

## Selection Chart



Locknut



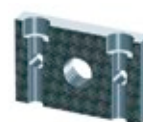
Stop Collar



Clamp Mount

<sup>1</sup> Mounting Block

Rectangular Flange



Universal Mount

| Shock Absorber Type | KM       | AH       | MB   | MBSC2       | RF   | UM   |
|---------------------|----------|----------|------|-------------|------|------|
| Thread M5x0.5       |          |          |      |             |      |      |
| MC5EUM              | KM5      | AH5      | —    | MB5SC2      | —    | —    |
| Thread M6x0.5       |          |          |      |             |      |      |
| MC9EUM              | KM6      | AH6      | —    | MB6SC2      | RF6  | —    |
| Thread M8x1         |          |          |      |             |      |      |
| MA30EUM             | KM8      | AH8      | —    | MB8SC2      | RF8  | —    |
| MC10EUM             | KM8      | AH8      | —    | MB8SC2      | RF8  | —    |
| MC30EUM             | KM8      | AH8      | —    | MB8SC2      | RF8  | —    |
| Thread M10x1        |          |          |      |             |      |      |
| MA50EUM             | KM10     | AH10     | —    | MB10SC2     | RF10 | UM10 |
| MC25EUM             | KM10     | AH10     | —    | MB10SC2     | RF10 | UM10 |
| SC25EUM; 5 bis 7    | KM10     | AH10     | —    | MB10SC2     | RF10 | UM10 |
| Thread M12x1        |          |          |      |             |      |      |
| MA35EUM             | KM12     | AH12     | MB12 | —           | RF12 | UM12 |
| MC75EUM             | KM12     | AH12     | MB12 | —           | RF12 | UM12 |
| SC75EUM; 5 bis 7    | KM12     | AH12     | —    | MB12SC2     | RF12 | UM12 |
| Thread M14x1.5      |          |          |      |             |      |      |
| MA150EUM            | KM14     | AH14     | MB14 | —           | RF14 | UM14 |
| MC150EUM            | KM14     | AH14     | MB14 | —           | RF14 | UM14 |
| MC150EUM-V4A        | KM14-V4A | AH14-V4A | —    | MB14SC2-V4A | —    | —    |
| PMCN150EUM          | KM14     | —        | MB14 | —           | RF14 | UM14 |
| PMCN150EUM-V4A      | KM14-V4A | —        | —    | MB14SC2-V4A | —    | —    |
| SC190EUM; 0 bis 4   | KM14     | AH14     | MB14 | —           | RF14 | UM14 |
| SC190EUM; 5 bis 7   | KM14     | AH14     | —    | MB14SC2     | RF14 | UM14 |
| Thread M20x1.5      |          |          |      |             |      |      |
| MA225EUM            | KM20     | AH20     | MB20 | —           | RF20 | UM20 |
| MC225EUM            | KM20     | AH20     | MB20 | —           | RF20 | UM20 |
| MC225EUM-V4A        | KM20-V4A | AH20-V4A | —    | MB20SC2-V4A | —    | —    |
| PMCN225EUM          | KM20     | —        | MB20 | —           | RF20 | UM20 |
| PMCN225EUM-V4A      | KM20-V4A | —        | —    | MB20SC2-V4A | —    | —    |
| SC300EUM; 0 bis 4   | KM20     | AH20     | MB20 | —           | RF20 | UM20 |
| SC300EUM; 5 bis 9   | KM20     | AH20     | —    | MB20SC2     | RF20 | UM20 |
| Thread M25x1.5      |          |          |      |             |      |      |
| MA600EUM            | KM25     | AH25     | MB25 | —           | RF25 | UM25 |
| MA900EUM            | KM25     | AH25     | MB25 | —           | RF25 | UM25 |
| MC600EUM            | KM25     | AH25     | MB25 | —           | RF25 | UM25 |
| MC600EUM-V4A        | KM25-V4A | AH25-V4A | —    | MB25SC2-V4A | —    | —    |
| PMCN600EUM          | KM25     | —        | MB25 | —           | RF25 | UM25 |
| PMCN600EUM-V4A      | KM25-V4A | —        | —    | MB25SC2-V4A | —    | —    |
| SC650EUM; 0 bis 4   | KM25     | AH25     | MB25 | —           | RF25 | UM25 |
| SC650EUM; 5 bis 9   | KM25     | AH25     | —    | MB25SC2     | RF25 | UM25 |
| SC925EUM; 0 bis 4   | KM25     | AH25     | MB25 | —           | RF25 | UM25 |

<sup>1</sup> Use a locknut for protection if a clamp mount MB...SC2 is installed.

<sup>2</sup> Only mountable on units without button.  
Remove the button from the shock absorber, if there's one fitted!

Dimensions can be found on the corresponding accessories pages.



<sup>2</sup> Side Load Adaptor

**BV**



<sup>2</sup> Steel Shroud

**PB**



Air Bleed Collar

**SP**



Switch Stop Collar

**AS**



Steel Button

**PS**



Steel/Urethane Button

**BP**



Nylon Button

**PP**

Page

### Thread M5x0.5

|   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|----|
| – | – | – | – | – | – | – | 38 |
|---|---|---|---|---|---|---|----|

### Thread M6x0.5

|   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|----|
| – | – | – | – | – | – | – | 38 |
|---|---|---|---|---|---|---|----|

### Thread M8x1

|      |       |   |   |   |   |   |    |
|------|-------|---|---|---|---|---|----|
| BV8  | PB8   | – | – | – | – | – | 38 |
| BV8A | PB8-A | – | – | – | – | – | 38 |
| BV8  | PB8   | – | – | – | – | – | 38 |

### Thread M10x1

|        |        |   |      |      |   |   |    |
|--------|--------|---|------|------|---|---|----|
| BV10   | PB10   | – | AS10 | PS10 | – | – | 39 |
| BV10   | PB10   | – | AS10 | PS10 | – | – | 39 |
| BV10SC | PB10SC | – | –    | –    | – | – | 39 |

### Thread M12x1

|        |        |      |      |        |   |   |    |
|--------|--------|------|------|--------|---|---|----|
| BV12   | PB12   | –    | AS12 | PS12   | – | – | 39 |
| BV12   | PB12   | –    | AS12 | PS12   | – | – | 39 |
| BV12SC | PB12SC | SP12 | AS12 | PS12SC | – | – | 39 |

### Thread M14x1.5

|        |        |      |      |          |      |          |    |
|--------|--------|------|------|----------|------|----------|----|
| BV14   | PB14   | SP14 | AS14 | PS14     | –    | included | 40 |
| BV14   | PB14   | SP14 | AS14 | PS14     | –    | PP150    | 40 |
| –      | –      | –    | –    | –        | –    | PP150    | 40 |
| –      | –      | –    | –    | –        | –    | –        | 40 |
| –      | –      | –    | –    | –        | –    | –        | 40 |
| BV14SC | PB14SC | –    | AS14 | included | BP14 | –        | 40 |
| BV14   | PB14   | SP14 | AS14 | PS14     | –    | –        | 40 |

### Thread M20x1.5

|        |        |      |      |          |      |       |    |
|--------|--------|------|------|----------|------|-------|----|
| BV20SC | PB20SC | –    | AS20 | included | BP20 | –     | 41 |
| BV20   | PB20   | SP20 | AS20 | PS20     | –    | PP225 | 41 |
| –      | –      | –    | –    | –        | –    | PP225 | 41 |
| –      | –      | –    | –    | –        | –    | –     | 41 |
| –      | –      | –    | –    | –        | –    | –     | 41 |
| BV20SC | PB20SC | –    | AS20 | included | BP20 | –     | 41 |
| BV20SC | PB20SC | –    | AS20 | included | –    | –     | 41 |

### Thread M25x1.5

|        |        |      |      |          |      |       |    |
|--------|--------|------|------|----------|------|-------|----|
| BV25SC | PB25SC | –    | AS25 | included | BP25 | –     | 42 |
| –      | –      | –    | AS25 | included | BP25 | –     | 42 |
| BV25   | PB25   | SP25 | AS25 | PS25     | –    | PP600 | 42 |
| –      | –      | –    | –    | –        | –    | PP600 | 42 |
| –      | –      | –    | –    | –        | –    | –     | 42 |
| –      | –      | –    | –    | –        | –    | –     | 42 |
| BV25SC | PB25SC | –    | AS25 | included | BP25 | –     | 42 |
| BV25SC | PB25   | –    | AS25 | included | –    | –     | 42 |
| –      | –      | –    | AS25 | included | BP25 | –     | 42 |

For selection chart, see pages 36 to 37

## M5x0.5

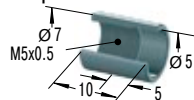
### KM5

Locknut



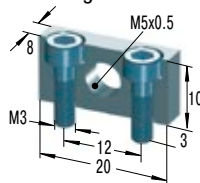
### AH5

Stop Collar



### MB5SC2

Mounting Block



## M6x0.5

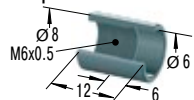
### KM6

Locknut



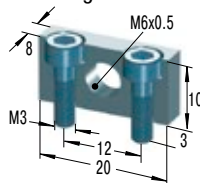
### AH6

Stop Collar



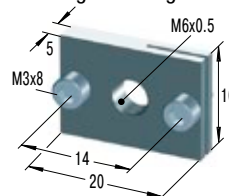
### MB6SC2

Mounting Block



### RF6

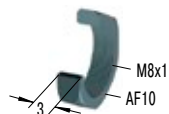
Rectangular Flange



## M8x1

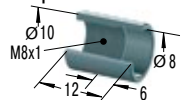
### KM8

Locknut



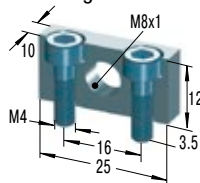
### AH8

Stop Collar



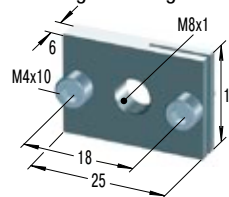
### MB8SC2

Mounting Block



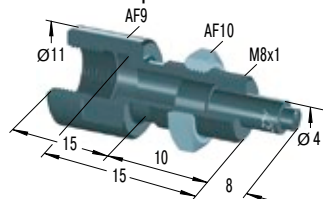
### RF8

Rectangular Flange



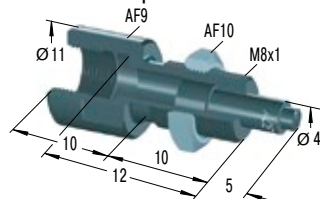
### BV8

Side Load Adaptor



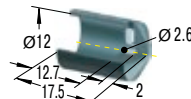
### BV8A

Side Load Adaptor



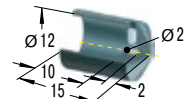
### PB8

Steel Shroud



### PB8-A

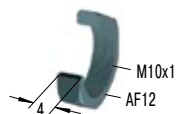
Steel Shroud



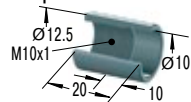
For mounting, installation, ..., see pages 43 to 46.

### M10x1

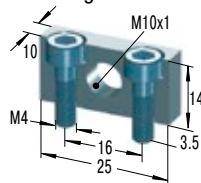
**KM10**  
Locknut



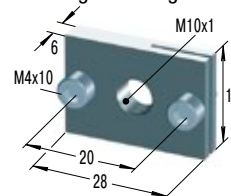
**AH10**  
Stop Collar



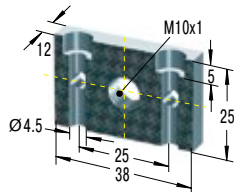
**MB10SC2**  
Mounting Block



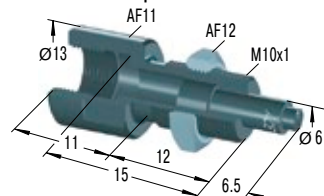
**RF10**  
Rectangular Flange



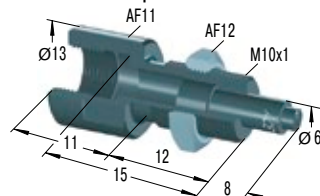
**UM10**  
Universal Mount



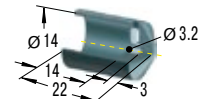
**BV10**  
Side Load Adaptor



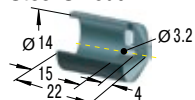
**BV10SC**  
Side Load Adaptor



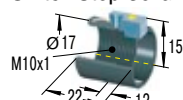
**PB10**  
Steel Shroud



**PB10SC**  
Steel Shroud

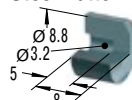


**AS10**  
Switch Stop Collar



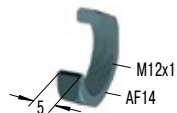
inc. Proximity Switch

**PS10**  
Steel Button

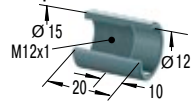


### M12x1

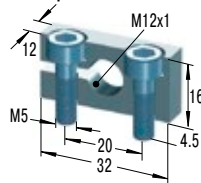
**KM12**  
Locknut



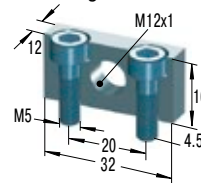
**AH12**  
Stop Collar



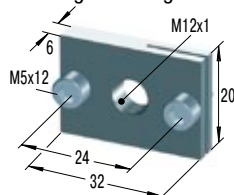
**MB12**  
Clamp Mount



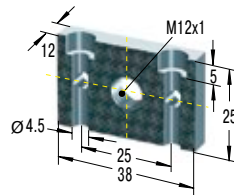
**MB12SC2**  
Mounting Block



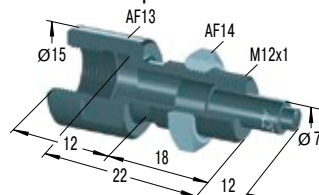
**RF12**  
Rectangular Flange



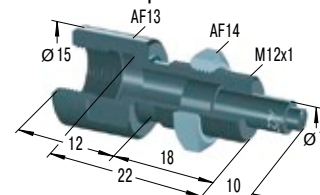
**UM12**  
Universal Mount



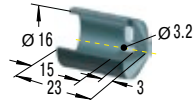
**BV12**  
Side Load Adaptor



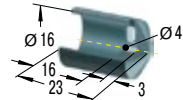
**BV12SC**  
Side Load Adaptor



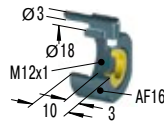
**PB12**  
Steel Shroud



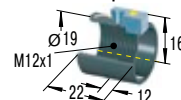
**PB12SC**  
Steel Shroud



**SP12**  
Air Bleed Collar

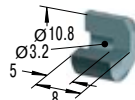


**AS12**  
Switch Stop Collar

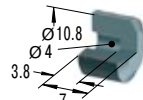


inc. Proximity Switch

**PS12**  
Steel Button



**PS12SC**  
Steel Button



For selection chart, see pages 36 to 37

## M14x1,5

### KM14

Locknut



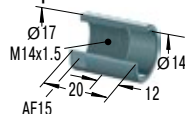
### KM14-V4A

Locknut



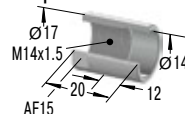
### AH14

Stop Collar



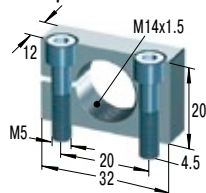
### AH14-V4A

Stop Collar



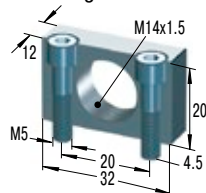
### MB14

Clamp Mount



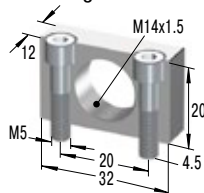
### MB14SC2

Mounting Block



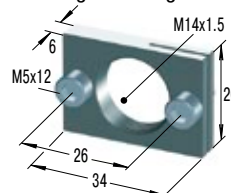
### MB14SC2-V4A

Mounting Block



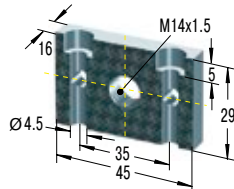
### RF14

Rectangular Flange



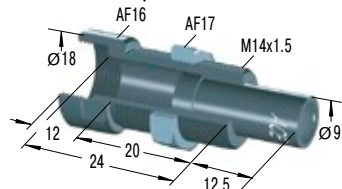
### UM14

Universal Mount



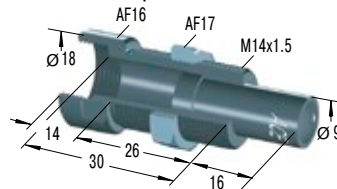
### BV14

Side Load Adaptor



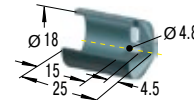
### BV14SC

Side Load Adaptor



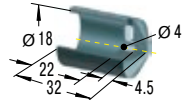
### PB14

Steel Shroud



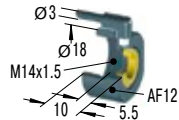
### PB14SC

Steel Shroud



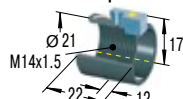
### SP14

Air Bleed Collar



### AS14

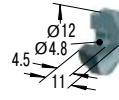
Switch Stop Collar



inc. Proximity Switch

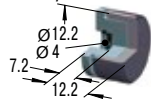
### PS14

Steel Button



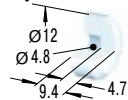
### BP14

Steel/Urethane Button



### PP150

Nylon Button



$W_s$  max = 14 Nm

For mounting, installation, ..., see pages 43 to 46.

### M20x1.5

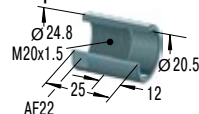
**KM20**  
Locknut



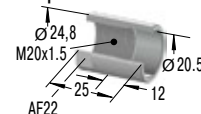
**KM20-V4A**  
Kontermutter



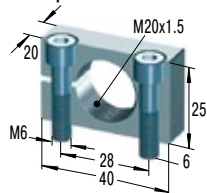
**AH20**  
Stop Collar



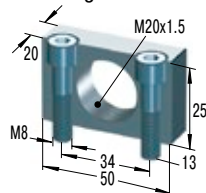
**AH20-V4A**  
Stop Collar



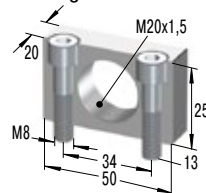
**MB20**  
Clamp Mount



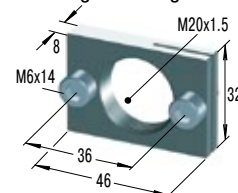
**MB20SC2**  
Mounting Block



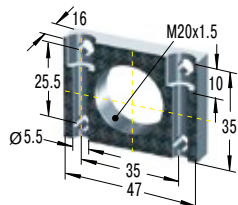
**MB20SC2-V4A**  
Montageblock



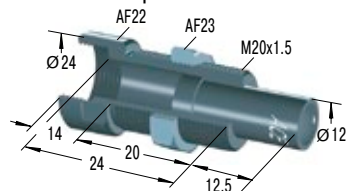
**RF20**  
Rectangular Flange



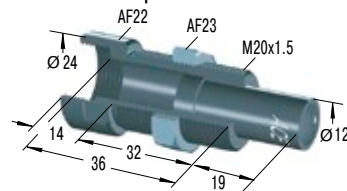
**UM20**  
Universal Mount



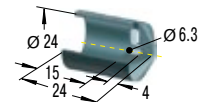
**BV20**  
Side Load Adaptor



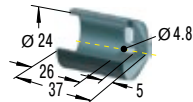
**BV20SC**  
Side Load Adaptor



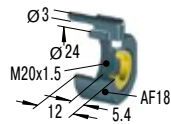
**PB20**  
Steel Shroud



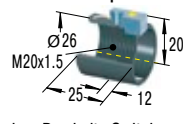
**PB20SC**  
Steel Shroud



**SP20**  
Air Bleed Collar

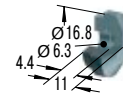


**AS20**  
Switch Stop Collar

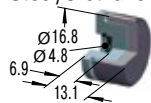


inc. Proximity Switch

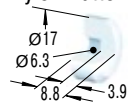
**PS20**  
Steel Button



**BP20**  
Steel/Urethane Button



**PP225**  
Nylon Button

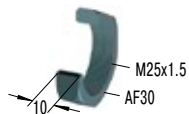


$W_s \text{ max} = 33 \text{ Nm}$

For selection chart, see pages 36 to 37

## M25x1.5

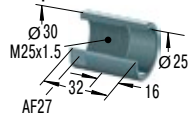
**KM25**  
Locknut



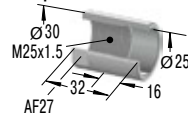
**KM25-V4A**  
Locknut



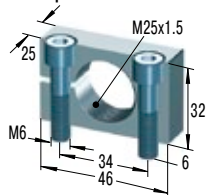
**AH25**  
Stop Collar



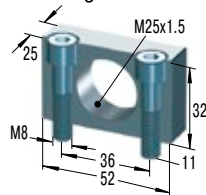
**AH25-V4A**  
Stop Collar



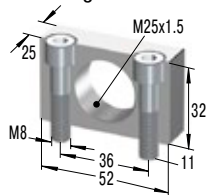
**MB25**  
Clamp Mount



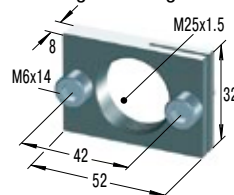
**MB25SC2**  
Mounting Block



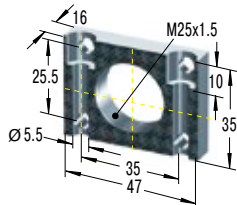
**MB25SC2-V4A**  
Mounting Block



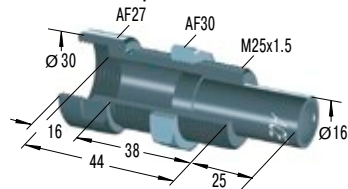
**RF25**  
Rectangular Flange



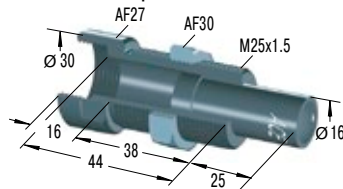
**UM25**  
Universal Mount



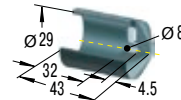
**BV25**  
Side Load Adaptor



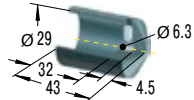
**BV25SC**  
Side Load Adaptor



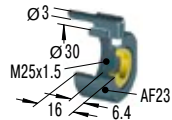
**PB25**  
Steel Shroud



**PB25SC**  
Steel Shroud

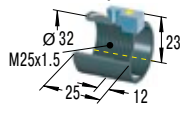


**SP25**  
Air Bleed Collar



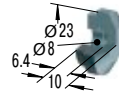
For VC2515FT to VC2555FT  
reduction of the stroke 6.4 mm

**AS25**  
Switch Stop Collar

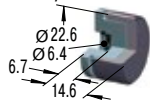


inc. Proximity Switch

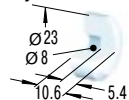
**PS25**  
Steel Button



**BP25**  
Steel/Urethane Button



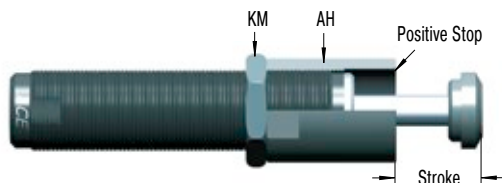
**PP600**  
Nylon Button



$W_3$  max = 68 Nm

For mounting, installation, ..., see pages 43 to 46.

### AH



### Stop Collar

All ACE miniature shock absorbers have an integral positive stop. An optional stop collar (AH...) can be added if desired to give fine adjustment of final stopping position.

### MB



### Clamp Mount

When using the MB clamp mount no locknut is needed on the shock absorber (split clamp action). The clamp mount is very compact and allows fine adjustment of the shock absorber position by turning in and out.

### Safety instructions

When foot mounting the types with combined piston and inner tube SC<sup>2</sup>25EUM to SC<sup>2</sup>650EUM and the types MC5EUM, MC9EUM, MC10EUM, MC30EUM, MC25EUM and MA30EUM, the mounting block MB (SC<sup>2</sup>) must be used.

### Delivery

Two socket head screws are included with the clamp mount.

### Dimensions

| TYPES | Screw Size | Max. Torque<br>Nm |
|-------|------------|-------------------|
| MB12  | M5x16      | 6                 |
| MB14  | M5x20      | 6                 |
| MB20  | M6x25      | 11                |
| MB25  | M6x30      | 11                |

### MBSC2



### Mounting Block

The mounting block MB...SC2 ensures the stable fixation of shock absorbers of the SC<sup>2</sup>-Series. Due to the piston tube technology of this series, this mounting block has no clamp slot. The mounting block is also used for types MC5EUM to MC30EUM as well as type MA30EUM.

### Mounting information

As the MB (SC<sup>2</sup>) has no clamp slot, the shock absorber has to be tightened with the supplied locknut.

### Delivery

Two socket head screws are included with the clamp mount.

### RF

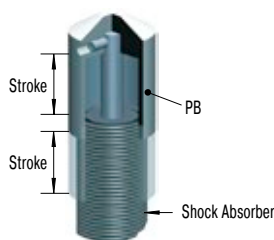


### Rectangular Flange

The rectangular flange RF provides a space saving convenient assembly and does not need a lock nut to hold the shock absorber. Therefore achieving a neat, compact and flat surface mounting.

### Dimensions

| TYPES | Screw Size | Max. Torque<br>Nm |
|-------|------------|-------------------|
| RF6   | M3x8       | 3                 |
| RF8   | M4x10      | 4                 |
| RF10  | M4x10      | 4                 |
| RF12  | M5x12      | 6                 |
| RF14  | M5x12      | 6                 |
| RF20  | M6x14      | 11                |
| RF25  | M6x14      | 11                |

**PB****Steel Shroud**

Grinding beads, sand, welding splatter, paints and adhesives etc. can adhere to the piston rod. They then damage the rod seals and the shock absorber quickly fails. In many cases the installation of the optional steel shroud can provide worthwhile protection and increase lifetime.

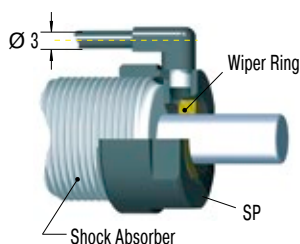
**Ordering information**

The PB steel shroud can only be installed onto a shock absorber without rod end button.

For part number MA, MC, SC please order with "M-880" suffix. Part numbers MA150EUM, MC150EUM to MC600EUM and SC25EUM to SC190EUM5-7 are supplied without a button.

**Safety instructions**

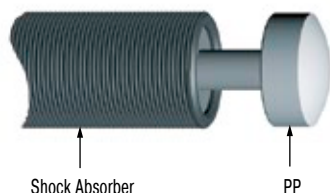
When installing don't forget to allow operating space for the shroud to move as the shock absorber is cycled.

**SP****Air Bleed Collar**

Air bleed collar (includes integral stop collar) protects shock absorber from ingress of abrasive contaminants like cement, paper or wood dust into the rod seal area. It also prevents aggressive fluids such as cutting oils, coolants etc. damaging the seals. Air bleed supply 0.5 to 1 bar. Low air consumption. The constant air bleed prevents contaminants passing the wiper ring and entering the shock absorber seal area.

**Safety instructions**

Do not switch off air supply whilst machine is operating! The air bleed collar cannot be used on all similar body thread sized shock absorbers. The air bleed collar is only for types MC150EUM to MC600EUM, MA150EUM, SC75EUM and SC190EUM5-7.

**PP****Nylon Button**

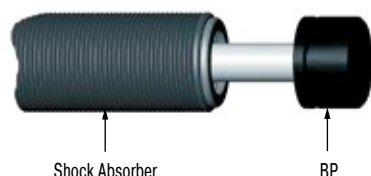
While the use of industrial shock absorbers already achieves a considerable reduction in noise levels, the additional use of PP impact buttons made of glass fibre reinforced nylon reduces noise levels even further, making it easy to fulfil the regulations of the new Noise Control Ordinance. At the same time, wear of impact surface is drastically minimized. The PP buttons are available for shock absorbers in series MC150EUM to MC600EUM.

**Mounting information**

The buttons are fitted simply by pressing onto the piston rod. We recommend to additionally fix the nylon button with LOCTITE.

**Delivery**

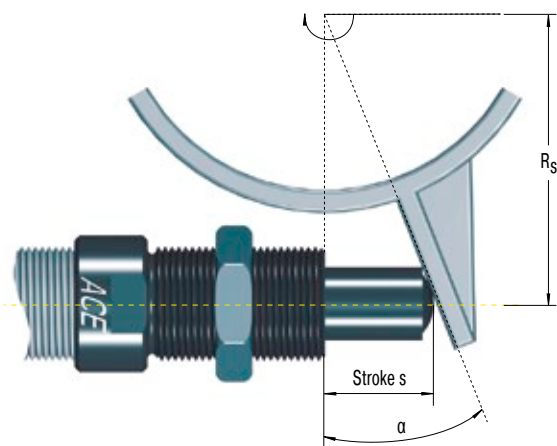
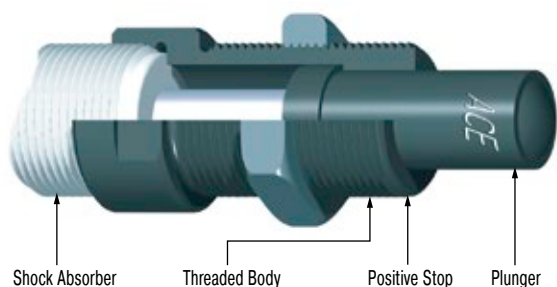
Model MA150EUM is supplied as standard with PP button.

**BP****Steel/Urethane Button**

These impact buttons made of urethane offer all above advantages of the PP nylon button in terms of reducing noise and wear. They fit easily onto the piston rod of the corresponding shock absorber. BP buttons must additionally be secured with LOCTITE.

Please refer to the accessories table on pages 36 to 37 to see which shock absorber types the BP buttons are available for.

### BV



#### Formulae:

$$\alpha = \tan^{-1} \left( \frac{s}{R_s} \right) \quad R_{s \min} = \frac{s}{\tan \alpha \max}$$

#### Example:

$$s = 0.025 \text{ m} \quad \alpha \max = 25^\circ \text{ (Type BV25)}$$

$$R_s = 0.1 \text{ m}$$

$$\alpha = \tan^{-1} \left( \frac{0.025}{0.1} \right) \quad R_{s \min} = \frac{0.025}{\tan 25}$$

$$\alpha = 14.04^\circ \quad R_{s \min} = 0.054 \text{ m}$$

|               |                     |              |                                   |
|---------------|---------------------|--------------|-----------------------------------|
| $\alpha$      | = side load angle ° | $R_s$        | = mounting radius m               |
| $\alpha \max$ | = max. angle °      | $R_{s \min}$ | = min. possible mounting radius m |
| s             | = absorber stroke m |              |                                   |

### Side Load Adaptor

Rotating impact motion causes high side load forces on the piston rod. This increases bearing wear and possibly results in rod breakage or bending. With side load impact angles of more than 3° the operation lifetime of the shock absorber reduces rapidly due to increased wear of the rod bearings. The optional BV side load adaptor provides long lasting solution.

#### Ordering information

The BV adaptor can only be installed onto a shock absorber without rod end button.

Part Number: MA, MC, SC...-880 (Models MC150EUM to MC600EUM and SC225EUM to SC2190EUM5-7 are supplied as standard without buttons.)

#### Material

Threaded body and plunger: Hardened high tensile steel, hardened 610 HV1

#### Mounting information

Secure the side load adaptor with LOCTITE or locknut on the shock absorber.

For material combination plunger/impact plate use similar hardness values. We recommend that you install the shock absorber/side load adaptor using the thread on the side load adaptor.

Installation with clamp mount MB... not possible. Use mounting block MB... SC2!

#### Safety instructions

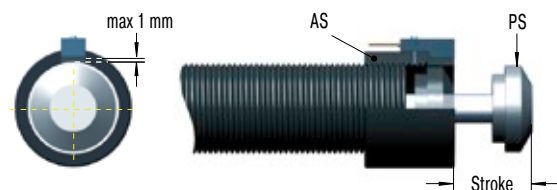
Maximum angle:

BV8, BV10 and BV12 = 12.5°

BV14, BV20 and BV25 = 25°

By repositioning the centre of the stroke of the side load plunger to be at 90 degrees to the piston rod, the side load angle can be halved. The use of an external positive stop due to high forces encountered is required.

## AS



## Switch Stop Collar

The ACE stop light switch stop collar combination AS, incl. proximity switch PNP, can be mounted on all popular shock absorber models. The use of the steel button PS is mandatory.

Advantages: Very short, compact mounting package, good price-performance ratio, retrofit possible for standard shock absorber models, fine adjustment of the stroke possible.

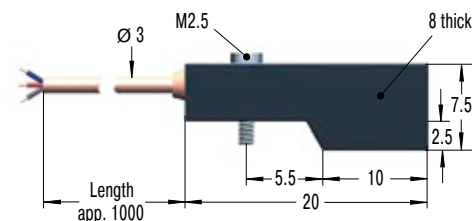
### Ordering information

The steel button type PS is fitted as standard on the models: SC190EUM0-4, SC300EUM0-9, SC650EUM0-9, SC925EUM0-4, MA/MVC225EUM, MA/MVC600EUM and MA/MVC900EUM. With all other models you must order the PS button as an optional accessory.

### Mounting information

We recommend to fix the steel button onto the end of the piston rod using LOCTITE 290. Attention! Take care not to leave any adhesive on the piston rod as this will cause seal damage. Thread the switch stop collar onto the front of the shock absorber and secure in position. Switch cable should not be routed close to power cables.

## 250-3 PNP



## Proximity Switch

The proximity switch is part of the ACE stop light switch collar combination. The correct starting position can thus be checked electronically.

### Ordering information

Part number: 250-3 PNP

### PNP proximity switch data

Supply voltage: 10-27 VDC

Ripple: < 10 %

Load current max.: 100 mA

Operating temperature range: -10 °C to +60 °C

Residual voltage: max. 1 V

Protection: IP67 (IEC 144) with LED-indicator

Proximity switch N/Open when shock absorber extended.

When shock absorber is fully compressed switch closes and LED indicator lights.

