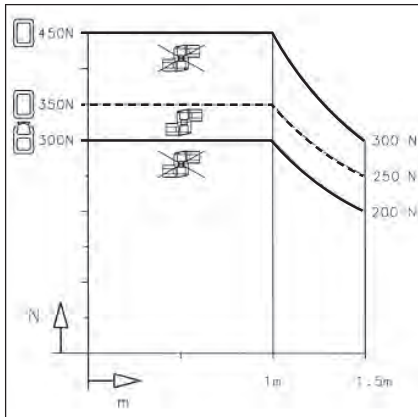


The CS-2000 SL light-duty suspension system is specially designed for accepting small, lightweight control enclosures and features short extension arms. In addition to the components in light grey RAL 7035, a new version in anthracite grey RAL 7016 is now available that elegantly complements our CC-3000 and CC-4000 / CC-4000 SL control enclosures (see Page 72 onwards).

## System structure

Individual components of the suspension system are combined with an optionally closed or partially open aluminium connection section to achieve the required configuration in accordance with the load diagram (with the exception of panel couplings).



## Load diagram

The above diagram shows the load bearing capacity of the CS-2000 SL range of suspension systems (with the exception of panel couplings).

The load bearing capacity of the system changes depending on the type of connecting section used (partially open or closed) or whether an intermediate joint is used.

The following safety factor generally applies: With an additional load of 75 kg, the suspension system can be subjected to load for 5 seconds without plastic deformation occurring.

The overview on Pages 106 / 107 is designed to help you determine the load bearing capacity of all BERNSTEIN suspension systems.



CS-2000 SL Standard  
RAL 7035 light grey and  
RAL 7016 anthracite grey

## Materials

- Components: cast aluminium
- Installation opening: POM
- Bearing: POM
- Seals: CR
- Extruded aluminium connecting section
- Connecting section covers on open section: EPDM

## Colours

- Suspension system components: light grey RAL 7035  
alternatively: anthracite grey RAL 7016
- Connecting section: silver (natural) anodised

## System features

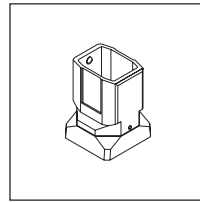
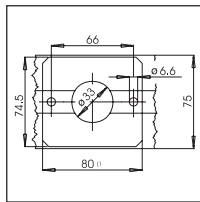
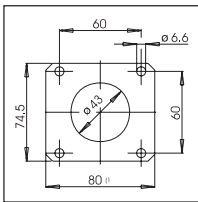
Installation opening at all joints

- Optionally closed or open connecting section can be used
- Clear passage opening in closed system:  $\varnothing 40 \text{ mm} = 12.5 \text{ cm}^2$  at narrowest point (bearing opening)
- Clear passage opening in partially open system:
  - $2.76 \text{ cm}^2$  at narrowest point (entry of section in components)
  - $7.40 \text{ cm}^2$  in closed tube
- Easily retrofitable swivel angle limitation on couplings and joints
- Couplings have a small narrow flange for mounting on very narrow enclosures
- Overhead installation of all components possible
- Modern industrial design
- Protection class IP 65 (closed aluminium connection section)

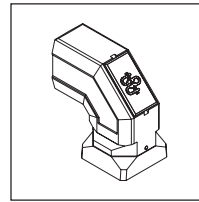
**Enclosure preparation for mounting couplings**

The geometry of the flange on the straight coupling and on the elbow coupling makes it possible to mount even extremely narrow enclosures. Two centrally arranged threads, with which the coupling is secured to narrow enclosures, are additionally provided for this purpose.

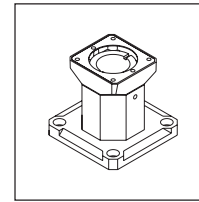
However, the coupling is mounted as standard by means of the four outer flange mounting threads, compatible and interchangeable with the flange mounting pattern of the CS-3000 suspension system. With a diameter of 43 mm, the hole for the cable leadthrough is adapted to the narrowest point in the suspension system (a minimum diameter of 40 mm is available in the bearing opening in the components).



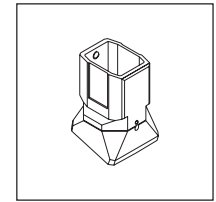
**Straight coupling**  
Article number  
1015163000  
1015328000



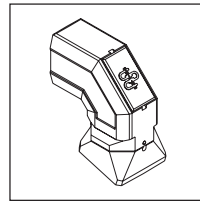
**Elbow coupling**  
Article number  
1015165000  
1015329000



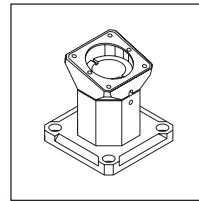
**Base coupling**  
Article number  
1015167000  
1015343000



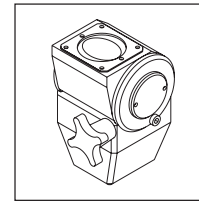
**Tilt coupling**  
Article number  
1015164000  
1015330000



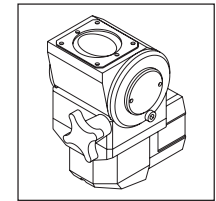
**Tilt elbow coupling**  
Article number  
1015166000  
1015331000



**Tilt base coupling**  
Article number  
1015168000  
1015344000



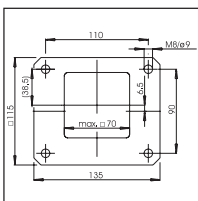
**Turn/tilt coupling**  
Article number  
1015169000  
1015332000



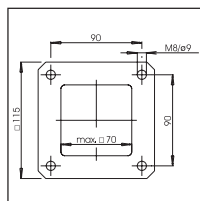
**Turn/tilt elbow coupling**  
Article number  
1015170000  
1015333000

**Machining mounting surfaces for suspension systems**

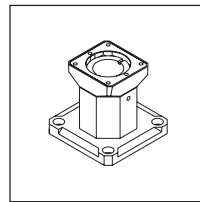
The various elements of the suspension systems can be mounted on walls or floors as well as on or at machines and systems. The corresponding machining drawings for the individual components of the suspension system are shown here.



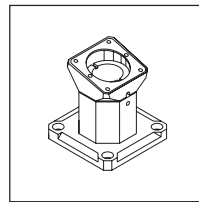
**Wall joints**



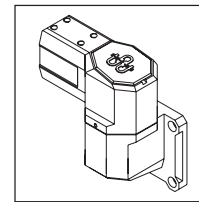
**Base and top joint components**



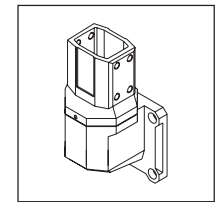
**Base coupling**  
Article number  
1015167000  
1015343000



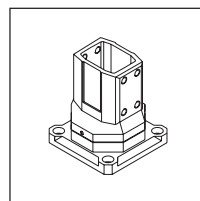
**Tilt base coupling**  
Article number  
1015168000  
1015344000



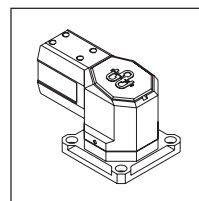
**Wall joint, horizontal outlet**  
Article number  
1015176000  
1015339000



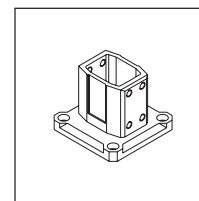
**Wall joint, vertical outlet**  
Article number  
1015177000  
1015338000



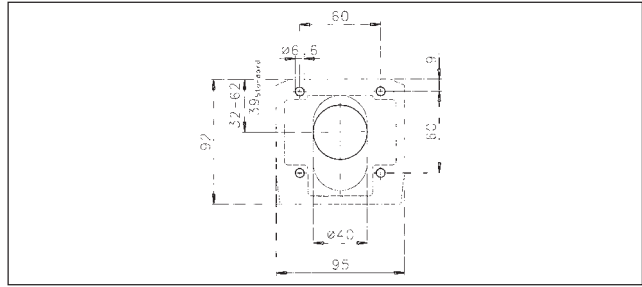
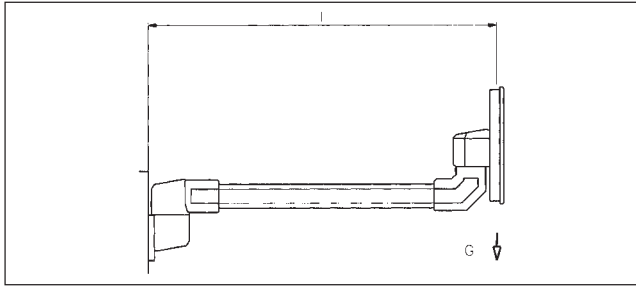
**Rotary base**  
Article number  
1015178000  
1015341000



**Top joint**  
Article number  
1015175000  
1015340000



**Base/wall flange**  
Article number  
1015179000  
1015342000



**Load, panel components**

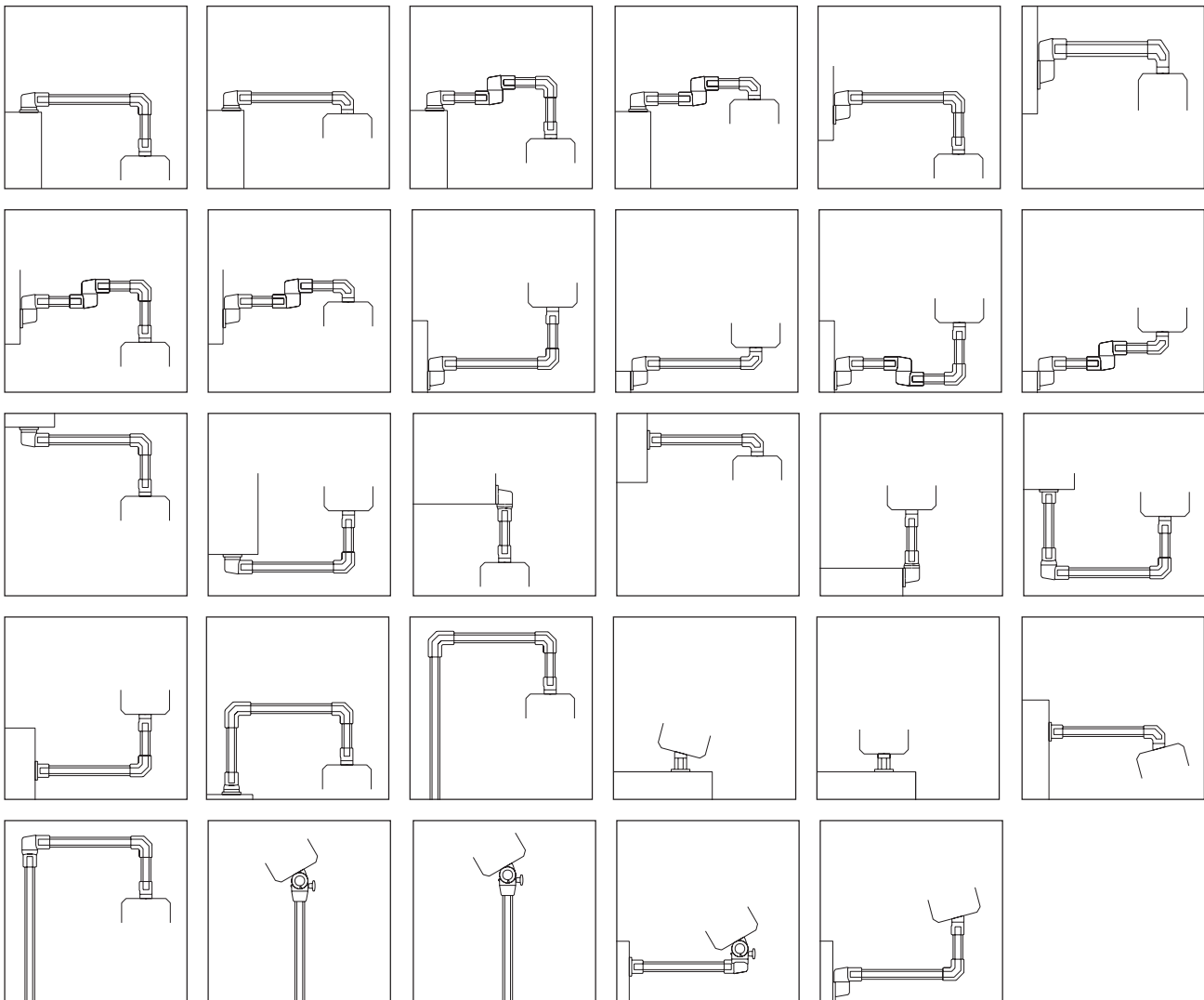
Drawing for preparing enclosure rear panel for attaching panel couplings

**Mechanical properties**

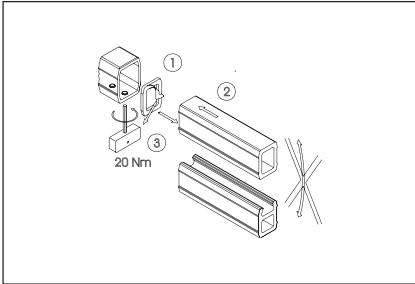
Max. load G 250 N  
Max. System length L 1500 mm

**System combinations**

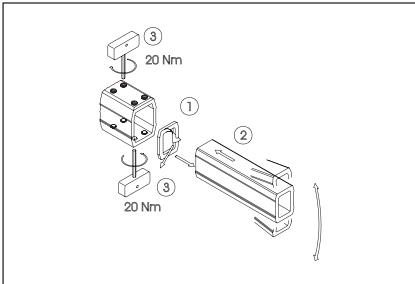
The large number of components and different versions of the connecting sections enable many different combinations. A selection of the possible configuration is shown below



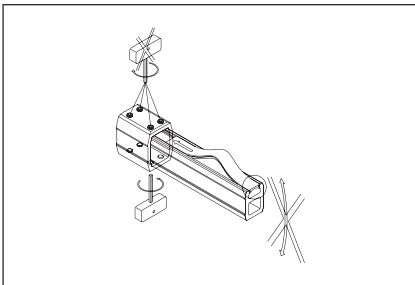
**Assembling the connecting sections**



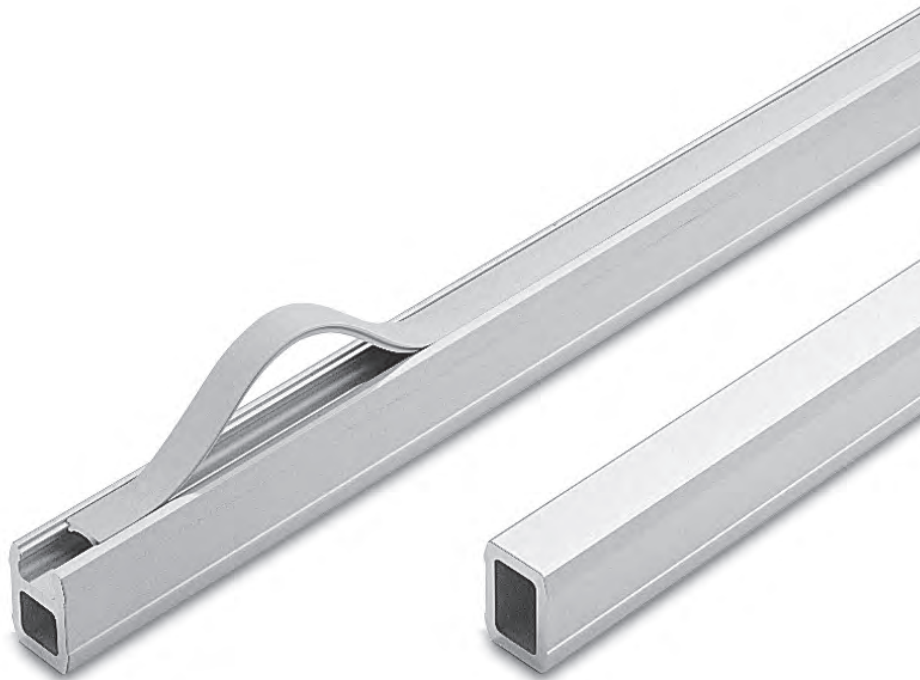
[A] Open or closed section in straight coupling and elbow coupling:  
Adhere seal to connecting section (1), fit connecting section in suspension system component (2, 3).



[B] Closed section in suspension system components with eight mounting screws:  
Adhere seal to connecting section (1), fit connecting section in suspension system component (2, 3) while adjusting the section.



[C] Open section in suspension system components with eight mounting screws:  
Adhere seal to connecting section, fit connecting section in suspension system component, only fit the four mounting screws on the closed part of the tubing, install cover seal.

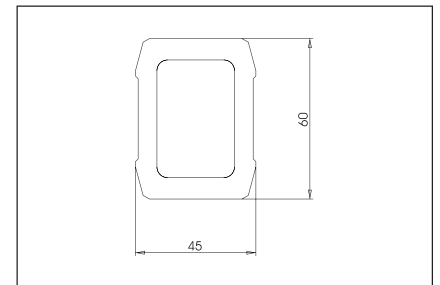
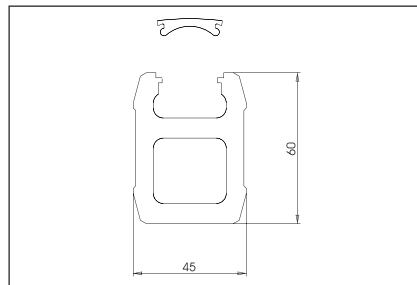


**Connecting sections**

The connecting section is a drawn aluminium AlMgSi 0.5 bar. The surface is anodised and therefore corresponds to a colour similar to RAL 9006. The connecting section can be used both in open as well as in completely closed cable ducts. The partly open section has an EPDM cover, coloured similar to RAL 7042. This flexible plastic cover can be easily withdrawn and reinserted.

| Open section    |                   |
|-----------------|-------------------|
| Dimensions (mm) | Article number    |
| 45 x 60 x 250   | <b>9524001000</b> |
| 45 x 60 x 500   | <b>9524002000</b> |
| 45 x 60 x 750   | <b>9524003000</b> |
| 45 x 60 x 1000  | <b>9524004000</b> |
| 45 x 60 x 1250  | <b>9524005000</b> |
| 45 x 60 x 1500  | <b>9524006000</b> |
| 45 x 60 x 2000  | <b>9524008000</b> |

| Closed section  |                   |
|-----------------|-------------------|
| Dimensions (mm) | Article number    |
| 45 x 60 x 250   | <b>9524301000</b> |
| 45 x 60 x 500   | <b>9524302000</b> |
| 45 x 60 x 750   | <b>9524303000</b> |
| 45 x 60 x 1000  | <b>9524304000</b> |
| 45 x 60 x 1250  | <b>9524305000</b> |
| 45 x 60 x 1500  | <b>9524306000</b> |
| 45 x 60 x 2000  | <b>9524308000</b> |

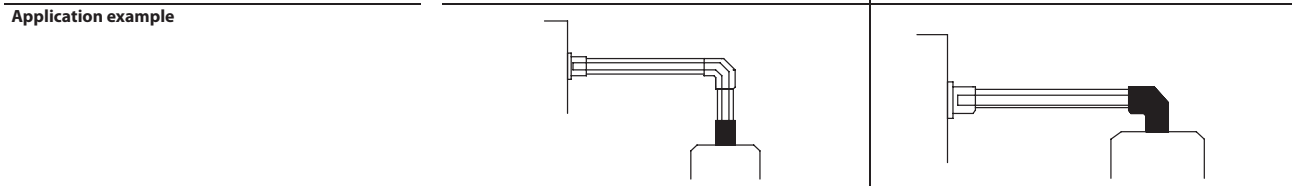


You will find an aid for selecting the load bearing capacity on Pages 106/ 107.

| Article        |          | Straight coupling CS-2000 SL  | Elbow coupling CS-2000 SL   |
|----------------|----------|---|---|
| Article number | (colour) | <b>1015163000</b> RAL 7035 light grey<br><b>1015328000</b> RAL 7016 anthracite grey | <b>1015165000</b> RAL 7035 light grey<br><b>1015329000</b> RAL 7016 anthracite grey |



|                            |   |  |
|----------------------------|---|--|
| Details                    | Angle of rotation 300° with stop. Complete with installation material and seals | Installation opening with snap-on plastic cover. Angle of rotation 300° with stop. Complete with installation material and seals |
| Weight in lbs. (g)         | 1.6 (740)   | 2.1 (960)  |
| Material                   | Aluminium   | Aluminium  |
| Accessories (retrofitable) | <b>Swivel angle limiter 9805129000</b>  | <b>Swivel angle limiter 9805129000</b>   |



**Dimensions in mm**

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |

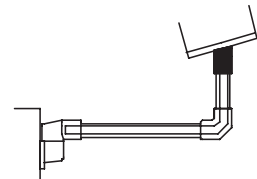
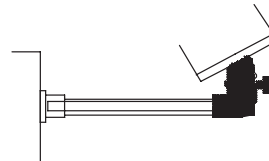
| Turn/tilt coupling CS-2000 SL |                          | Turn/tilt elbow coupling CS-2000 SL |                          | Tilt coupling CS-2000 SL |                          |
|-------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| <b>1015169000</b>             | RAL 7035 light grey      | <b>1015170000</b>                   | RAL 7035 light grey      | <b>1015164000</b>        | RAL 7035 light grey      |
| <b>1015332000</b>             | RAL 7016 anthracite grey | <b>1015333000</b>                   | RAL 7016 anthracite grey | <b>1015330000</b>        | RAL 7016 anthracite grey |



|  |  |   |
|--|--|---|
| Angle of rotation 300° with stop. Infinitely variable inclination from 0 to 30°. Complete with installation material and seals. Enclosure max. 300 N | Angle of rotation 300° with stop. Infinitely variable inclination from 0 to 30°. Complete with installation material and seals. Enclosure max. 300 N | Tilt angle 15°. Angle of rotation 300° with stop. Complete with installation material and seals |
|--|--|---|

|            |            |            |
|------------|------------|------------|
| 6.6 (3000) | 7.3 (3300) | 2.4 (1100) |
| Aluminium  | Aluminium  | Aluminium  |

|                             |                   |                             |                   |                             |                   |
|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|
| <b>Swivel angle limiter</b> | <b>9805130000</b> | <b>Swivel angle limiter</b> | <b>9805130000</b> | <b>Swivel angle limiter</b> | <b>9805129000</b> |
|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|



|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

| Article        |          | Tilt elbow coupling CS-2000 SL  | Base coupling CS-2000 SL  |
|----------------|----------|---|---|
| Article number | (colour) | <b>1015166000</b> RAL 7035 light grey<br><b>1015331000</b> RAL 7016 anthracite grey | <b>1015167000</b> RAL 7035 light grey<br><b>1015343000</b> RAL 7016 anthracite grey |



|                            |  |   |
|----------------------------|--|---|
| Details                    | Tilt angle 15°. Installation opening with snap-on plastic cover. Angle of rotation 300° with stop. Complete with installation material and seals | Integrated component. Angle of rotation 300° with stop. Complete with installation material for enclosure and seals |
| Weight in lbs. (g)         | 3.1 (1400)   | 2.6 (1180)  |
| Material                   | Aluminium  | Aluminium   |
| Accessories (retrofitable) | <b>Swivel angle limiter 9805129000</b>   | <b>Swivel angle limiter 9805129000</b>  |

| Application example |  |  |
|---------------------|--|--|
|                     |  |  |

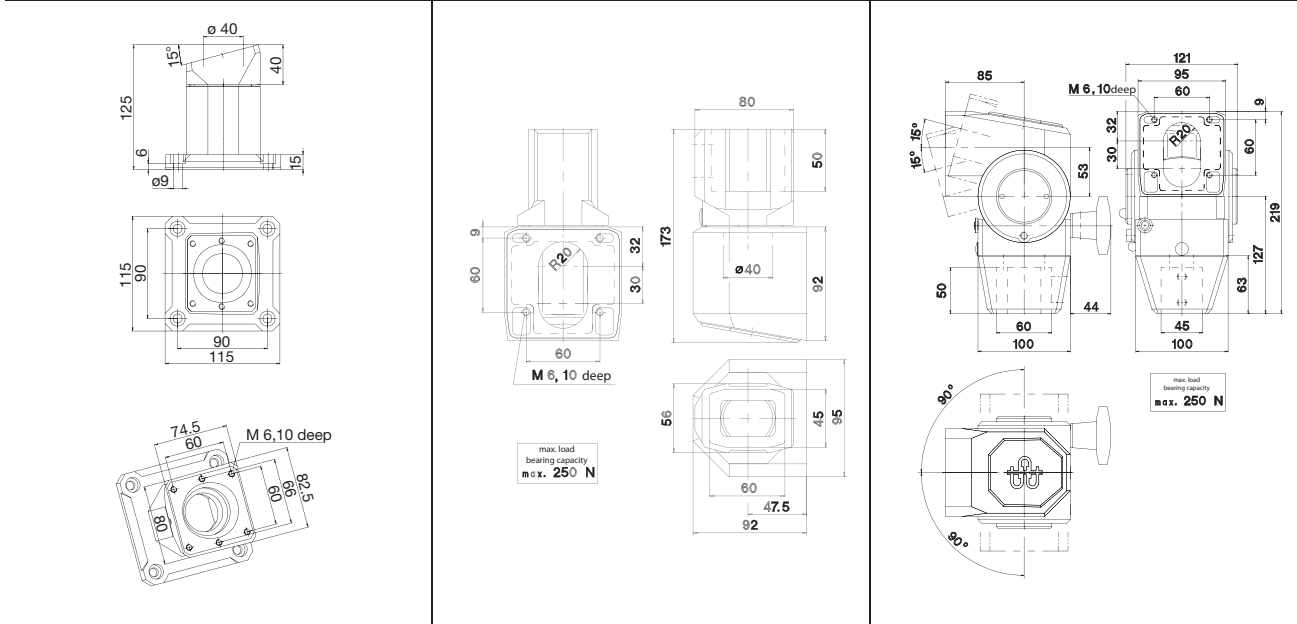
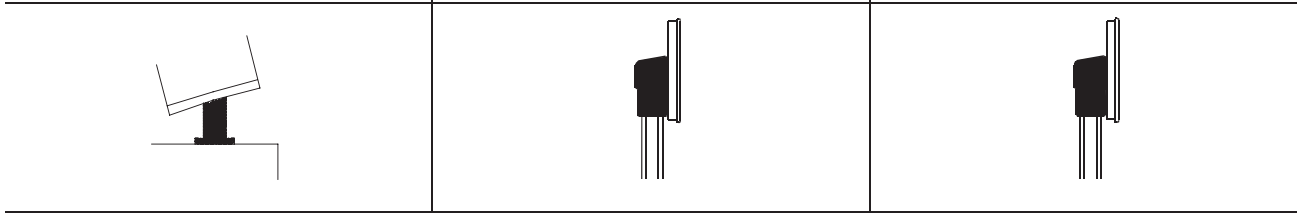
| Dimensions in mm |  |  |
|------------------|--|--|
|                  |  |  |

| Tilt base coupling CS-2000 SL |                          | Panel coupling    |                          | Panel turn/tilt coupling S |                          |
|-------------------------------|--------------------------|-------------------|--------------------------|----------------------------|--------------------------|
| <b>1015168000</b>             | RAL 7035 light grey      | <b>1015232000</b> | RAL 7035 light grey      | <b>1015235000</b>          | RAL 7035 light grey      |
| <b>1015344000</b>             | RAL 7016 anthracite grey | <b>1015346000</b> | RAL 7016 anthracite grey | <b>1015347000</b>          | RAL 7016 anthracite grey |



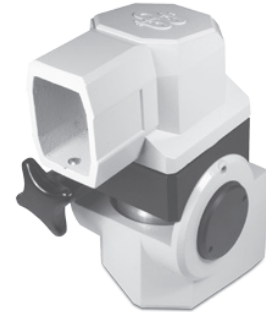
|   |   |   |
|---|---|---|
| Integrated component. Angle of rotation 300° with stop. Fixed inclination of 15°. Complete with installation material for enclosure and seals | For rear connection of narrow and lightweight controller panels to the CS-2000 SL light-duty suspension system; the maximum load of this component is 250 N at a maximum system length of 1500 mm | For rear connection of narrow and lightweight controller panels to the CS-2000 SL light-duty suspension system; the maximum load of this component is 250 N at a maximum system length of 1500 mm |
| 2.6 (1200)  | 6.6 (3000)  | 7.5 (3400)  |
| Aluminium   | Aluminium   | Aluminium   |

|                             |                   |  |
|-----------------------------|-------------------|--|
| <b>Swivel angle limiter</b> | <b>9805129000</b> |  |
|-----------------------------|-------------------|--|






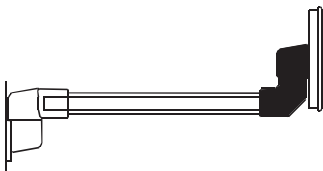
| Article                 | Panel elbow coupling  | Panel tilt/turn elbow coupling W                                      |
|-------------------------|---|---|
| Article number (colour) | 1015233000 RAL 7035 light grey<br>1015348000 RAL 7016 anthracite grey | 1015236000 RAL 7035 light grey<br>1015349000 RAL 7016 anthracite grey |

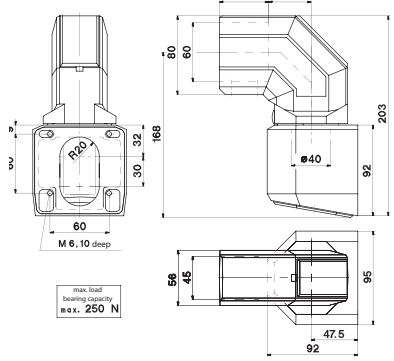
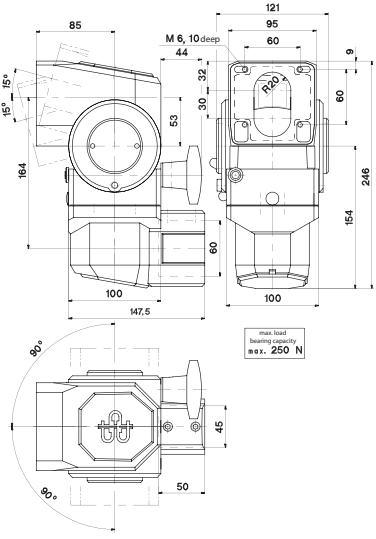


|         |   |   |
|---------|---|---|
| Details | For rear connection of narrow and lightweight controller panels to the CS-2000 SL light-duty suspension system; the maximum load of this component is 250 N at a maximum system length of 1500 mm | For rear connection of narrow and lightweight controller panels to the CS-2000 SL light-duty suspension system; the maximum load of this component is 250 N at a maximum system length of 1500 mm |
|---------|---|---|

|                    |            |            |
|--------------------|------------|------------|
| Weight in lbs. (g) | 6.6 (3000) | 7.6 (3460) |
| Material           | Aluminium  | Aluminium  |

|                            |  |  |
|----------------------------|--|--|
| Accessories (retrofitable) |  |  |
|                            |  |  |

|                     |   |   |
|---------------------|---|---|
| Application example |  |  |
|---------------------|---|---|

|                  |   |   |
|------------------|---|---|
| Dimensions in mm |  |  |
|------------------|---|---|

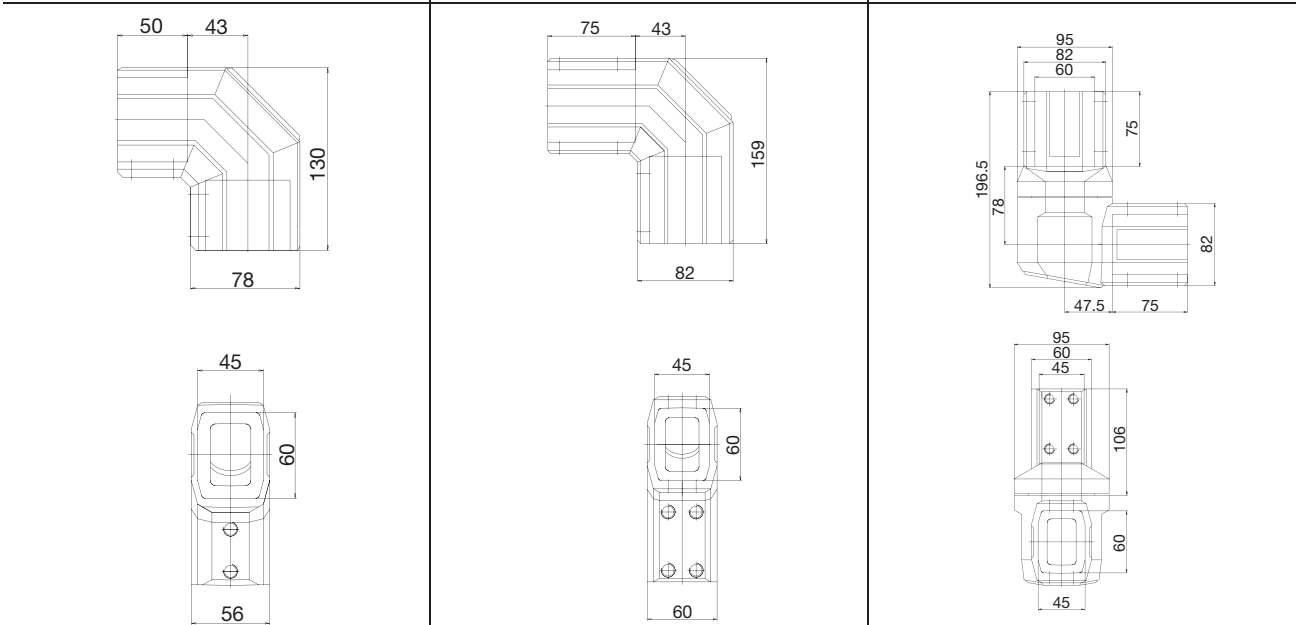
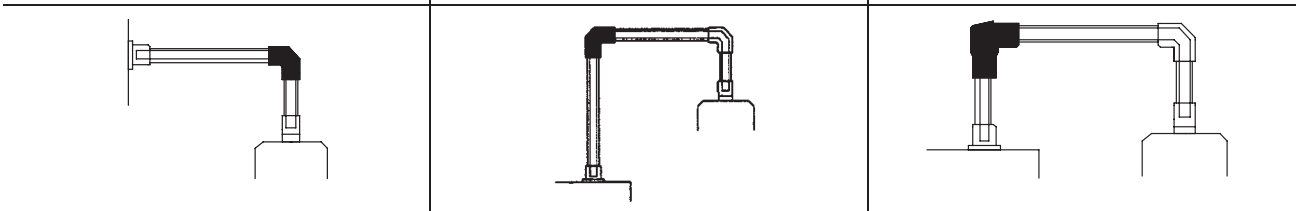
|                         |                         |   |                          |                                 |                          |
|-------------------------|-------------------------|---|--------------------------|---------------------------------|--------------------------|
| <b>Elbow CS-2000 SL</b> |                         | <b>Elbow for torque load CS-2000 SL</b> |                          | <b>Plug-on joint CS-2000 SL</b> |                          |
| <b>1015171000</b>       | RAL 7035 light grey     | <b>1015172000</b>                       | RAL 7035 light grey      | <b>1015173000</b>               | RAL 7035 light grey      |
| <b>1015334000</b>       | RAL 7016 anthrazit-grau | <b>1015335000</b>                       | RAL 7016 anthracite grey | <b>1015337000</b>               | RAL 7016 anthracite grey |



|  |  |   |
|--|--|---|
| Installation opening with snap-on plastic cover. Complete with seals | Increased wall strength. Adjustment facility. Installation opening with snap-on plastic cover. Complete with seals | Swivel angle 300° with stop. Installation opening with snap-on plastic cover. Complete with seals |
|--|--|---|

|           |            |            |
|-----------|------------|------------|
| 1.3 (590) | 2.2 (1000) | 4.1 (1850) |
| Aluminium | Aluminium  | Aluminium  |


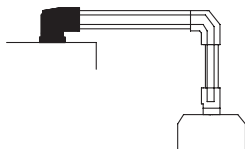
|  |  |   |
|--|--|---|
|  |  | <b>Swivel angle limiter</b> <b>9805132000</b> |
|--|--|---|

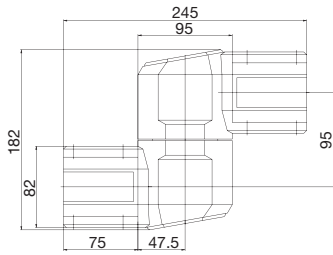
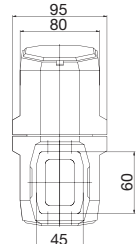
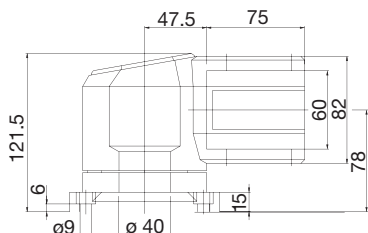
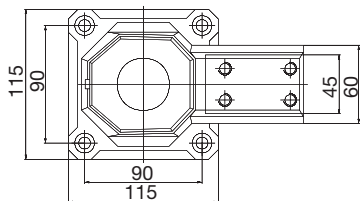


| Article        |          | Intermediate joint CS-2000 SL   | Top joint CS-2000 SL  |
|----------------|----------|---|---|
| Article number | (colour) | <b>1015174000</b> RAL 7035 light grey<br><b>1015336000</b> RAL 7016 anthracite grey | <b>1015175000</b> RAL 7035 light grey<br><b>1015340000</b> RAL 7016 anthracite grey |



|                            |  |  |
|----------------------------|--|--|
| Details                    | Swivel angle 360° with limit stop. Installation openings both ends. Adjustment facility. Complete with seals | Swivel angle 300° with stop. Adjustment facility. Installation opening with snap-on plastic cover. Complete with seals |
| Weight in lbs. (g)         | 4.7 (2130)   | 3.8 (1720)   |
| Material                   | Aluminium  | Aluminium  |
| Accessories (retrofitable) | <b>Swivel angle limiter 9805132000</b>   | <b>Swivel angle limiter 9805132000</b>   |

|                     |   |   |
|---------------------|---|---|
| Application example |  |  |
|---------------------|---|---|

|                  |  |  |
|------------------|--|--|
| Dimensions in mm | <br> | <br> |
|------------------|--|--|

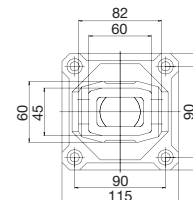
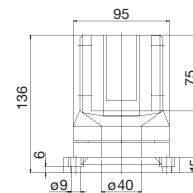
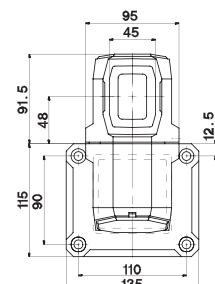
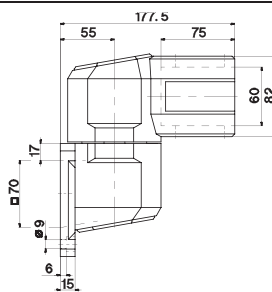
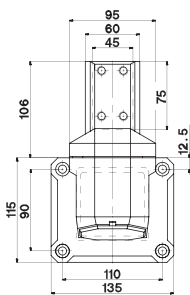
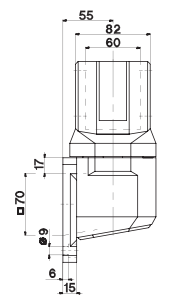
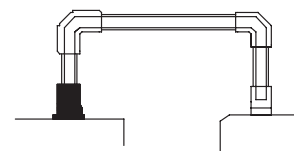
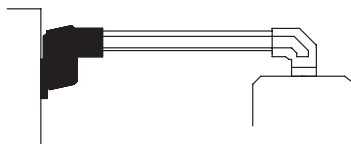
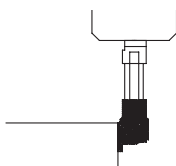
| Wall joint, vertical outlet CS-2000 SL |                          | Wall joint, horizontal outlet CS-2000 SL |                          | Base, rotary CS-2000 SL |                          |
|--|--------------------------|--|--------------------------|-------------------------|--------------------------|
| <b>1015177000</b>                      | RAL 7035 light grey      | <b>1015176000</b>                        | RAL 7035 light grey      | <b>1015178000</b>       | RAL 7035 light grey      |
| <b>1015338000</b>                      | RAL 7016 anthracite grey | <b>1015339000</b>                        | RAL 7016 anthracite grey | <b>1015341000</b>       | RAL 7016 anthracite grey |



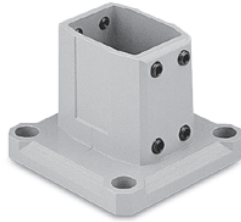
|  |  |   |
|--|--|---|
| Swivel angle 300° with stop. Adjustment facility. Installation opening with snap-on plastic cover. Complete with seals | Swivel angle 300° with stop. Adjustment facility. Installation opening with snap-on plastic cover. Complete with seals | Angle of rotation 300° with stop Adjustment facility. Complete with seals |
|--|--|---|

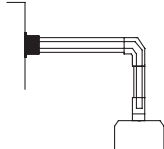
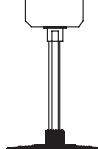
|            |            |            |
|------------|------------|------------|
| 4.1 (1840) | 4.6 (2090) | 3.2 (1460) |
| Aluminium  | Aluminium  | Aluminium  |

|                             |                   |                             |                   |                             |                   |
|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|
| <b>Swivel angle limiter</b> | <b>9805132000</b> | <b>Swivel angle limiter</b> | <b>9805132000</b> | <b>Swivel angle limiter</b> | <b>9805132000</b> |
|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|

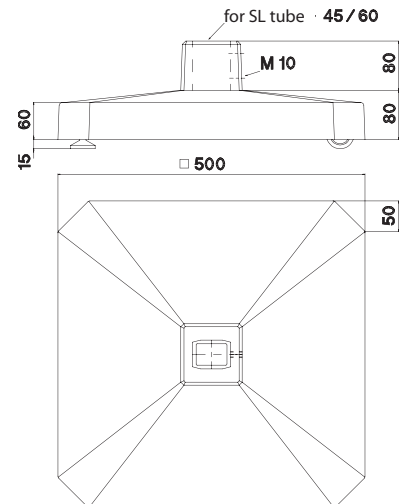
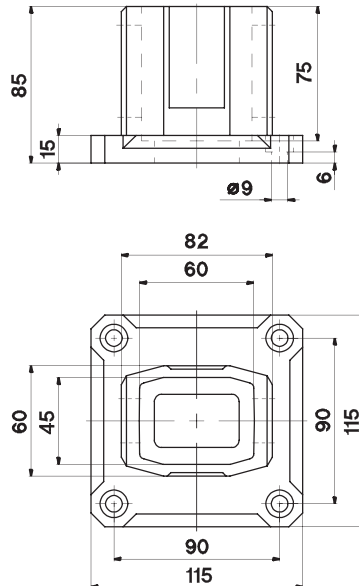


| Article        |          | Base, wall flange CS-2000 SL |                          | Free-standing base CS-2000 SL |                          |
|----------------|----------|------------------------------|--------------------------|-------------------------------|--------------------------|
| Article number | (colour) | 1015179000                   | RAL 7035 light grey      | 1015180000                    | RAL 7035 light grey      |
|                |          | 1015342000                   | RAL 7016 anthracite grey | 1015345000                    | RAL 7016 anthracite grey |



|                            |   |   |
|----------------------------|---|---|
| Details                    | Adjustment facility. Complete with seals  | Base for free-standing applications   |
| Weight in lbs. (g)         | 1.5 (690)   | 26.1 (11820)  |
| Material                   | Aluminium   | Aluminium   |
| Accessories (retrofitable) |   |   |
|                            |   |   |
| Application example        |  |  |

Dimensions in mm





## **BERNSTEIN Aluminium Suspension Systems** **CS-3000 and CS-3000** *next*

Flexible, easy to assemble, ergonomic

## Flexibility in operation and monitoring: The BERNSTEIN CS-3000 Family

In the main, system constructors expect modern suspension systems to feature variable configuration, progressive design and complete ease of installation. BERNSTEIN sets standards with the CS-3000 family: Modern industrial design, well-conceived ergonomics and multiple component combinations to create an innovative system solution on a modular principle.



### Product features

- Long service life and safe operation thanks to anodised aluminium tubes
- Clean lines, thanks to smooth transitions between the tube and system components (very easy to clean)
- Coated tube fastening screws for sealing the thread holes and secure connections
- Relative appearance and connection of narrow profiles thanks to the possibility of reducing the cross section from square to round tube
- Protection class IP 65
- Modular flexible system lets you upgrade the couplings (also after installation), e.g. with adapters for slim enclosures or with tilt adapters
- Well designed ergonomics for simple and virtually fatigue free operation
- An ideal solution from a single source with BERNSTEIN control enclosures

## Assembly

Thanks to the particularly easy way the CS-3000 family components combine, assembly is quick and simple, which for the system builder means great time savings and cost reductions.



Smooth combination through an intelligent design for easy-cleaning



Additional connection security through component design at the mounting area



User friendly adjustment at any time – without disassembling the complete system

### In addition to the 'clamping' connection of the tube fastening screws:

- Sixfold positive connection is achieved via component design in the tube attachment area (optional additional safety screw for vertical mounting is not required)
- One person can install the complete system
- Stepless adjustment of system alignment by means of the tube fastening screws
- Readjustment possible at any time without disassembling the complete system
- Cable and assembly access covers on all deflection points in the system
- Different tube lengths offer the possibility of variability in assembly
- Tubes machined at one end so that users can cut to required length (machining templates supplied)