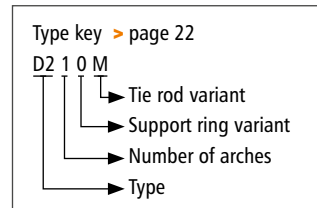


## D210M $\varnothing$ 32 - 500 mm



> **Type D210M**  
without vacuum ring

> **Type D211M**  
with internal vacuum ring



## Lateral expansion joint with one arch

**Design:** Streamlined, single arch rubber bellows with self-sealing rubber bulges, have a cycle life in the tens of millions, constructed with a high-grade leak-proof tube, multiple layers of high-strength cord, a seamless cover, and swivel backing flanges with tie rods borne in spherical washers. Optional with vacuum ring. In compliance with PED 2014/68/EU, FSA Technical Handbook and ASTM F1123 - 87.

**Diameters:**  $\varnothing$  32 to 500 mm

**Length:**  $L_E = 100$  or  $110$  mm (> page 268–269)  
Custom length on request

**Pressure:** Up to 25 bar depending on diameter and length  
Vacuum stability on request, with vacuum ring up to 0.05 bar absolute

**Movement:** For lateral and angular (2 tie rod design) movements\*









\*Installation gap tolerances according to axial movement capability of the expansion joint

**Application:**  
Cooling water systems,  
desalination plants,  
drinking water supply,  
plant construction, e. g.  
in pipelines, on pumps,  
as dismantling joints, on  
condensers and vessels



Request assembly  
instructions at:  
[www.ditec-adam.de/  
en/contact](http://www.ditec-adam.de/en/contact)

## Standard Rubber bellows

Elastomer	Fabric	Marking	°C	Application
EPDM / EPDM	PEEK		-40   +130	Heating systems acc. 4809, warm- and hot water
IIR / EPDM	Polyamid		-40   +100	Drinking water, seawater, weak acids and alkalis, weather-resistant
NBR / CR	Polyamid		-20   +90	Oil, gases, lubricants, natural gas
NBR weiß / CR	Polyamid		-20   +90	Oily and fatty food ( in compliance with KTW and FDA)
CSM / CSM	Polyamid		-20   +100	Chemicals, corrosive chemical waste, air compressors with oil content
IIR / EPDM	Polyamid		-40   +90	Cold-and warm water, sea water, cooling water, weak acids, alcohol

## Backing flanges

**Design:** Single-part integral swivel backing flanges with threaded holes, groove to accommodate the rubber bulges and tie rod holders (tie rod type B, E, C, S)

Single-part swivel backing flanges with threaded holes, groove to accommodate the rubber bulges and tie rod gusset plates (tie rod type R, K, L)

**Flange norms:** DIN, EN, ANSI, AWWA, BS, JIS, special measurements (> page 298)

**Materials:** Carbon steel, stainless steel

**Coating:** Galvanised, yellow-neutralized

## Accessories

**Protective covers:** Ground protective shield  
Protective shield or cover  
Fire protective shield (> page 58)

**Flow liners:** Cylindrical flow liner  
Conical flow liner  
Telescoping flow liner (> page 57)

Tie rods

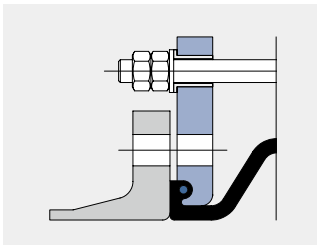


**Design:** Dimensioning according to design pressure (test pressure) based on the Pressure Equipment Directive

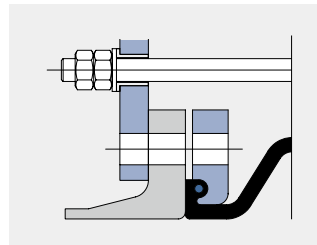
**Materials:** Carbon steel  
Stainless steel

**Coating:** Spherical washers/ball disks: PTFE coated  
Tie rods: galvanised, hot-dip galvanised or PTFE-coated

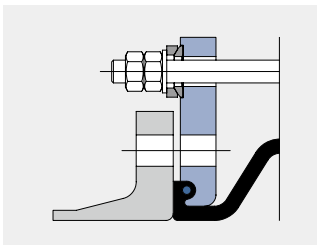
Example: Type D210C



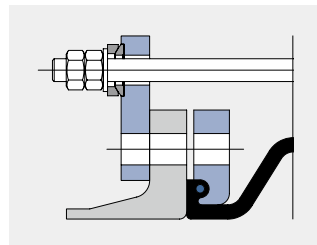
**Type D210B**  
Tie rods mounted outside in rubber bushing to accommodate pressure thrust forces



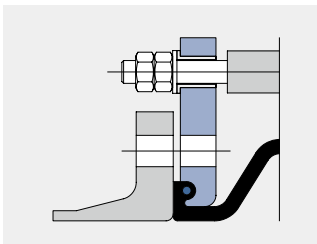
**Type D210R**  
Gusset plates: Tie rods mounted outside in rubber bushing to accommodate pressure thrust forces



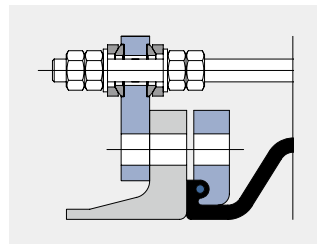
**Type D210E**  
Tie rods mounted outside in spherical washers and ball disks to accommodate pressure thrust forces



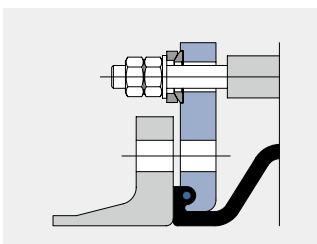
**Type D210K**  
Gusset plates: Tie rods mounted outside in spherical washers and ball disks to accommodate pressure thrust forces



**Type D210C**  
Tie rods mounted outside in rubber bushing and inside with compression sleeve to accommodate pressure/vacuum thrust forces



**Type D210L**  
Gusset plates: Tie rods mounted outside and inside in spherical washers and ball disks to accommodate pressure/vacuum thrust forces



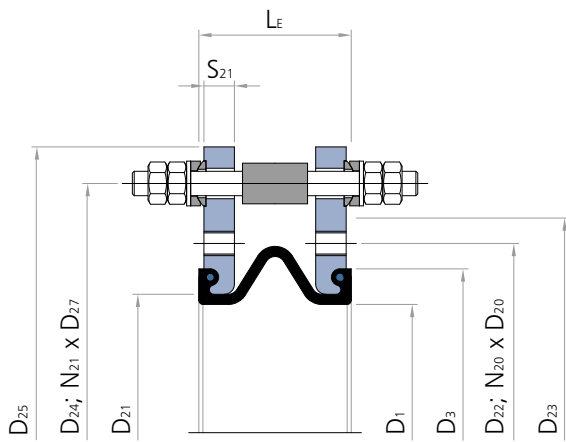
**Type D210S**  
Tie rods mounted outside in spherical washers and ball disks and inside with compression sleeve to accommodate pressure/vacuum thrust forces

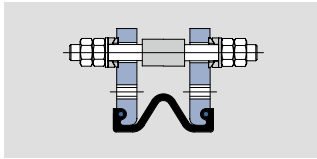
### Support rings

TYPE	Support ring	Vacuum ring	Pressure	Movement
D210M		None	Depending on the diameter up to 25 bar, vacuum stability on request	> page 268
D211M		Vacuum spiral / ring, medium contact, inside the arch	Depending on the diameter up to 25 bar, for vacuum up to 0.05 bar absolute	> page 269

**Materials**  
Stainless steel

#### Cross section D210S



**D210M**

&gt; without vacuum ring

Installation length ( $L_E$ ) at design pressure										
$\varnothing$ mm	up to 10 bar $L_E = 100$ mm					up to 10 bar $L_E = 110$ mm				
	higher pressures on request					higher pressures on request				
	Movement				A	Movement				A
	mm	mm	$\pm$ mm	$\pm^\circ$	cm <sup>2</sup>	mm	mm	$\pm$ mm	$\pm^\circ$	cm <sup>2</sup>
32	30	20	30	0	18					
40	30	20	30	0	18					
50	30	20	30	0	35					
65	30	20	30	0	56					
80	30	20	30	0	87					
100	30	20	30	0	130					
125	30	20	30	0	190					
150	30	20	30	0	263					
175	30	20	30	0	334					
200	30	20	30	0	416					
250	30	20	30	0	607					
300	30	20	30	0	830					
350	30	20	30	0	1,100					
400						30	20	30	0	1,385
500						30	20	30	0	2,091

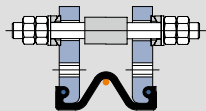
Standard sizes

In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (&gt; page 29).

The movement capability of the expansion joints given in the tables is determined for flange dimensions according to DIN PN10. In case of deviating flange dimensions, please contact us.

**Customised products available**

Standard rubber expansion joint, D210A



## D211M

> with internal vacuum ring



### Installation length ( $L_E$ ) at design pressure

$\varnothing$ mm	up to 10 bar $L_E = 100$ mm					up to 10 bar $L_E = 110$ mm				
	Movement				A cm <sup>2</sup>	Movement				A cm <sup>2</sup>
	mm	mm	$\pm$ mm	$\pm^\circ$		mm	mm	$\pm$ mm	$\pm^\circ$	
32	30	5	20	0	18					
40	30	5	20	0	18					
50	30	5	20	0	35					
65	30	5	20	0	56					
80	30	5	20	0	87					
100	30	5	20	0	130					
125	30	5	20	0	190					
150	30	5	20	0	263					
175	30	5	20	0	334					
200	30	5	20	0	416					
250	30	5	20	0	607					
300	30	5	20	0	830					
350	30	5	20	0	1,100					
400						30	5	20	0	1,385
500						30	5	20	0	2,091

Standard sizes

In the event of lateral displacement and simultaneous axial extension (due to installation gap tolerance) the above movements are reduced (> page 29).

The movement capability of the expansion joints given in the tables is determined for flange dimensions according to DIN PN10. In case of deviating flange dimensions, please contact us.

### Customised products available



Typical pump station arrangement  
with expansion joints to decouple pump vibrations from pipeline