

Suspension System CS-3000

Flexible and efficient: The BERNSTEIN CS-3000

In the main, system constructors 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 and host of combinable components create an innovative system solution based on modular principles for attaching enclosures, especially the BERNSTEIN CC-3000, CC-4000 and CC04000 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.

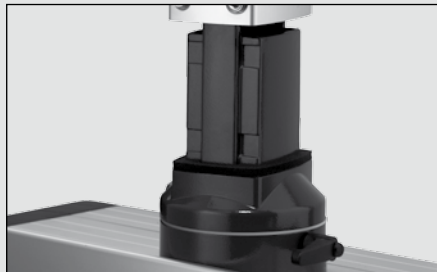


In addition to the positively locking tube mounting screws other features include:

- **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 complete system possible
- **Infinitely variable system alignment** by means of tube mounting screws
- **Subsequent alignment** possible at any time without dismantling 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

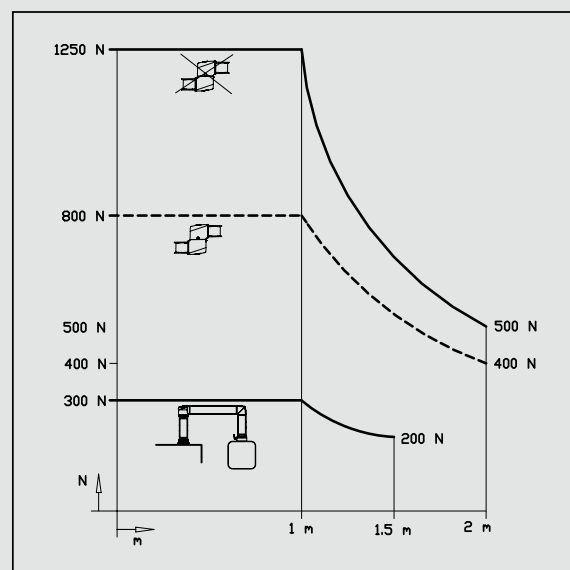


Effortless readjustment possible at any time without the need to dismantle the complete system

Other system features:

- Anodised 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 IP65

Load diagram



The overview on Pages 112/113 is designed to help you determine the load bearing capacity of all BERNSTEIN suspension systems.

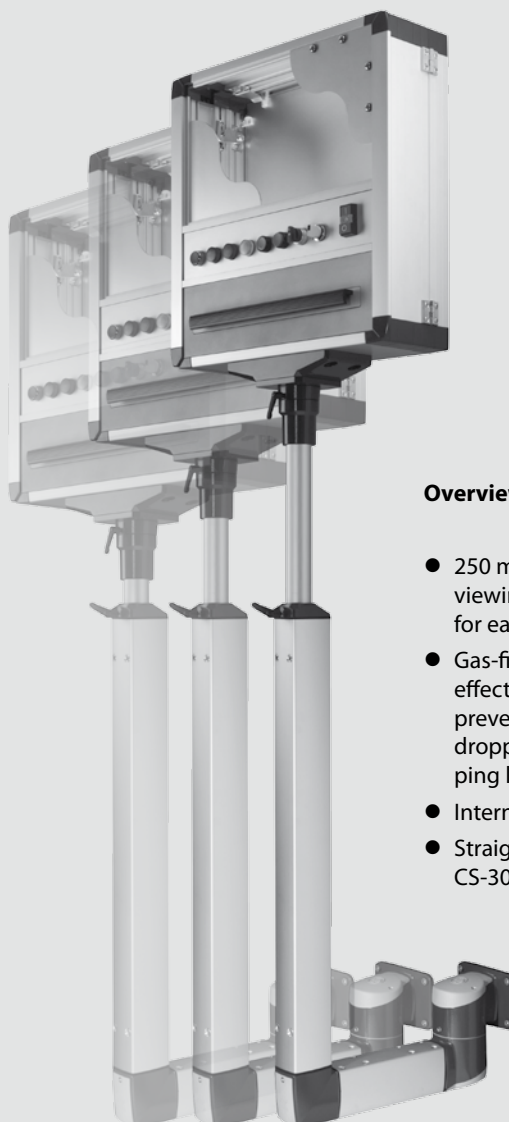
Suspension System CS-3000

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:

- 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	Damper force/total weight			
	100 N (6-11 kg)	150 N (11-19 kg)	200 N (19-29 kg)	300 N (29-39 kg)
	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)
	100 N (5-10 kg)	150 N (10-17 kg)	200 N (17-26 kg)	300 N (26-35 kg)

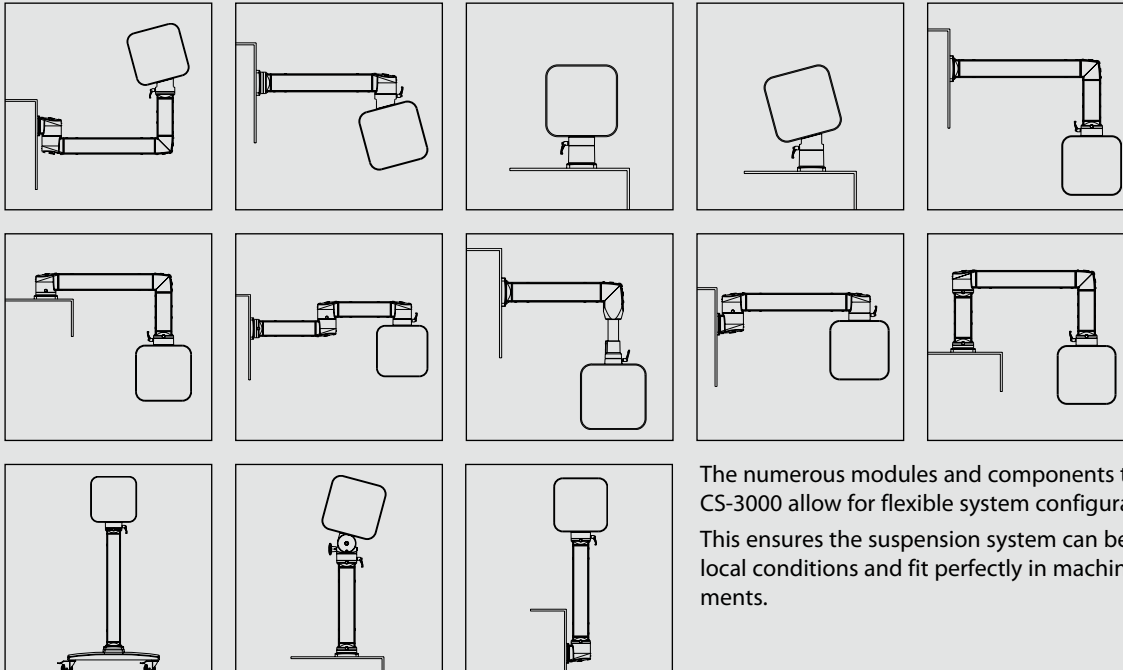
Materials

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

Colours

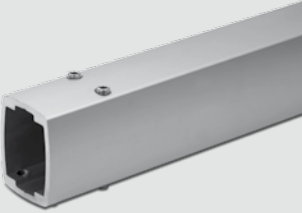
- Suspension system components: anthracite grey RAL 7016
- Connecting tubes: silver (natural) anodised

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

	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). Or use our Express Service.	
	Express Service: Order by 12 noon for next-day delivery! Prices 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

Tube cross sections



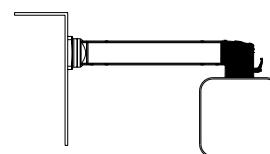
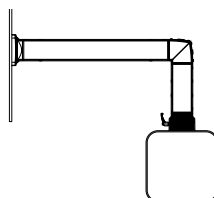
Suspension System CS-3000

Article		Straight coupling	Elbow coupling
Article number	(colour)	1015300001 RAL 7016 anthracite grey	1015300002 RAL 7016 anthracite grey

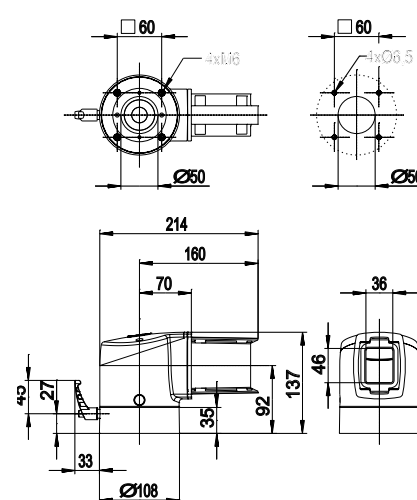
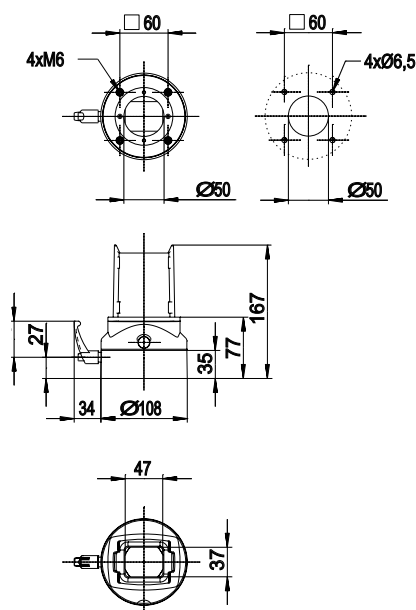


Details	Angle of rotation 300° with stop (Adapter 101.5300.011 is required for attachment to sections < 120 mm)	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover
Weight in g	1450	2070
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000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

Application example



Dimensions in mm



Tilt coupling 15° A
1015300013

RAL 7016 anthracite grey


Tilt coupling 15° B
1015300014

RAL 7016 anthracite grey


Tilt elbow coupling 15° A
1015300015

RAL 7016 anthracite grey


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

1680

Aluminium

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

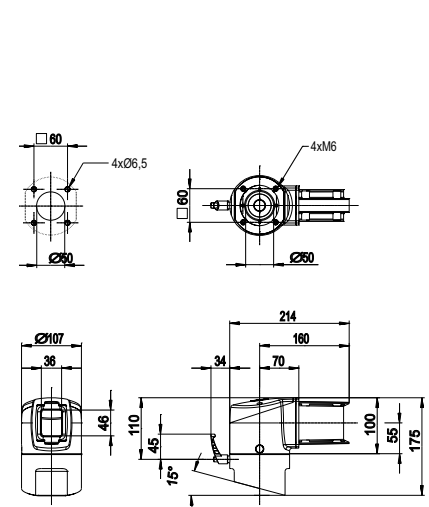
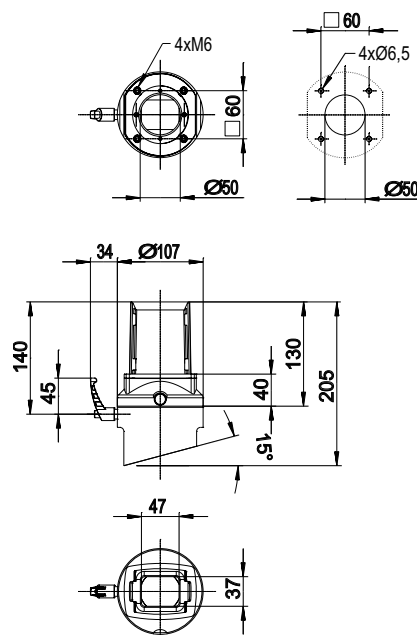
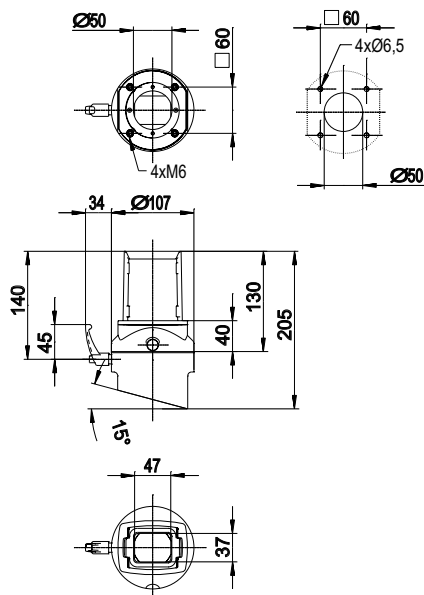
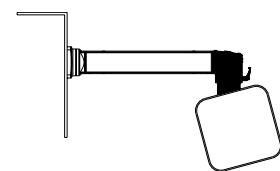
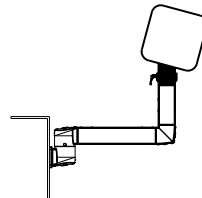
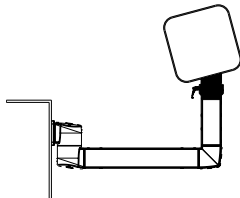
1680

Aluminium

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

2160

Aluminium

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


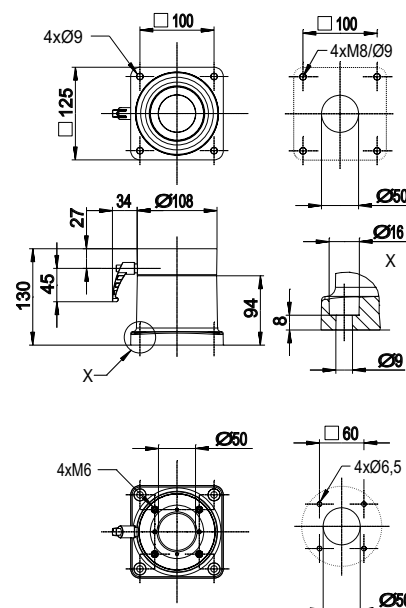
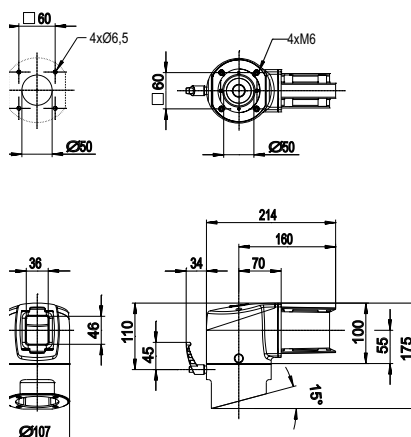
Suspension System CS-3000

Article		Tilt elbow coupling 15° B	Base coupling
Article number	(colour)	1015300016RAL 7016 anthracite grey	1015300017RAL 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 g	2160	2120
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	Swivel angle limiter 9805296000
Application example		

Dimensions in mm



Tilt base coupling 15° A
1015300018

RAL 7016 anthracite grey


Tilt base coupling 15° B
1015300019

RAL 7016 anthracite grey


Straight coupling 48
1013050000

RAL 7016 anthracite grey


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

2340

Aluminium

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

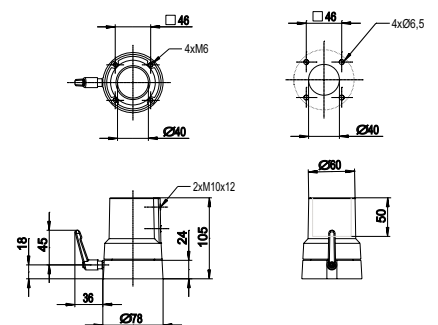
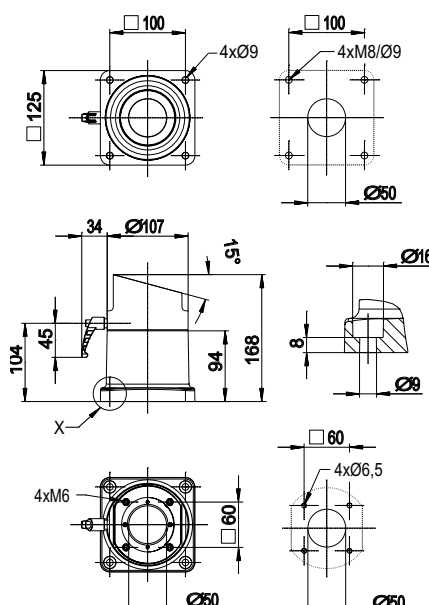
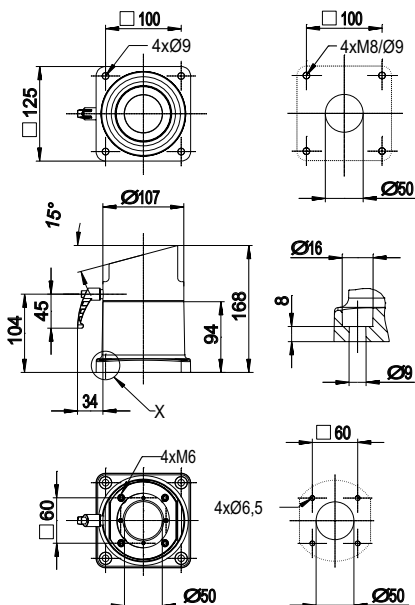
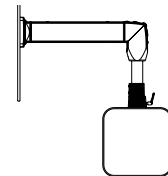
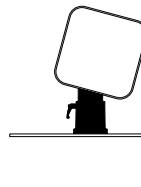
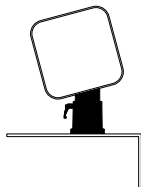
2340

Aluminium

Angle of rotation 300° with stop, only compatible
with 48 mm round tube, **adapter 9806520000**
is required for attachment to 80 mm section

1760

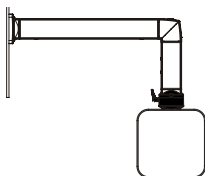
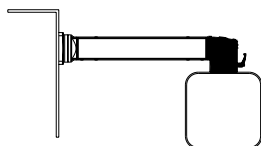
Aluminium

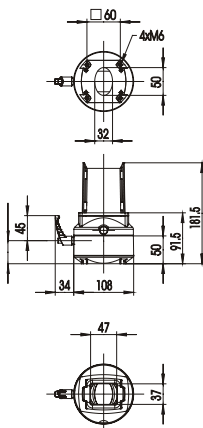
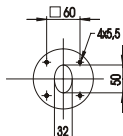
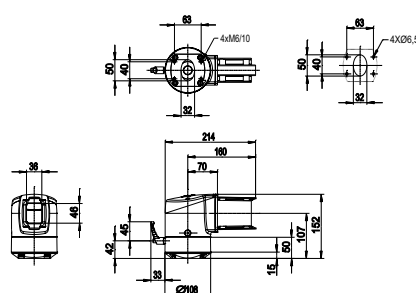
Swivel angle limiter 9805296000
Swivel angle limiter 9805296000


Suspension System CS-3000

Article		Coupling for Siemens SIMATIC Pro®	Elbow coupling for Siemens SIMATIC Pro®
Article number	(colour)	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 g	1580	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®
1015300075

RAL 7016 anthracite grey


Tilt coupling 15° for Siemens SIMATIC Pro®
See Details

RAL 7016 anthracite grey


Tilt elbow coupling 15° for Siemens SIMATIC Pro®
See Details

RAL 7016 anthracite grey


Customised coupling for Siemens SIMATIC Pro®,
angle of rotation 300° with stop.

2250

Aluminium

Customised coupling for Siemens SIMATIC Pro®,
angle of rotation 300° with stop, fixed tilt of 15°
(variant A tilted back, variant B tilted forward)

1015300076 Tilt elbow coupling 15° A
1015300077 Tilt elbow coupling 15° B

1810

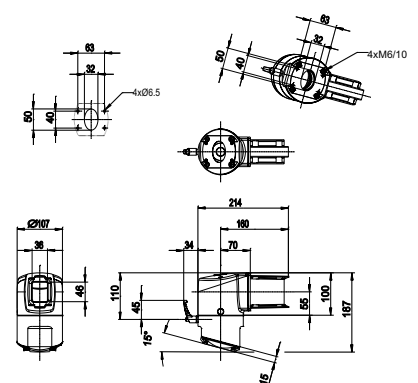
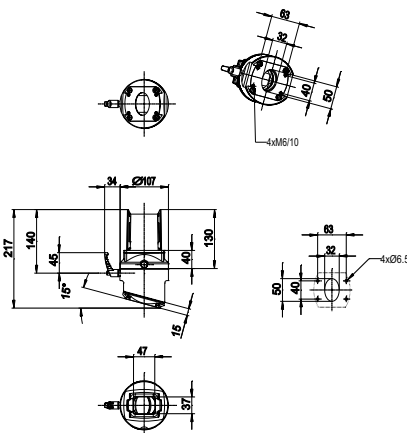
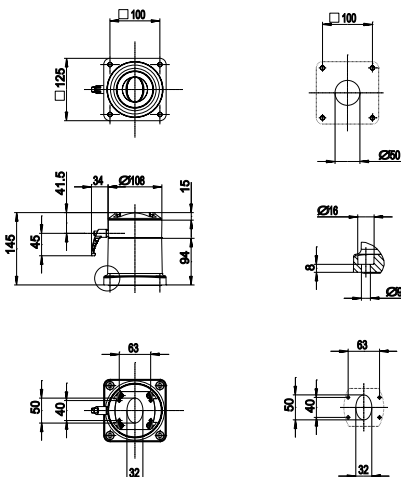
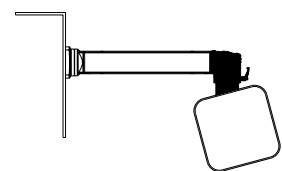
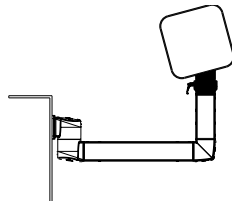
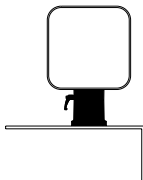
Aluminium

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)

1015300078 Tilt elbow coupling 15° A
1015300079 Tilt elbow coupling 15° B

2290

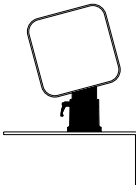

Aluminium

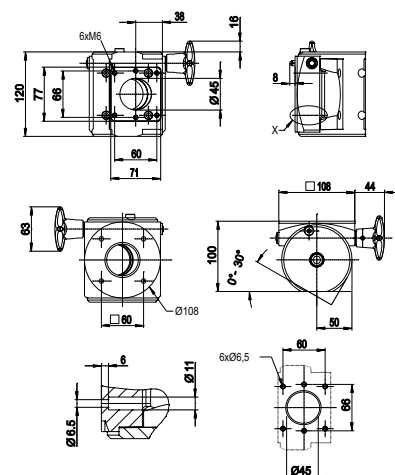
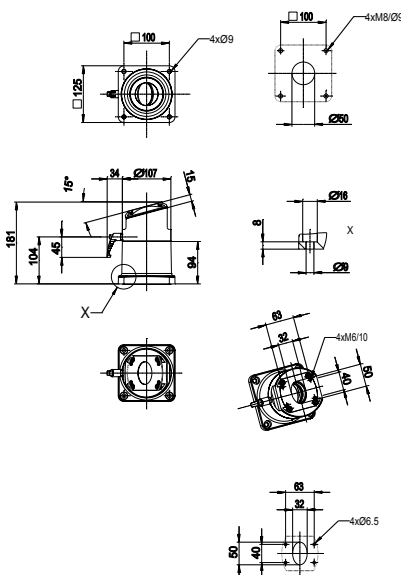
Swivel angle limiter 9805296000
Swivel angle limiter 9805296000
Swivel angle limiter 9805296000


Suspension System CS-3000

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



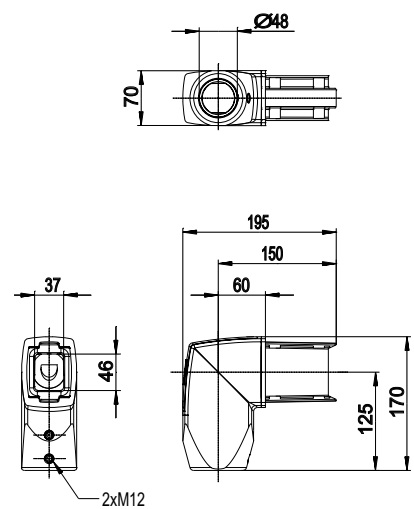
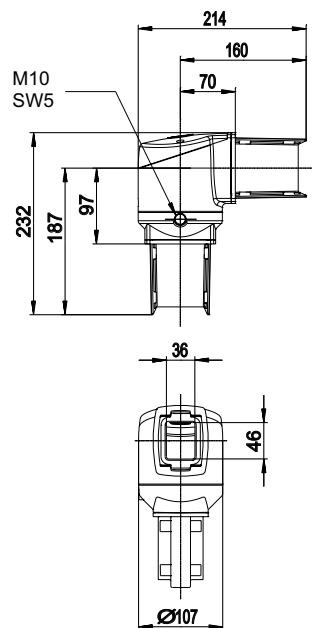
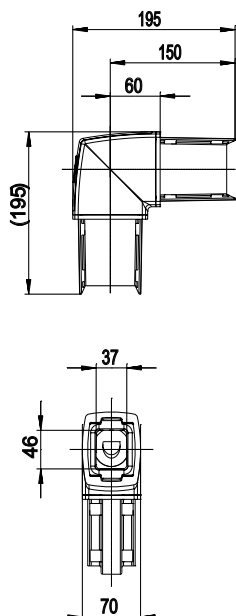
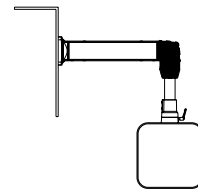
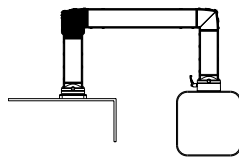
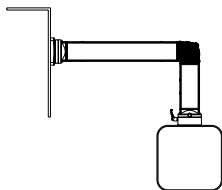
Details	<p>Customised coupling for Siemens SIMATIC Pro®, angle of rotation 300° with stop, fixed tilt of 15° (variant A tilted back, variant B tilted forward)</p> <p>1015300080 Tilt base coupling 15° A 1015300081 Tilt base coupling 15° B</p>	<p>Used only together with couplings, infinitely variable tilt up to 30°, maximum load max. 300 N, not compatible with 1013050000, as well as Siemens SIMATIC Pro® couplings</p>
Weight in g	2470	1840
Material	Aluminium	Aluminium
Accessories (retrofitable)	<p>Swivel angle limiter 9805296000</p>	
Application example		
Dimensions in mm		



Elbow		Elbo, rotary		Elbow, reduced RD 48	
1015300008	RAL 7016 anthracite grey	1015300009	RAL 7016 anthracite grey	1015300020	RAL 7016 anthracite grey



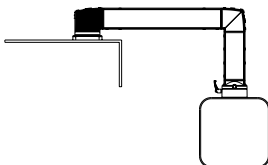
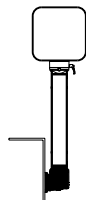
With installation opening including screw-fit plastic cover	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover	Reducer elbow from the square tube to 48 mm round tube
1680	2460	1920
Aluminium	Aluminium	Aluminium
	Swivel angle limiter 9805296000	

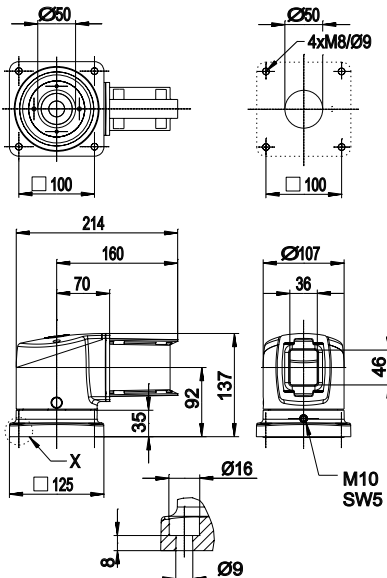
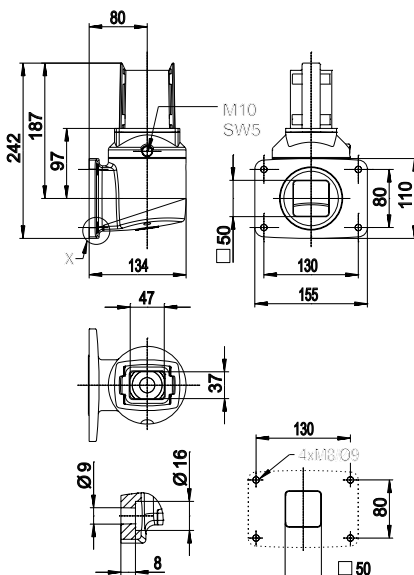


Suspension System CS-3000

Article		Top joint	Wall joint S
Article number	(colour)	1015300003RAL 7016 anthracite grey	1015300006RAL 7016 anthracite grey



Details	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover	Angle of rotation 300° with stop, installation opening including screw-fit plastic cover
Weight in g	2250	2450
Material	Aluminium	Aluminium
Accessories (retrofitable)	Swivel angle limiter 9805296000	Swivel angle limiter 9805296000
Application example		

Dimensions in mm		
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Wall joint W
1015300007

RAL 7016 anthracite grey

Intermediate joint
1015300004

RAL 7016 anthracite grey

CS-3000 HV module, vertically adjustable
See Details

RAL 7016/anodised aluminium



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

2930

Aluminium

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

2940

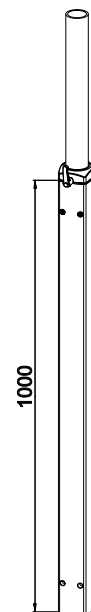
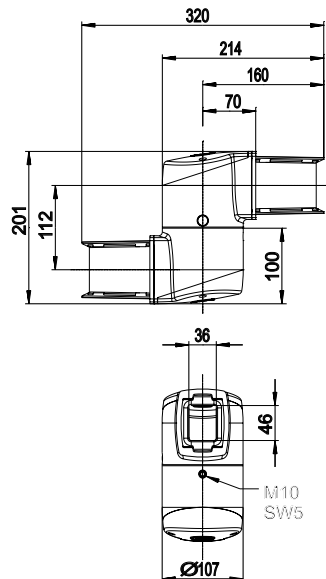
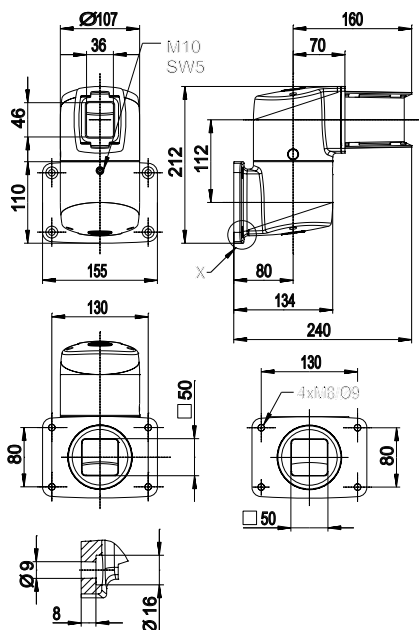
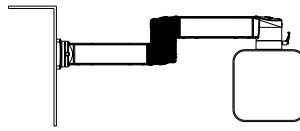
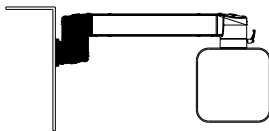
Aluminium

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 Page 132 for detailed information on selection of suitable damper force.

7030

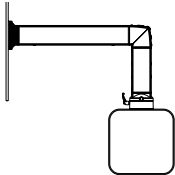
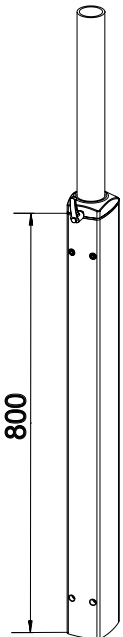
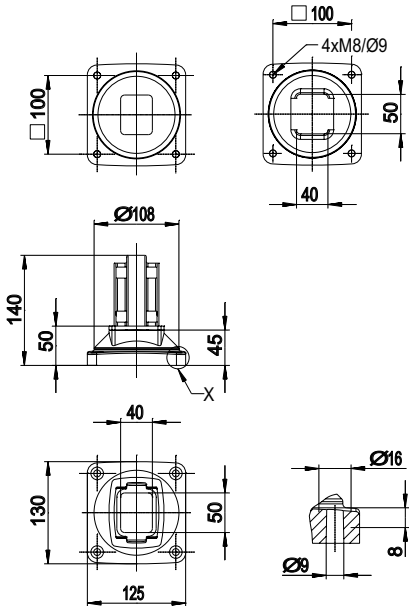
Aluminium

Swivel angle limiter
9805296000
Swivel angle limiter
9805296000


Suspension System CS-3000

Article		CS-3000 HV module, vertically adjustable	Base/wall flange
Article number	(colour)	See Details RAL 7016/anodised aluminium	1015300010 RAL 7016 anthracite grey



Details	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 132 for detailed information on selection of suitable damper force.	
Weight in g	6020	1300
Material	Aluminium	Aluminium
Accessories (retrofitable)		
Application example		
Dimensions in mm		

Base, rotary
1015300005

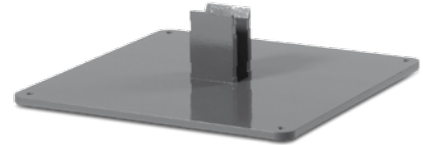
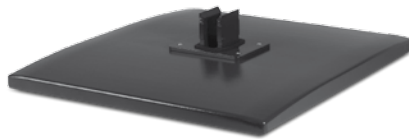
RAL 7016 anthracite grey

Large free-standing base
1015300027

RAL 7016 anthracite grey

Small free-standing base
1015300028

RAL 7016 anthracite grey



Angle of rotation 300° with stop

1780

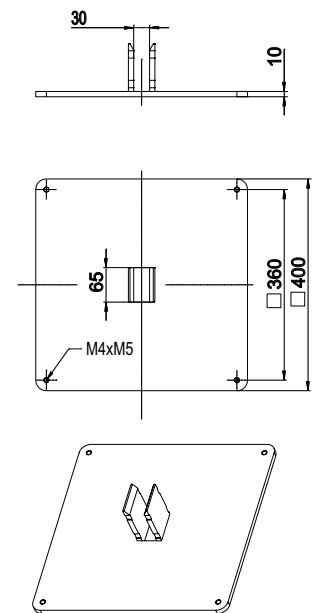
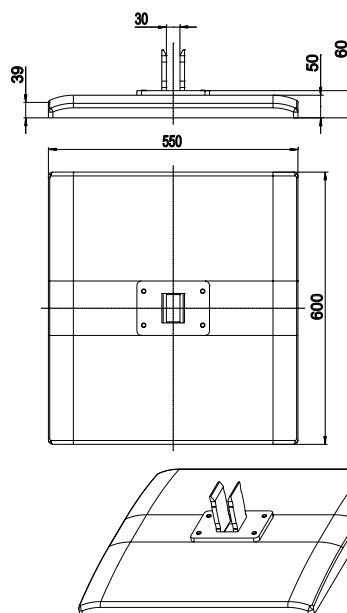
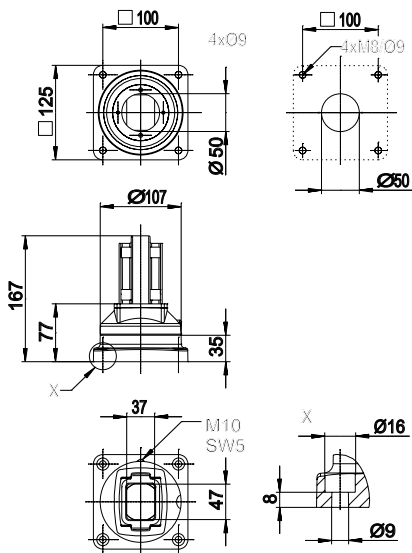
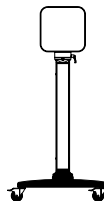
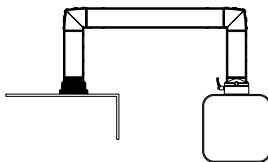
Aluminium

11660

Aluminium

13220

Aluminium

Swivel angle limiter
9805296000





Suspension System CS-3000


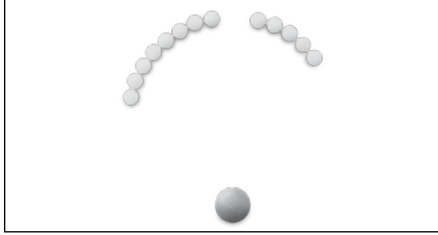

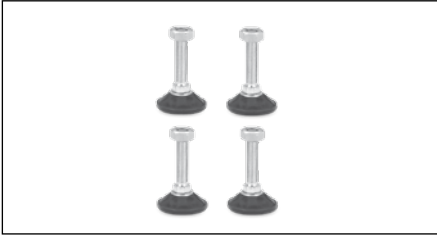
Article		Tube adapter	Adapter (narrow section)
Article number	(colour)	1015300039RAL 7016 anthracite grey	1015300011RAL 7016 anthracite grey



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 adapter.	Only to be used together with couplings (for attachment to BERNSTEIN enclosures with depths <120 mm)
Weight in g	720	300
Material	Aluminium	Aluminium
Accessories (retrofitable)		
Application example		
Dimensions in mm		

Accessories for Suspension System CS-3000

Article Article number	Adapter flange 9806649000	Adapter plate 9806678000
		
Design	For enclosure with door section and/or keyboard.	For connecting adapter flange to coupling 48
Article Article number	Set of caps 9806590000	Industrial castors 9808012800
		
Design	Plastic caps similar to RAL 9006 for closing off the hexagon sockets on tube mounting screws. Set of 50	Set of castors, consisting of 4 swivel castors with brake. Load-bearing capacity of each castor 50 kg

CS-3000 Signal lamp adapter See specification	Adapter plate 9806520000	Swivel angle limiter 9805296000
		
For connecting commercially available 25 mm diameter signal lamps to CS-3000 suspension system components 9805317000 joint components 9805318000 elbow components	Required together with coupling RD 48 for attachment to CC-4000 section 80	Retrofit swivel angle limiter for coupling and joint components for CS-3000 system. Adjustable in steps of 13.7°. Contains ten ø 10 mm steel balls
Equipment castors 9808015300	Support feet 9808012900	Floor anchoring brackets 9808014100
		
Set of castors, consisting of 2 swivel castors and 2 swivel castors with brake for free-standing bases. Load-bearing capacity of each castor 70 kg	Vertically adjustable feet (4x) for free-standing bases.	Set of floor anchoring brackets for large base