

Flexible and efficient:

The BERNSTEIN CS-3000

Designers and manufacturers expect modern suspension systems to feature variable configuration, progressive design and complete ease installation.

BERNSTEIN sets standards with the CS-3000:

Modern industrial design, well-conceived ergonomics!

The combinable components create an innovative system solution based on modular principles for attaching enclosures, especially the BERNSTEIN CC-3000, CC-4000 and CC-4000 SL enclosures (see Page 72 onwards), to machines and systems.

The particular ease of assembly and installation of the CS-3000 is reflected in substantial time savings and cost efficiency.



In addition to the positively locking tube mounting screws other features include:

- **Six-fold form-fit** thanks to component contour in tube attachment area (the otherwise optional safety hole additionally required for overhead installation is rendered unnecessary)
- **One-man installation** of the complete system
- **Infinitely variable system alignment** by means of tube mounting screws
- **Subsequent alignment** at any time without dismantling the complete system
- Cable and installation openings at all joints in the system
- Different tube lengths for variable configuration
- Tube machined at one end can be cut to required length (machining templates supplied)
- **Adjustable torque** (firmness) of all rotary components (coarse adjustment), fine adjustment by means of clamping lever or screw



Intelligent design with smooth flowing transition lines for ease of cleaning



Six-fold form-fit thanks to component contour in tube attachment area

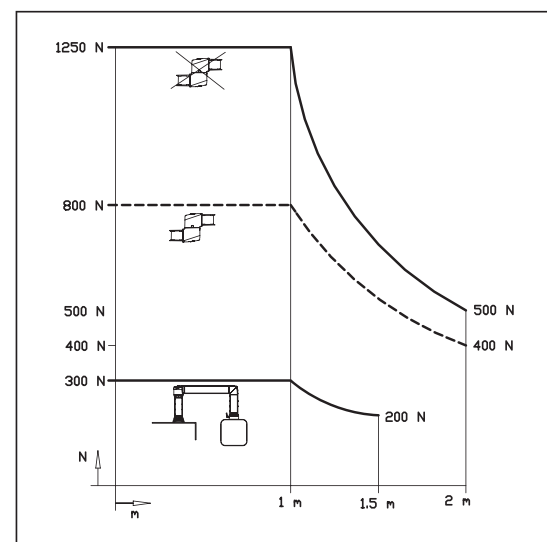


Effortless readjustment possible at any time without the need to dismantle the complete system

Other system features:

- Anodises aluminium tubes for long service life and reliable operation
- Smooth flowing transition lines from the tube to other components prevent dirt built-up (easy to clean)
- Coated tube mounting screws for sealing threaded holes and secure screw connections
- Elegant appearance with narrow sections connected by adapting the cross section from square to round tube
- Modular coupling configurations possible (also subsequently), e.g. with adapter for narrow enclosures or tilt adapter
- Well-conceived ergonomics for easy and virtually fatigue-free operation
- An ideal single-source solution for BERNSTEIN control enclosures
- Protection class IP 65

Load diagram

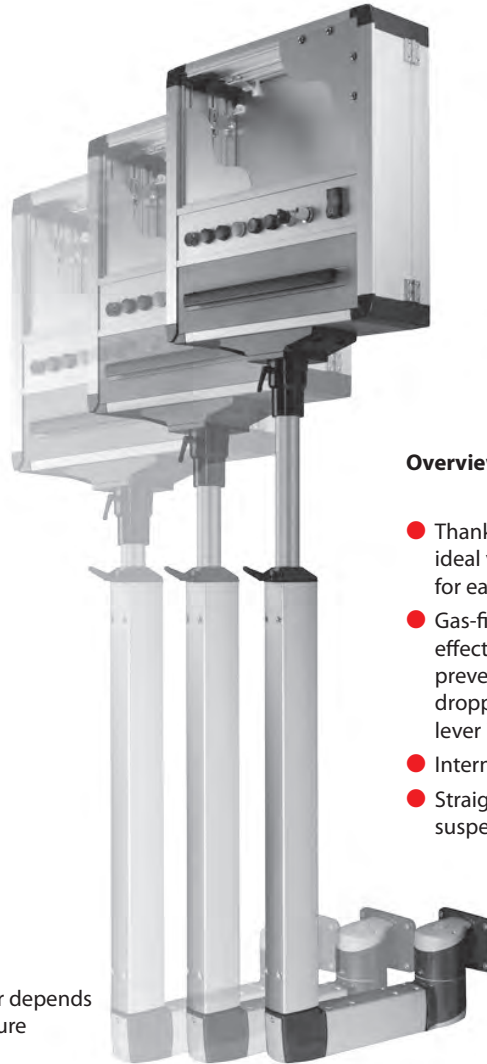


CS-3000 HV – Vertically adjustable modules for optimum ergonomics

With the vertically adjustable CS-3000 HV, BERNSTEIN offers an innovative expansion to the CS-3000 suspension system. Flexible height adjustment and internal cable routing make the HV version even easier to install and operate.

With a variable lift range of 250 mm, the support system can be adjusted infinitely variable to the required working height. The integrated gas-filled damper system ensures the enclosure can be raised with minimum effort while preventing it from dropping suddenly after the clamping lever is released. This means added convenience but above all greater safety.

The CS-3000 HV is available as an optionally mobile stand base or wall-mounted version and can be easily integrated in an existing CS-3000 system.



Overview of advantages:

- Thanks to the 250 mm variable lift, the ideal viewing height can be adjusted for each operator
- Gas-filled damper system provides effective support during lifting and prevents the supported enclosure dropping suddenly after the clamping lever is released
- Internal cable routing
- Straightforward integration in CS-3000 suspension system

Selection criteria

- Selection of the size of gas-pressurised damper depends on the total weight and the ambient temperature
- The total weight is calculated from:
Enclosure + installed equipment + coupling components

Ambient temperature	40°C	100 N (6–11 kg)	150 N (11–19 kg)	200 N (19–29 kg)	300 N (29–39 kg)
	30°C	100 N (5.5–10.5 kg)	150 N (10.5–18 kg)	200 N (18–27.5 kg)	300 N (27.5–37 kg)
	20°C	100 N (5–10 kg)	150 N (10–17 kg)	200 N (17–26 kg)	300 N (26–35 kg)
Damper force/total weight					

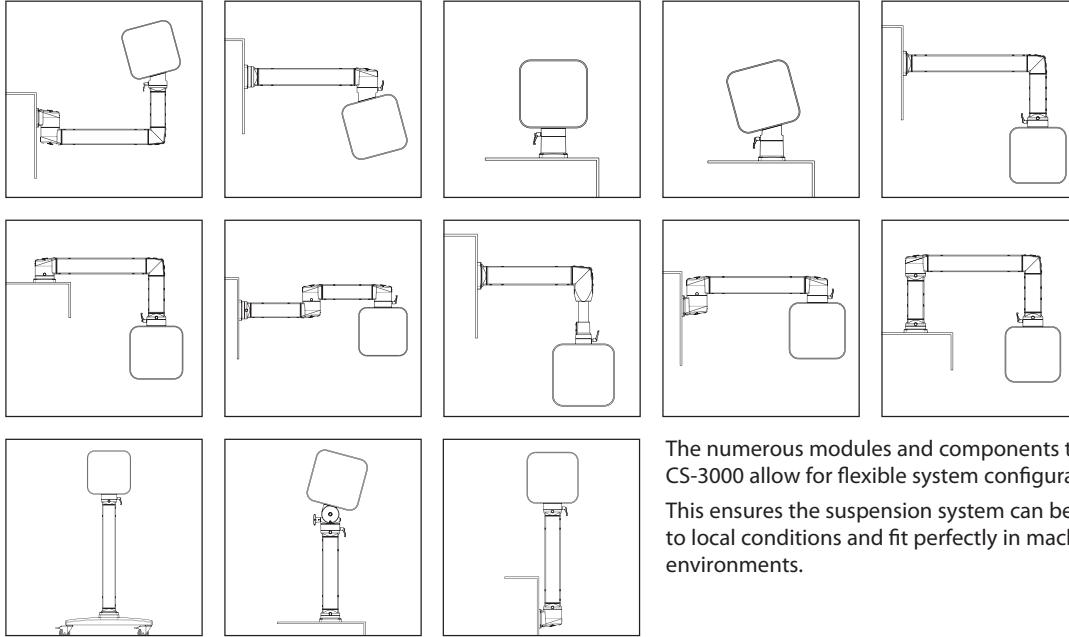
Materials

- Anodised aluminium tubing
- Pressure die-cast aluminium components
- Polyamide covers for installation openings
- POM bearing
- Neoprene seals

Colours

- Suspension system components: anthracite grey RAL 7016
- Connecting tubes: silver (natural) anodised

Application examples for CS-3000 suspension system – Versatile configuration options



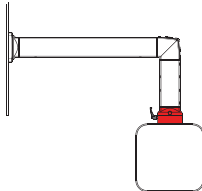
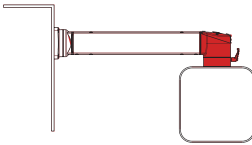
The numerous modules and components that make up the CS-3000 allow for flexible system configuration. This ensures the suspension system can be uniquely adapted to local conditions and fit perfectly in machine and system environments.

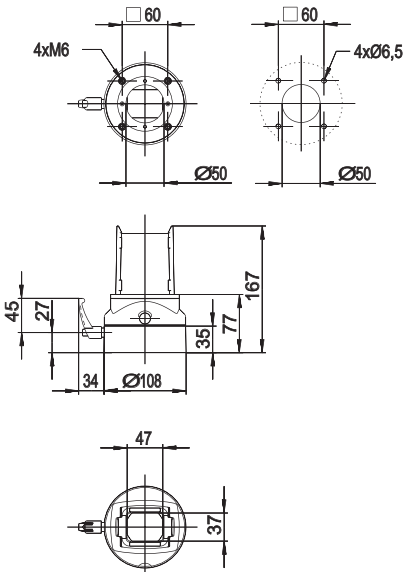
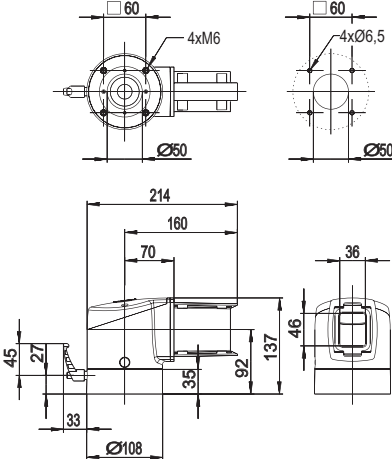
Square aluminium tubing		Tube cross sections	
	Standard lengths (available from stock)	Article number	
	Length 70 x 90 x 250 mm	9524500001	
	Length 70 x 90 x 500 mm	9524500002	
	Length 70 x 90 x 750 mm	9524500003	
	Length 70 x 90 x 1000 mm	9524500004	
	Length 70 x 90 x 1250 mm	9524500005	
	Length 70 x 90 x 1500 mm	9524500006	
	Length 70 x 90 x 1750 mm	9524500007	
	Length 70 x 90 x 2000 mm	9524500008	
	Tubes machined at one end (machining templates supplied, available from stock)		
	Length 70 x 90 x 1000 mm	9524500009	
Length 70 x 90 x 2000 mm	9524500010		
If one of our standard lengths does not suit your requirements, we can also supply tubes machined at one end. Simply shorten to the required length and use the supplied template to machine the shortened end.			
Machined tubes to required lengths We can also supply completely machined tubes to the length you require (price and delivery time on request).			
Round aluminium tubing			
Round aluminium tubes in different lengths. We can also supply completely machined tubes to the length you require. (prices and delivery time on request)			
	Length 48 x 4 x 250 mm		9521400000
	Length 48 x 4 x 500 mm		9521401000
	Length 48 x 4 x 750 mm		9521402000
	Length 48 x 4 x 1000 mm		9521403000
CS-3000 Bent Tube			
	Custom bent tubes are now available! Contact us for additional information.		

Article		Straight Coupling	Elbow Coupling
Article number	(colour)	1015300177 RAL 9006 white aluminium 1015300001 RAL 7016 anthracite grey	1015300178 RAL 9006 white aluminium 1015300002 RAL 7016 anthracite grey



Details	Angle of rotation 300° with stop Adapter 101.5300.011 for attachment to sections < 120 mm)	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover
Weight in lbs. (g)	3.2 (1450)	4.6 (2070)
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	Swivel angle limiter 9805296000

Application example		
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Dimensions in mm		
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Tilt Couplier 15° A

1015300179 RAL 9006 white aluminium
1015300013 RAL 7016 anthracite grey

Tilt Couplier 15° B

1015300180 RAL 9006 white aluminium
1015300014 RAL 7016 anthracite grey

Tilt Elbow Couplier 15° A

1015300181 RAL 9006 white aluminium
1015300015 RAL 7016 anthracite grey



Angle of rotation 300° with stop, fixed tilt of 15°
 (variant A tilted back)

Angle of rotation 300° with stop, fixed tilt of 15°
 (variant B tilted forward)

Angle of rotation 300° with stop, fixed tilt of 15°,
 installation opening including screw-fit plastic
 cover (variant A tilted back)

3.7 (1680)
 Aluminium

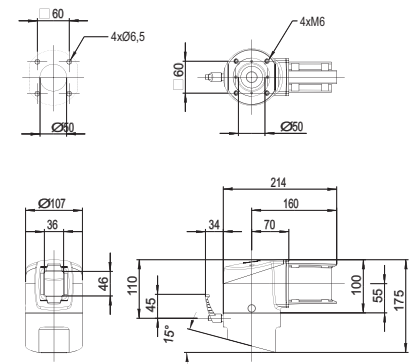
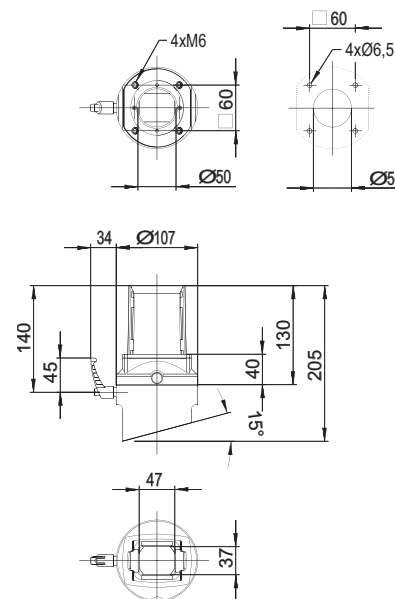
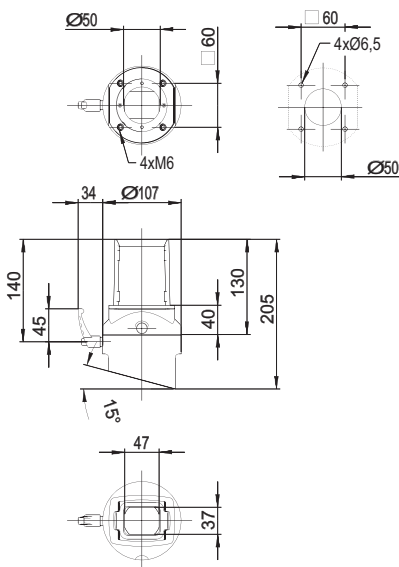
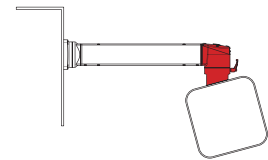
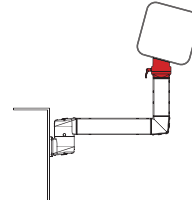
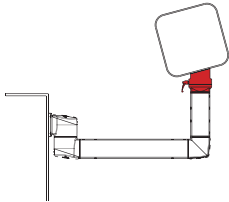
3.7 (1680)
 Aluminium

4.8 (2160)
 Aluminium

Swivel angle limiter **9805296000**

Swivel angle limiter **9805296000**

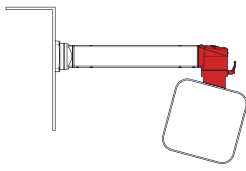
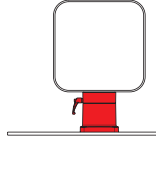
Swivel angle limiter **9805296000**

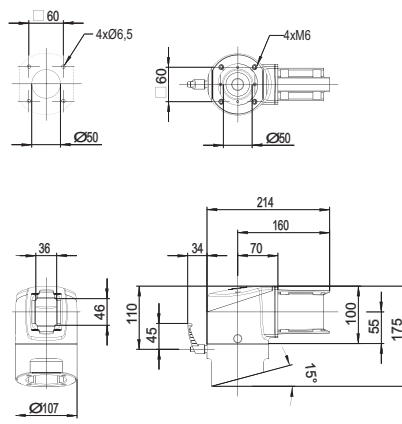
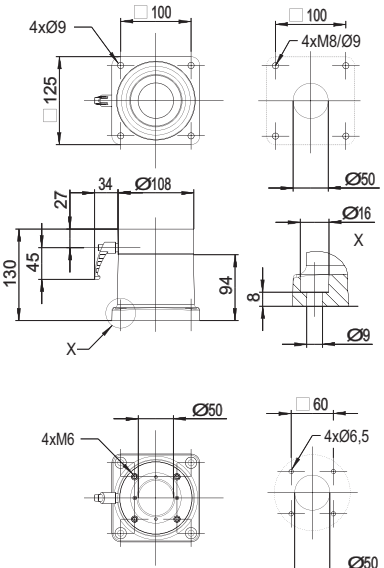


Article		Tilt elbow coupling 15° B	Base Coupling
Article number	(colour)	1015300182 RAL 9006 white aluminium 1015300016 RAL 7016 anthracite grey	1015300183 RAL 9006 white aluminium 1015300017 RAL 7016 anthracite grey



Details	Angle of rotation 300° with stop, fixed tilt of 15°, installation opening including screw-fit plastic cover (variant B tilted forward)	Angle of rotation 300° with stop
Weight in lbs. (g)	4.8 (2160)	4.7 (2120)
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	Swivel angle limiter 9805296000

Application example		
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Dimensions in mm		
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Tilt Base Couplier 15° A

1015300184 RAL 9006 white aluminium
1015300018 RAL 7016 anthracite grey

Tilt Base Couplier 15° B

1015300185 RAL 9006 white aluminium
1015300019 RAL 7016 anthracite grey

Straight Coupling 48

1013056000 RAL 9006 white aluminium
1013050000 RAL 7016 anthracite grey



Angle of rotation 300° with stop, fixed tilt of 15° (variant A tilted back)

Angle of rotation 300° with stop, fixed tilt of 15° (variant B tilted back)

Angle of rotation 300° with stop, only compatible with 48 mm round tube, required for attachment to 80 mm section

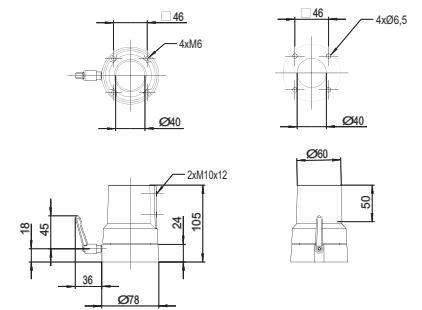
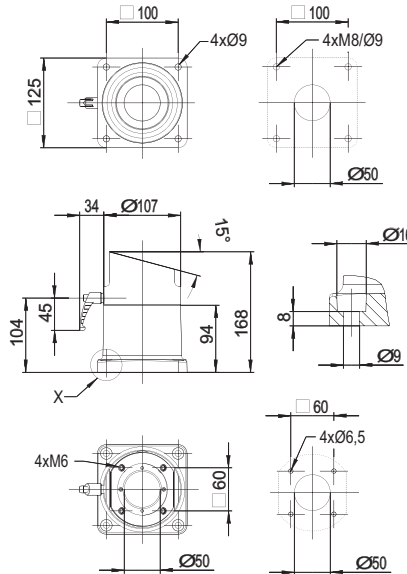
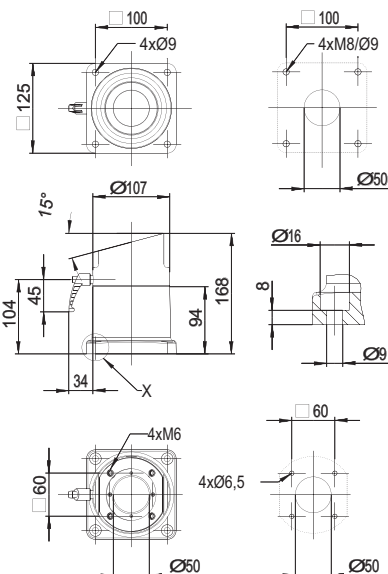
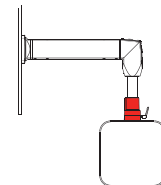
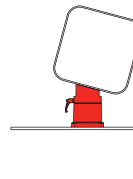
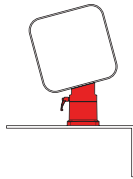
5.2 (2340)
Aluminium

5.2 (2340)
Aluminium

3.9 (1760)
Aluminium

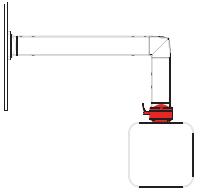
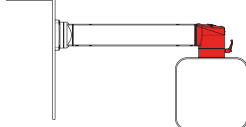
Swivel angle limiter 9805296000

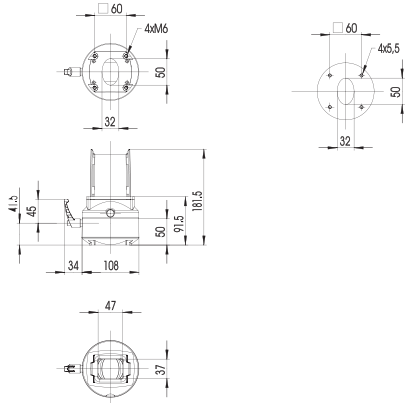
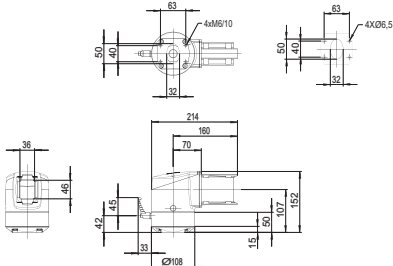
Swivel angle limiter 9805296000



Article		Coupling for Siemens SIMATIC Pro®	Elbow coupling for Siemens SIMATIC Pro®
Article number	(colour)	1015300187 RAL 9006 white aluminium 1015300043 RAL 7016 anthracite grey	1015300074 RAL 7016 anthracite grey



Details	Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop	Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop, installation opening including screw-fit plastic cover
Weight in lbs. (g)	3.5 (1580)	4.9 (2200)
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	Swivel angle limiter 9805296000
Application example		

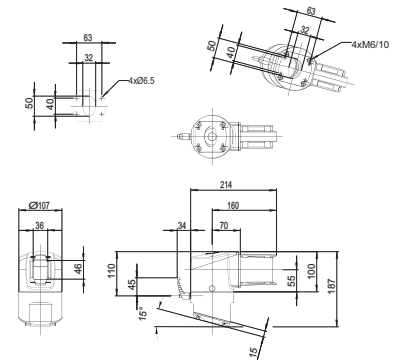
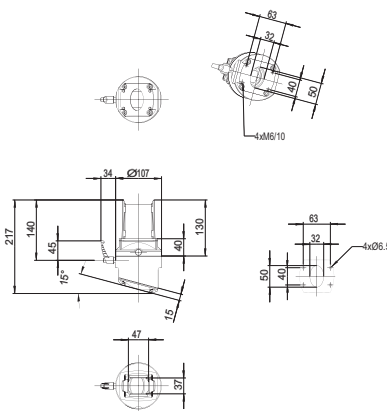
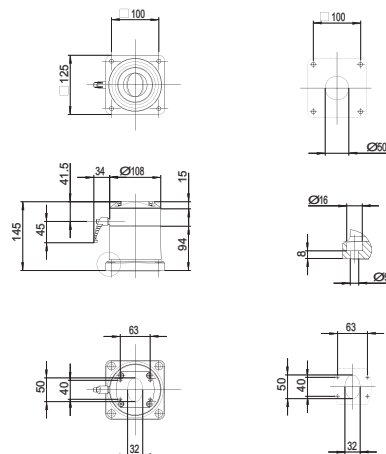
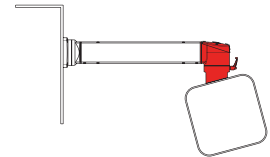
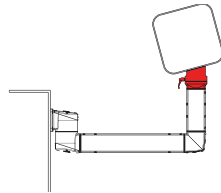
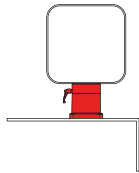
Dimensions in mm		
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Base coupling for Siemens SIMATIC Pro®		Tilt coupling 15° for Siemens SIMATIC Pro®		Tilt elbow coupling 15° for Siemens SIMATIC Pro®	
1015300075	RAL 7016 anthracite grey	See Details	RAL 7016 anthracite grey	See Details	RAL 7016 anthracite grey



Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop	Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop, fixed tilt of 15° (variant A tilted back, variant B tilted forward)	Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop, fixed tilt of 15°, installation opening including screw-fit plastic cover (variant A tilted back, variant B tilted forward)
5.0 (2250)	1015300076 Tilt elbow coupling 15° A 1015300077 Tilt elbow coupling 15° B	1015300078 Tilt elbow coupling 15° A 1015300079 Tilt elbow coupling 15° B
Aluminium	Aluminium	Aluminium

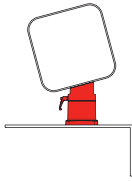
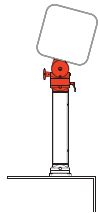
Swivel angle limiter	9805296000	Swivel angle limiter	9805296000	Swivel angle limiter	9805296000
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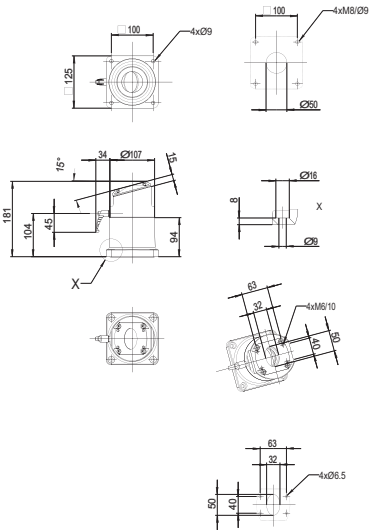
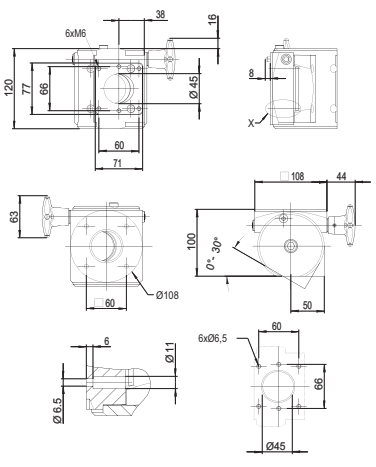


Article		Tilt base coupling 15° for Siemens SIMATIC Pro®	Tilt adapter (30° infinitely variable)
Article number	(colour)	See Details RAL 7016 anthracite grey	1015300193 RAL 9006 white aluminium 1015300012 RAL 7016 anthracite grey



Details	Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop, fixed tilt of 15° (variant A tilted back, variant B tilted forward)	Used only together with couplings, infinitely variable tilt up to 30°, maximum load max. 300 N, compatible SIMATIC Pro® couplings
Weight in lbs. (g)	1015300080 Tilt base coupling 15° A 1015300081 Tilt base coupling 15° B 5.4 (2470)	4.1 (1840)
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	

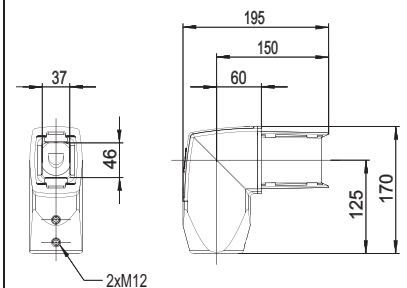
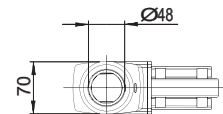
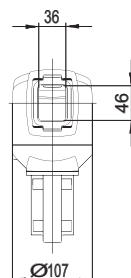
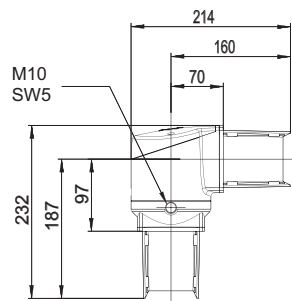
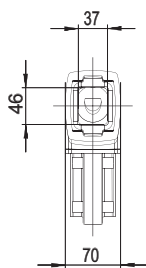
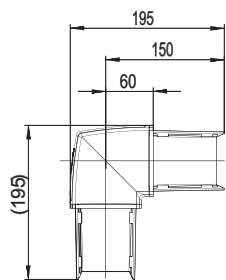
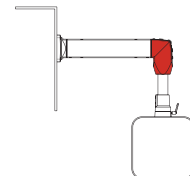
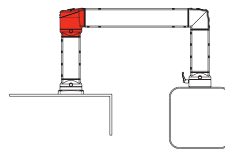
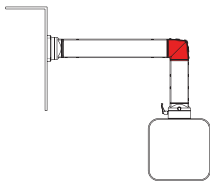
Application example		
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Dimensions in mm		
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<p>Elbow 1015300195 RAL 9006 white aluminium 1015300008 RAL 7016 anthracite grey</p>	<p>Elbow, Rotary 1015300196 RAL 9006 white aluminium 1015300009 RAL 7016 anthracite grey</p>	<p>Elbow, Reduced RD 48 1015300197 RAL 9006 white aluminium 1015300020 RAL 7016 anthracite grey</p>
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<p>With installation opening including screw-fit plastic cover</p>	<p>Angle of rotation 300° with stop, installation opening including screw-fit plastic cover</p>	<p>Reducer elbow from the square tube to 48 mm round tube</p>
<p>3.7 (1680) Aluminium</p>	<p>5.4 (2460) Aluminium</p>	<p>4.2 (1920) Aluminium</p>
<p style="text-align: center;">Swivel angle limiter 9805296000</p>		



Article	
Article number	(colour)

Top Joint	
1015300198	RAL 9006 white aluminium
1015300003	RAL 7016 anthracite grey

Wall Joint S	
1015300199	RAL 9006 white aluminium
1015300006	RAL 7016 anthracite grey

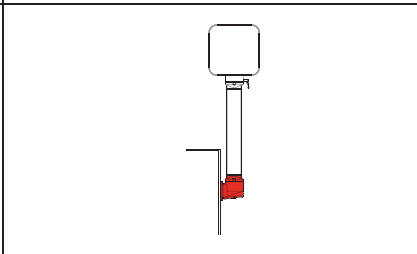
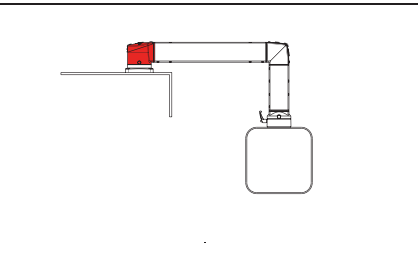


Details	
Weight in lbs. (g)	5.0 (2250)
Material	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000

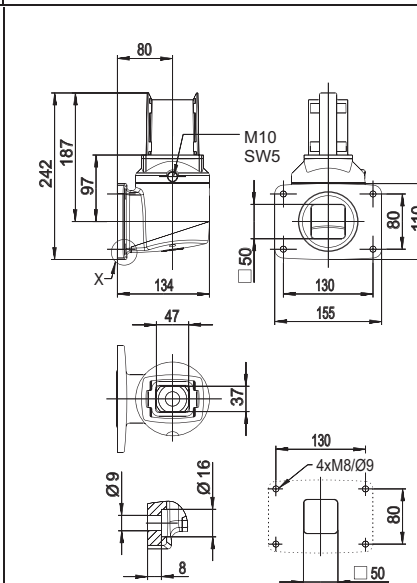
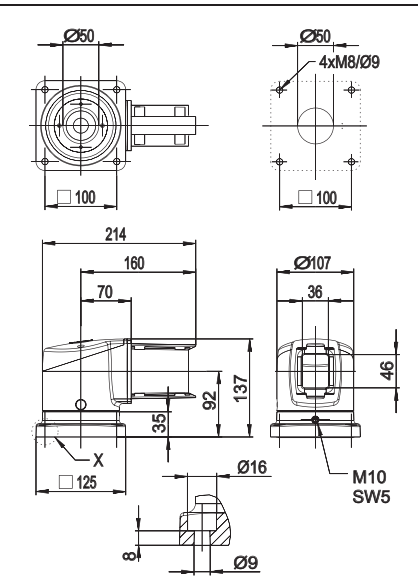
	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover
	5.0 (2250)
	Aluminium
	Swivel angle limiter 9805296000

	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover
	5.4 (2450)
	Aluminium
	Swivel angle limiter 9805296000

Application example	
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Dimensions in mm	
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Wall Joint W

1015300200 RAL 9006 white aluminium
1015300007 RAL 7016 anthracite grey

Intermediate Joint

1015300201 RAL 9006 white aluminium
1015300004 RAL 7016 anthracite grey

Base / Wall Flange

1015300204 RAL 9006 white aluminium
1015300010 RAL 7016 anthracite grey



Angle of rotation 300° with stop, 2 installation openings including screw-fit plastic covers

Angle of rotation 300° with stop, 2 installation openings including screw-fit plastic covers

2930

Aluminium

2940

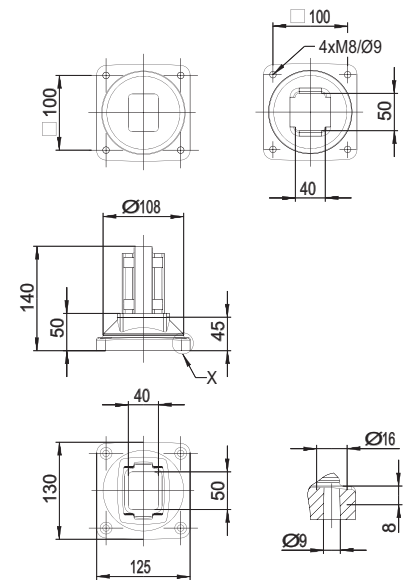
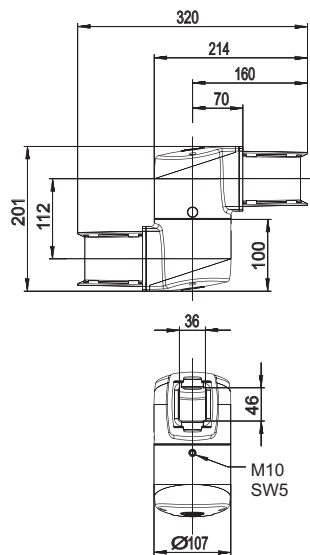
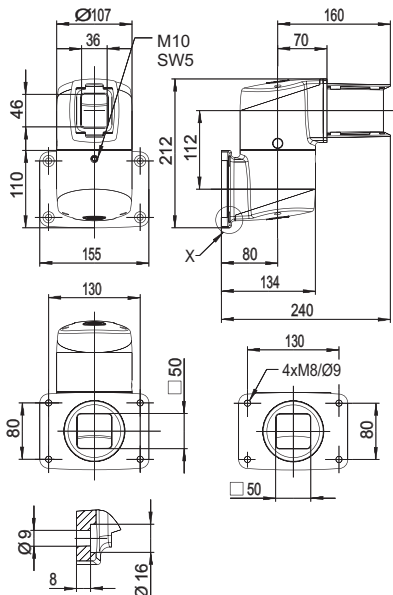
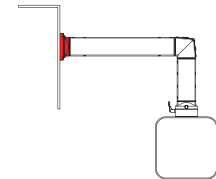
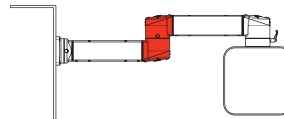
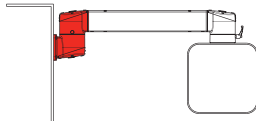
Aluminium

1300

Aluminium

Swivel angle limiter 9805296000

Swivel angle limiter 9805296000



Article	
Article number	(colour)

Base, Rotary	
1015300205	RAL 9006 white aluminium
1015300005	RAL 7016 anthracite grey

CS-3000 HV module, vertically adjustable	
See Details	RAL 7016/anodised aluminium

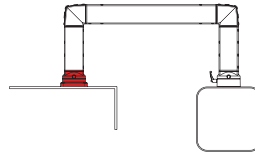


Details	
Weight in lbs. (g)	
Material	
Accessories (retrofitable)	

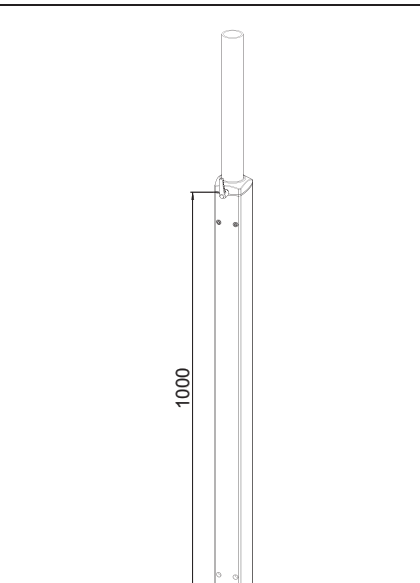
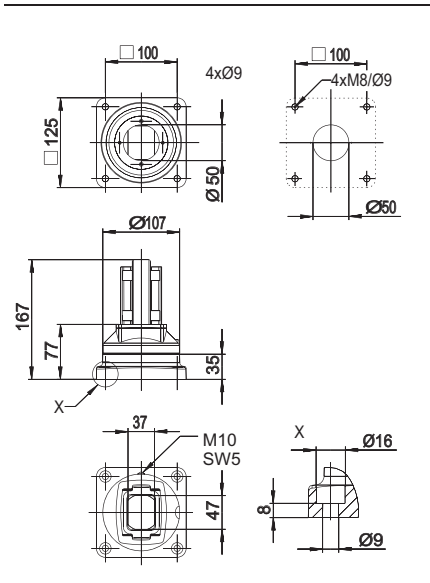
Angle of rotation 300° with stop	
3.9 (1780)	
Aluminium	
Swivel angle limiter	9805296000

1015300022 CS-3000 HV 1000/100	
1015300029 CS-3000 HV 1000/150	
1015300031 CS-3000 HV 1000/200	
1015300033 CS-3000 HV 1000/300	
Modular height 1000 mm; see introduction for detailed information on selection of suitable damper force.	
15.5 (7030)	
Aluminium	

Application example	
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Dimensions in mm	
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CS-3000 HV module, vertically adjustable

See Details

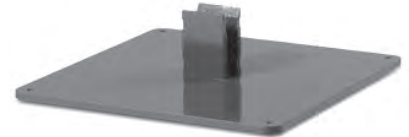
RAL 7016/anodised aluminium

Large free-standing base

1015300206 RAL 9006 white aluminium
1015300027 RAL 7016 anthracite grey

Small free-standing base

1015300207 RAL 9006 white aluminium
1015300028 RAL 7016 anthracite grey



1015300023 CS-3000 HV 800/100
1015300030 CS-3000 HV 800/150
1015300032 CS-3000 HV 800/200
1015300034 CS-3000 HV 800/300
 Modular height 800 mm; see Page 123 for detailed information on selection of suitable damper force.

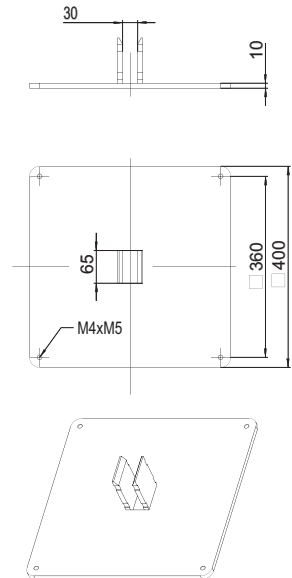
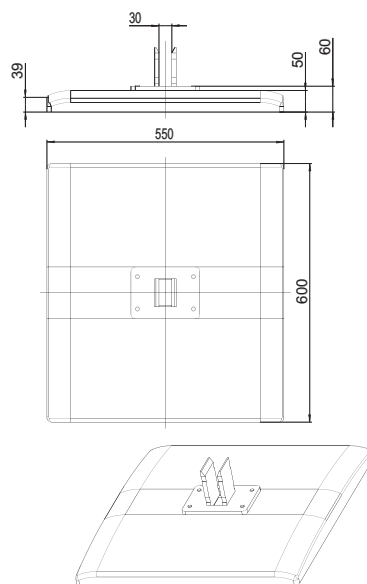
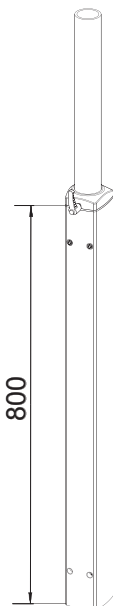
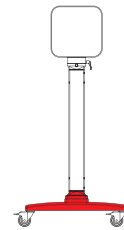
13.3 (6020)
 Aluminium

25.1 (11660)
 Steel / Aluminium

29.1 (13220)
 Steel

Castors and Support feet

Castors and Support feet



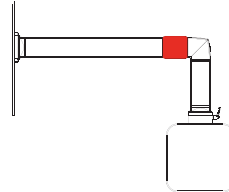
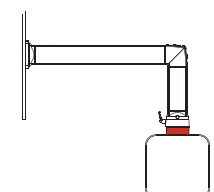
Article	Tube Adaptor	Adapter (narrow section)
Article number (colour)	1015300208 RAL 9006 white aluminium 1015300039 RAL 7016 anthracite grey	1015300209 RAL 9006 white aluminium 1015300011 RAL 7016 anthracite grey

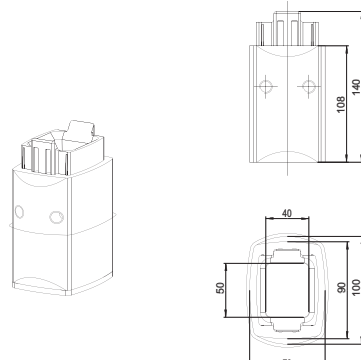
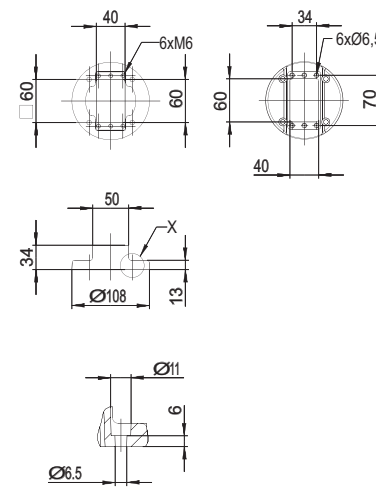


Details	Required for connecting tubes shortened directly at place of installation: Tubes machined at one end and of unspecified lengths can be cut to size and connected to the system with the tube adaptor	Only to be used together with couplings (for attachment to BERNSTEIN enclosures with depths <120 mm)
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Weight in lbs. (g)	1.6 (720)	.7 (300)
Material	Aluminium	Aluminium

Accessories (retrofitable)		

Application example		
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Dimensions in mm		
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Coupling Head
9808017400 RAL 9006 white aluminium
9806818000 RAL 7016 anthracite grey

Bent Tube
Customer-specific Anodised aluminium

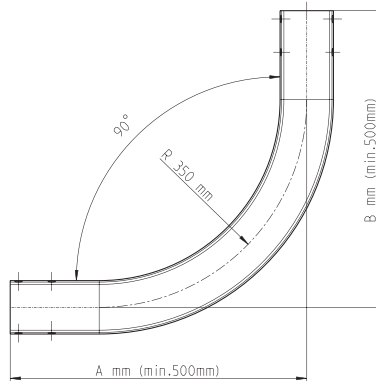
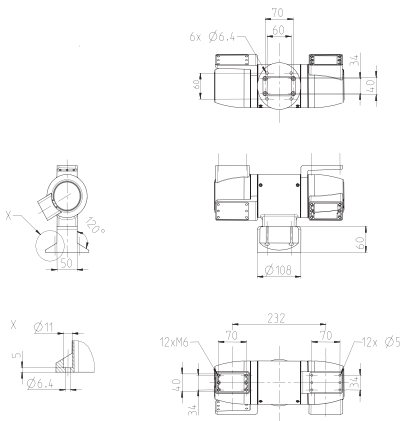
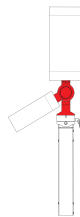


Coupling head for infinitely variable, pivoted attachment of CC-4000 and CC-4000 control enclosures (infinitely variable from 0° to 30°) and keyboard consoles (infinitely variable from 0° to 20°) to coupling components CS-3000.

Bent tube manufactured to individual specifications (dimensions min. 500 mm, max. 1.500 mm)
 Reduced assembly time due to its elbow free design, snag free cable routing, no limitation of the load bearing capacity compared to traditional systems with straight tubes.

7.5 (3400)
 Aluminium

Depending on version
 Aluminium



CS-3000 Bent Tube

Design, simple assembly and ease of cleaning as well as variety of components, load bearing capacity and quality are important criteria for the choice of a suitable suspension system. All of these characteristics are offered by BERNSTEIN's CS-3000 Family including the new Bent Tube. Unlike traditional types of configurations (tube – elbow – tube), the exceptional single piece construction offers a wide range of application opportunities. It is particularly suitable for operator control panels or console enclosures with suspension arm attachments on the bottom, as it reduces the possibility of projection impact injury to machine operator and surrounding people.



Product features

- Material: Anodised aluminium
- Cross-sectional dimension of the tube: 70 x 90 mm (to match CS-3000 components)
- No limitation of the load bearing capacity compared to traditional systems with straight tubes
- Reduced assembly time due to its elbow free design
- Snag free cable routing
- Manufactured to individual specifications (dimensions min. 500 mm, max. 1000 mm)



Application examples



Accessories

Article



**Swivel angle limiter
CS-3000**

9805296000

- Swivel angle limiter for coupling and joint components
- Adjustable in steps of 13.7°
- Contains ten Ø 10 mm steel balls

Article



**Swivel angle limiter
CS-3000 neXt**

9806906000

- Swivel angle limiter for coupling and joint components
- Adjustable in steps of 30°
- Contains 6 swivel angle limiter

Apparatus castors

9808015300



- Castor set, consisting of 2 steering castors and 2 steering castors with total locking for free-standing bases
- Load-bearing capacity of each castor 70 kg

Levelling feet

9808012900



- Height-adjustable feet (1 set = 4 pieces) for free-standing bases

Floor anchoring

9808014100



- Floor anchoring set for the large stand

Industrial castors

9808012800



- Castor set, consisting of 4 steering castors with locking brake
- Load-bearing capacity of each castor 50 kg

Signal lamp adapter

9805317000 Joint components
9805318000 Elbow components



- For connecting commercially available 25 mm diameter signal lamps to CS-3000 suspension system components

Adapter plate

9806678000



- For connecting adapter flange to coupling 48

(9806520000 required together with coupling RD 48 for attachment to CC-4000 section 80)

Adapter flange

9806649000



- For enclosure with door section and / or keyboard

Screw cover set

9806590000



- Plastic covers for sealing the tube fastening screws RAL 9006
- Kit contains 50 pcs.