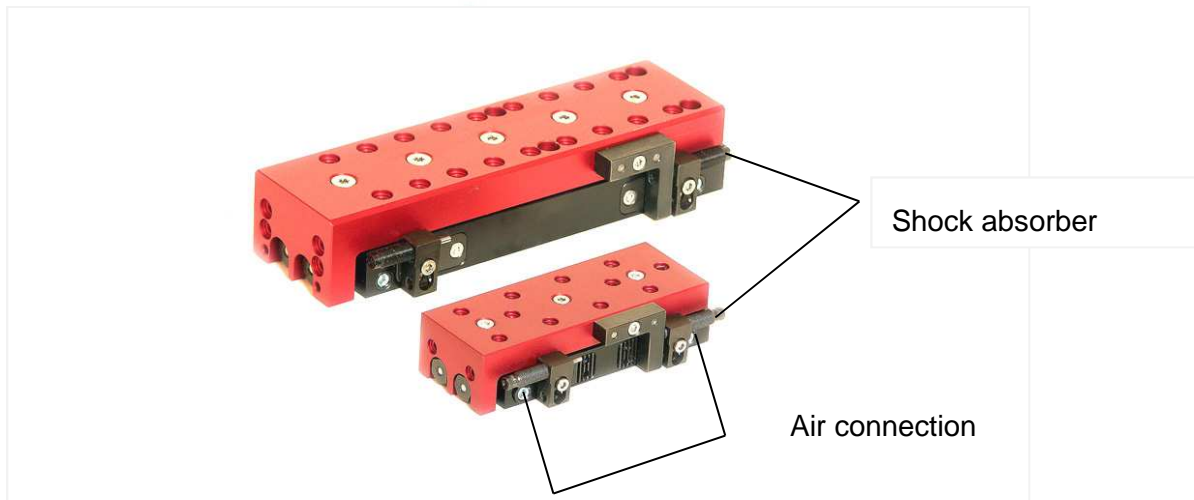
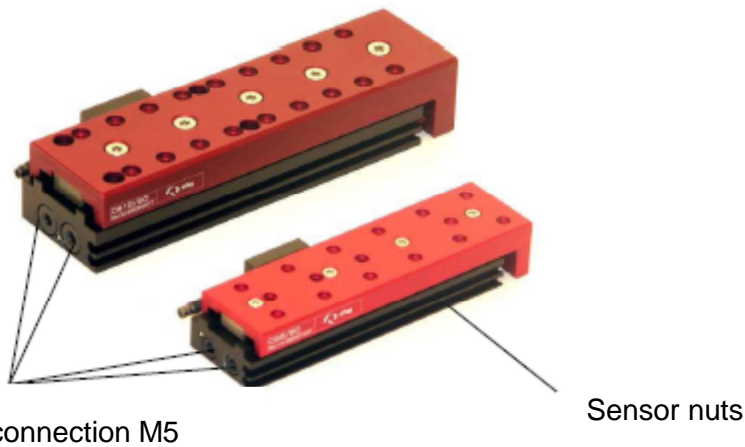
## NOTE



**Minimale compressed air quality according to ISO 8573-1; 2010 (7-4-4)**

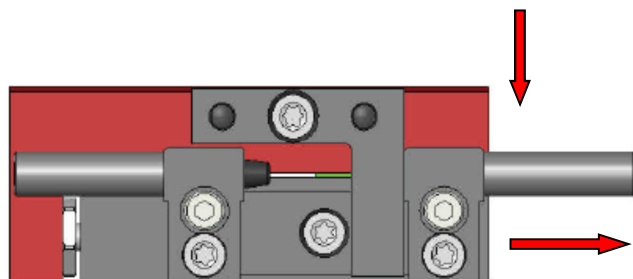
### 3.2.3 Preparation for start-up

If they put before the introduction only shock absorber, so that slide is absorbed in position.




<b>⚠ CAUTION</b>	
	<b>The CS module must not be operated without shock absorbers installed as it may be damaged due to missing damping.</b>

Be observed when CS 8 / 10 must be that the new elastomer amortisseurs faces the rear.









### 3.2.4 Notes on elastomer shock absorbers


NOTE	
	<p>Elastomer shock absorbers are actually a spring element, i.e. the holding force of the carriage is more or less reduced in the end position as compared with hydraulic dampers and depending on the setting of the absorber stroke.</p>

#### CS 8

 CAUTION	
	<p>The elastomer shock absorber may be operated with a maximum useful load of 0.2 kg on the CS 8 but permits considerably reduced cycle times than hydraulic shock absorbers.</p>

#### CS 12

 CAUTION	
	<p>The elastomer shock absorber on the CS 12 was tested with a useful load of 0.3 kg in throttled operation. This allows considerably reduced cycle times to be reached than with hydraulic shock absorbers due to obsolete pause times.  <b>Please note:</b>  <u>Unlike the CS 8 unthrottled operation is not permitted for the CS 12 with elastomer shock absorbers.</u></p>

NOTE	
	<p>Exceeding the indicated useful loads will lead to damage of the respective Compact slide.            For proper approach of the end positions an exhaust air throttle must be installed in order to set the stroke movement. If the indicated travel times are not kept the slide may be damaged.</p>

#### Technical data of the elastomer shock absorbers:

Type	Max. stroke H /	Max. power consumption -stroke	/	Recom. drive force Fa
ASED m5x0.5-1 (CS 8)	2.8 mm	0.02 J		30 N
ASED M6x0.5-1 (CS 12)	3.1 mm	0.03 J		40 N

### 3.2.5 Installation of the sensors

Clamping proximity switches are used to query the CS stop positions.

Polling of the stop positions is monitored by an LED on the initiator. If the LED switch status does not change during inquiry of the stop positions the sensor is faulty and must be replaced.

<b>CAUTION</b>	
	<b>The CS-module with proximity switch and initiators must not be used in an explosion-hazardous area.</b>

<b>NOTE</b>	
	Initiators and proximity switches are not included in the scope of supply (please see “Accessories” in the Technical Catalogue). Only the specified proximity switches and initiators are to be used.

### 3.2.6 Accessories

#### INI c10x19.5-Em-PNP-NO-M8x1

Näherungsschalter PNP  
(SCHLIESSER)

Bestellnummer

Proxim. interrupteur PNP  
(FERMETURE)

Article No.

Proximity switch PNP  
(CLOSING)

Order No.

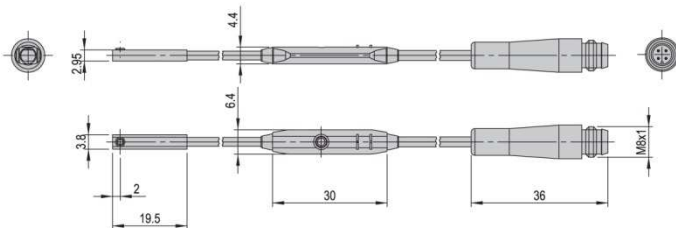
50313987

Betriebsspannung

Tension d'emploi

Normal voltage

10 - 30 VDC



Einsetzbar bei / Poser près / Insert prep:  
DG 16, HM 10, HM 16, UG 20, UG 25  
(CS 8, CS 12, CS 16)

Magnetischer Zylindersensor zum einfachen Teachen von 2 Abfragepositionen.  
Capteur magnétique de vérin aux fins d'un apprentissage facile de 2 positions d'interrogation.  
Magnetic cylinder sensor for simple teaching of 2 query positions.

#### INI 6.3x4.7x26.3-Em-PNP-NO-M8x1

Initiator zu Zwischenposition

Bestellnummer

Interrupteur à pos. intermédiaire

Article No.

Initiator prep intermediate pos.

Order No.

11010759

Betriebsspannung

Tension d'emploi

Normal voltage

10 - 30 VDC

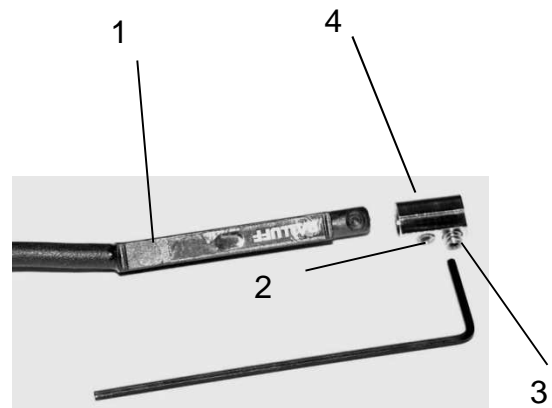


Einsetzbar bei / Poser près / Insert prep:  
ZA-PS 16, ZA-PS 25, ZA-PS 32, (ZA axial)

Magnetic cylinder sensor for simple teaching of 2 query positions

### 3.2.7 Fitting the proximity switch in the module grooves

There are two C-grooves for the proximity switches on the right-hand side of the CS module. These proximity switches are used to query the stop positions.





- |   |  |   |  |
|---|--|---|--|
| 1 | Proximity switch   | 3 | Screw for fastening the clamping piece in the groove |
| 2 | Screw for fastening the proximity switch in the clamping piece | 4 | Clamping piece                                       |

#### Fitting the proximity switch

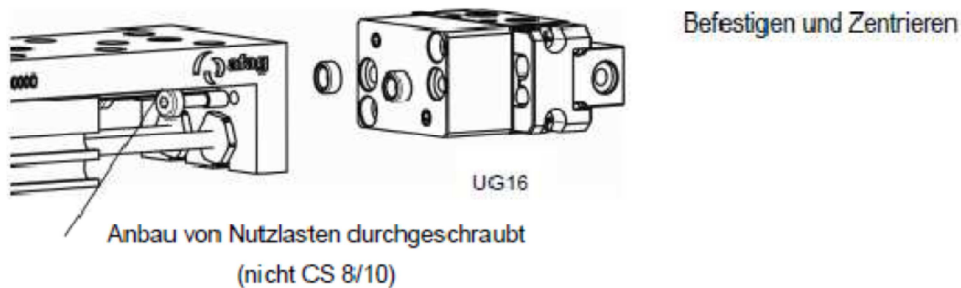
1. Insert the proximity switch (1) with clamping piece in the C-grooves
2. Fasten proximity switch in the C-groove and in the clamping piece (3) using screws
3. Connect proximity switch to controller
4. Check proximity switch for proper functioning

### 3.2.8 Start-up of the CS compact slide

- Aerate the total system slowly.
- Pay attention to the permissible values (technical data) regarding:
  - load capacity
  - motion frequency
  - moment loads on the guide system



 <b>CAUTION</b>	
	<b>Limbs may be squeezed by moving components.</b>

- Make sure that there are no persons or tools within the operating range of the module.
- Carry out a test run
  - at first at slow traverse speed,
  - afterwards under operating conditions.



## 4.0.0 Maintenance Instruction

### 4.1.0 Maintenance and servicing

 <b>CAUTION</b>	
	<p><b>The module may only be disassembled when the system is aerated and deactivated. If pneumatic connections are disconnected when they are under pressure, this may result in serious personal injury due to fast movements of moving parts.</b></p>

Maintenance interval	Service measures
As required	<ul style="list-style-type: none"> <li>▪ Clean the module with a dry, lint-free cloth. The module must not be washed down; do not use any aggressive cleaners.</li> </ul>
1 Montly	<ul style="list-style-type: none"> <li>▪ Check the safety labels for damage, readability and cleunless.</li> </ul>



#### Further maintenance

Under the following conditions is the CS-linear module maintenance free:

- Clean workshop atmosphere
- No splash water
- No dust and fumes caused by abraision or processes
- Ambient conditions according the technical cataloge

#### 4.1.1 Servicing

The CS Compact Slide is lubricated for-life and can be operated with oiled and unoiled air.

 <b>CAUTION</b>	
	<b>Never operate the CS Compact Slide with unoiled air after it was operated with oiled air!</b>

#### Air characteristics:

- Dry (free from condensation water)
- Filtered (40µm filter for oiled air)
- Filtered (5µm filter for unoiled air)

If the CS Compact Slide module is operated with oiled air, the oil types listed below should be used:


- Festo special oil
- Avia Avilub RSL 10
- BP Energol HPL 10
- Esso Spinesso 10
- Shell Tellus Oil C 10
- Mobil DTE 21
- Blaser Blasol 154

Oil quantity: 5 – 10 oil drops per 1000 l air

Viscosity range:

9 to 11 mm<sup>2</sup>/s (= cST) at 40°C, ISO-class VG 10 according to ISO 3448

Apart from the usual cleaning work no further maintenance measures are required.

<b>NOTE</b>	
	<p>Module inserts for ionized air environments (e.g. in case of high-voltage procedures such as corona processes)</p> <p>Open guides and piston rods should be covered with a grease layer to avoid formation of rust.</p> <p>Standard greasing Afag: - Staburax NBU8EP (flat guides) - Blasolube 301 (piston rods)</p>

#### 4.1.2 Fault during operation

Fault	Possible cause	Fault clearance
<b>Slide does not move to the final position</b>	Useful load too high	Reduce useful load
	Stossdämpfer sind defekt	Stossdämpfer auswechseln
	Pressure too low	Increase pressure to max. 6 bar
	Module wrongly connected	Check pneumatic connection
	One-way restrictor completely closed	Open one-way restrictor
	Module defective	Return module to Afag
<b>Slide moves too hard to the final position</b>	Shock absorber faulty	Replace shock absorber
	Max. useful load exceeded	Reduce useful load
	Slide speed too high	Reduce speed by means of one-Way restrictor
<b>Air escapes from module</b>	Compressed air connection leaky	Check seals of all air connections and retighten if necessary
	Cylinder leaky	Replace seal set
<b>The CS module will again be in the end positions</b>	No signal on the proximity switch / sensor	Adjust proximity switch / sensor
	Sensor is faulty	Replace sensor (see accessories)

### 4.1.3 Expendable parts for elastomer shock absorbers

The shock absorber elements of the elastomer shock absorbers are wearing parts. The same shock absorber element is used for the shock absorbers.

Article No:

50286941 Shock absorber element for:  
ASED M5x0.5-1 and ASED M6x0.5-1

A used shock absorber element can be exchanged very easily. The shock absorber element is pulled out of the sleeve to the front and the new shock absorber element is pushed in from the front.

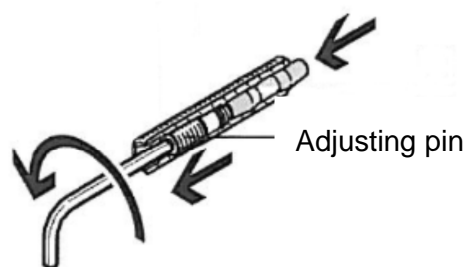


Expendable parts

### 4.1.4 Adjustment of the elastomer shock absorber

The power values indicated in the technical data are applicable to a maximum set stroke (H max) when the adjusting pin was completely turned in. The defined fixed end position can however be reached when the stroke is reduced correspondingly resulting in less power and thus a reduced drive force (F a). This applies for the rear position with the CS 8 as the return stroke force is less than 30N.

1. Turn out the adjusting pin until the defined end position for the existing drive force (F<sub>a</sub>) was reached.
2. Check the absorber in a test run. Make sure that the carriage does not dash.



## ⚠ CAUTION

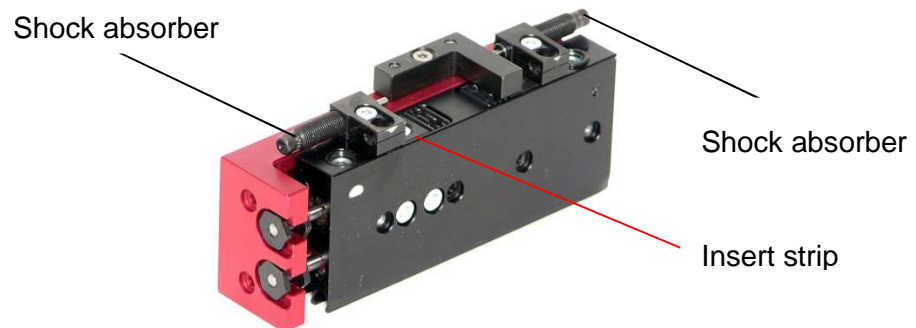


**Please note:**

**The stroke time is not reduced by using elastomer absorbers. There is however no restriction on the cycle number/hour when elastomer shock absorbers are**





If the desired stroke with the shock absorber cannot be set, the insert strip must be released and rotated 180° to be mounted.




#### 4.1.5 Disassembly and repair

When the module is damaged it can be returned to Afag Automation AG for repair.

 <b>CAUTION</b>	
	<p><b>The module may only be disassembled when the system is aerated and deactivated. If pneumatic connections are disconnected when they are under pressure, this may result in serious personal injury due to fast movements of moving parts.</b></p>


#### When can the modules be repaired by the customer?

**Wearing parts** can be exchanged by the customer itself when the warranty has expired.

<b>NOTE</b>	
	<p><b>All the other faulty parts must exclusively be replaced by company Afag Automation AG!</b></p>

#### **When the customer detects that the respective module is still under warranty:**


- he returns the module to company Afag Automation AG for repair.
- If the warranty has already expired, the customer must decide whether he repairs the module by himself and orders the wearing parts kit or whether he returns the module to company Afag Automation AG for repair.

<b>NOTE</b>	
	<p>Afag offers a reliable repair service. Please note that Afag does not warranty for parts which were not repaired by Afag Automation AG.</p>

#### 4.1.6 Accessories / Spare parts

Item	Order No.
Centering bushings 5x2.5 (2 Stk.)	50035831 (CS 8)
Centering bushings 7x3 (2 Stk.)	11016850 (CS 12)
Sensor INI c10x28.5-Em-PNP-close-M8x1	50033432 (CS 8 + CS 12)
Sensor INI d3x22-Sn0.8-PNP-close-M8x1	50001023 (CS 8) Alternative
Elastomer shock absorber ASER M5x0.5-1	50282683 (CS 8)
Elastomer shock absorber ASER M6x0.5-1	50298509 (CS 12)
Absorbing Element	50286941 (CS 8 + CS 12)
Hydraulic shock absorber ASSD M5x0.5-2	50046138 (CS 8)
Hydraulic shock absorber ASSD M6x0.5-1	50048428 (CS 12)
Adjusting stop pin ASS 05/12	50036780 (CS 8)
Adjusting stop pin ASS 05/22	50045855 (CS 8)
Adjusting stop pin ASS 05/37	50046516 (CS 8)
Connection plates VP 101	50041054 (CS 8)
Connection plates VP 107	50041056 (CS 12)
Connection plates VP 106	50077110 (CS 12)
Special screw M3x16/6 (2 Stk.)	50035812 (CS 8)
Special screw M4x25/8 (2 Stk.)	50101005 (CS 12)
Socket wrench to ASSD 05	50110796 (CS 08)
Socket wrench to ASSD 06	50110797 (CS 12)

#### 5.0.0 Disposal

NOTE	
	<p>CS modules which cannot be used any more must not be disposed off as a complete unit, but must be disassembled and recycled according to the type of material.</p> <p>Materials than cannot be recycled must be disposed off in accordance with the legal regulations.</p>