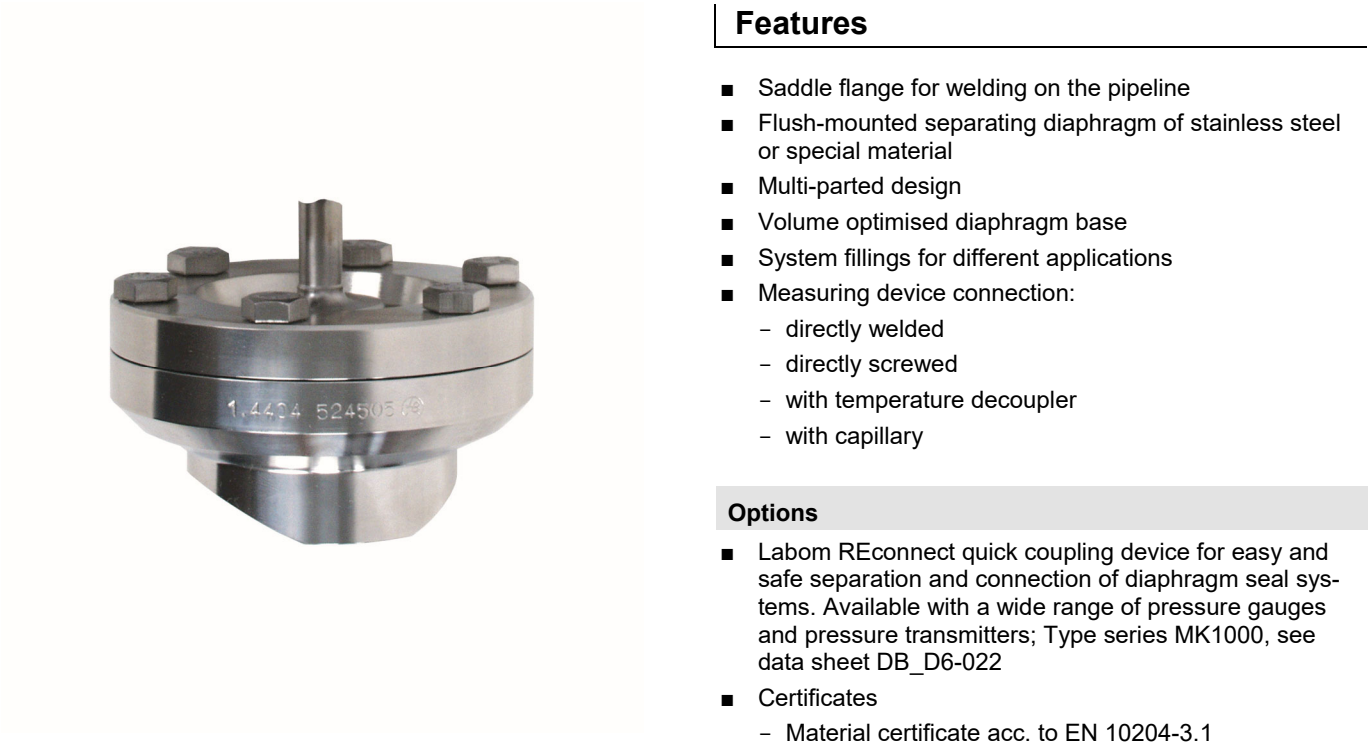
Diaphragm seal

saddle flange design, multi-part

Type series DD4200



Application area

- Machinery construction
- Chemical and petrochemical industry
- General process technology

Features

- Saddle flange for welding on the pipeline
- Flush-mounted separating diaphragm of stainless steel or special material
- Multi-parted design
- Volume optimised diaphragm base
- System fillings for different applications
- Measuring device connection:
  - directly welded
  - directly screwed
  - with temperature decoupler
  - with capillary

Options

- Labom REconnect quick coupling device for easy and safe separation and connection of diaphragm seal systems. Available with a wide range of pressure gauges and pressure transmitters; Type series MK1000, see data sheet DB_D6-022
- Certificates
  - Material certificate acc. to EN 10204-3.1
- Special materials upon request
- Oxygen free of oil and grease
- Negative pressure and vacuum service

Application

Suitable for mounting to bourdon tube pressure gauges and pressure transmitters. The diaphragm seal is suited for measuring aggressive, highly viscous media and for high process temperatures.

Technical data

Constructional design

Basic body:	Volume reduced diaphragm base Material: stainless steel mat.-no. 1.4404/1.4435 (316L)
Diaphragm:	Flat diaphragm
Material wetted parts:	Stainless steel mat.no. 1.4404/1.4435 (316L) Further materials upon request. Basic body: Stainless steel mat.-no. 1.4404/1.4435 (316L)

Process connection

Design:	Saddle flange for welding on to the pipeline
Nominal pressure/Nominal width:	See order details

Gasket

- Standard: fiber gasket up to 150 °C
- Alternative: graphite gasket up to 350 °C

Measuring device connection

See order details.

Material stainless steel mat.-no. 1.4301 (304)

System filling

See order details; further upon request.

Further details about pressure transmission fluids see general technical information TA_038.

Negative pressure and vacuum service

Labom pressure transmission fluids can be used in vacuum conditions at room temperature if the diaphragm seal is installed correctly. Special treatment during manufacturing is necessary, if the system will be exposed to higher temperatures later during operation.
A differentiation is made between negative pressure service and vacuum service. Which treatment is required (standard, negative pressure service or vacuum service) depends on the critical process condition, when the system is exposed to min. pressure at max. temperature.

Upon request, we provide an optimised design of the system.

For further details on pressure transmission fluids and negative pressure and vacuum service, see general technical information TA_038.

Temperature error

In order to optimise the system we provide a detailed error calculation upon request.

Weight

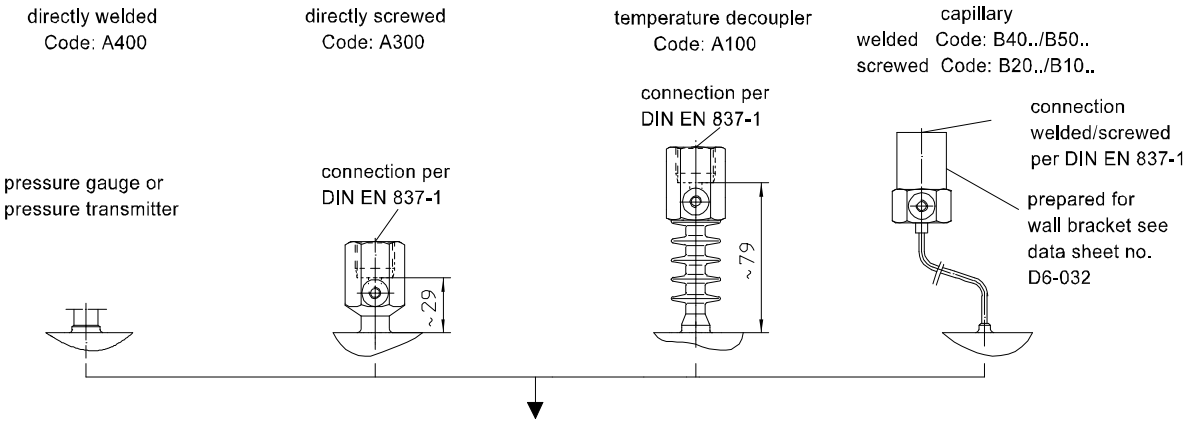
Weight with measuring device connection G1/2:
approx. 1.5 kg

With saddle flange DN 80: approx. 2.1 kg

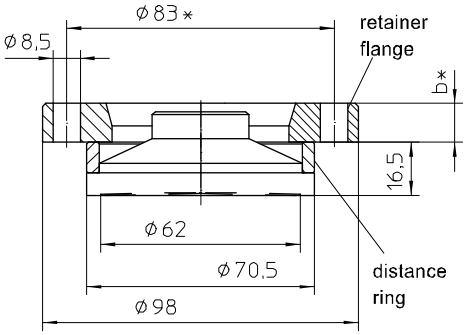
Further information about diaphragm seals see general technical information TA_031.

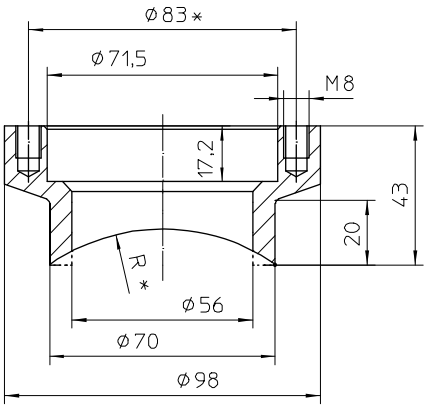
Flame arrester MF21xx for connection of measuring devices to zone 0 see data sheet D6-025.

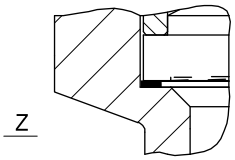
Measuring device connection



Dimensions





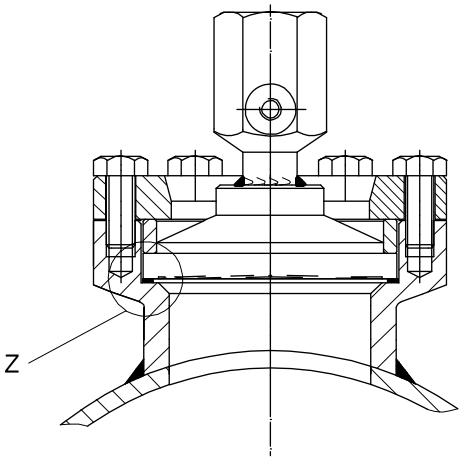


sealing form with
sealing washer

* standard design up to 80 bar
6 screws, b=12 mm

reinforced design up to 160bar
12 screws, b=16 mm

Mounting example



Order details

Diaphragm seal, saddle flange design
Type series DD4200

Order details diaphragm seal DD4200			
DD4200	diaphragm seal, saddle flange design, multi-parted		
D2	nominal pressure	PN 80	
D3		PN 160	
G1	diaphragm material	stainless steel mat.-no. 1.4404/1.4435 (316L), standard	
G2		Tantal	
G3		Hastelloy C 276	
G9		various	

A400	measuring device connection	directly	welded
A300			screwed G1/2
A100		with temperature decoupler	screwed G1/2
B40 . .		with capillary	welded
B20 . .			screwed G1/2
B50 . .		with capillary and stainless steel protective tube	welded
B10 . .			screwed G1/2
11		capillary length	1 m
12			1.6 m
13			2.5 m
14			4 m
21			5 m
15			6 m
23			7 m
16			8 m
17			10 m
9			others
	system filling [1]	pressure transmission fluid	temperature range[2]
L22		Silikonfreies Synthetiköl FD1, Standard	-10…140 °C
L23		synthetic oil, free of silicone FD1, pls. specify max. temperature	-40…230 °C
L34		vacuum oil FV4	-25...260 °C
L35		high temperature oil FH	-20...400 °C
L10		low temperature oil FM5 [3]	-90...160 °C
L30		halocarbon oil FC	-50...190 °C [4]

Accessories			
MZ2060	saddle flange		
D2	nominal pressure	PN 80	
D3		PN 160	
	for pipes per EN 10357 (DIN 11850)- pipe dimensions per DIN 11866 table 1 model A		
	material stainless steel mat.-no. 1.4404/1.4435 (316L)	for pipe sizes	for pipe external Ø
K111-E1		DN 32	35 mm
K112-E1		DN 40	41 mm
K113-E1		DN 50	53 mm
K114-E1		DN 65	70 mm
K115-E1		DN 80	65 mm
K116-E1		DN 100	104 mm
K117-E1		DN 125	129 mm
K118-E1		DN 150	154 mm
K119-E1		DN 200	204 mm
	for pipes per ASME-BPE- pipe dimensions per DIN 11866 table 1 model C		
	material stainless steel mat.-no. 1.4404/1.4435 (316L)	for pipe sizes	for pipe external Ø
K351-E1		1 1/2"	31.8 mm
K352-E1		2"	50.8 mm
K353-E1		2 1/2"	63.5 mm
K354-E1		3"	76.2 mm
K355-E1		4"	101.6 mm
K356-E1		5"	127.0 mm
K357-E1		6"	152.4 mm
MS2010-A12	gasket	fiber gasket, 71,5 x 65 x 1 (up to 150 °C)	
MS2010-A13		graphite gasket, 71,5 x 65 x 1 (up to 350 °C)	
MZ8100-A11	hexagon screw, DIN 933, mat. stainless steel mat.-no. 1.4301	M8 x 20 (6 pcs. PN 80)	
MZ8100-A12		M8 x 25 (12 pcs. PN 160)	

Additional features (to be indicated in case of need, only)	
W1020	material certificate per EN 10204-3.1, wetted parts
W4001	oxygen free of oil and grease
X1	negative pressure service[5]
X2	vacuum service[5]

Order code (example): DD4200 - D2 - G1 - A400 - L22 - ...

[1] for more detailed information about pressure transmission fluids see TA_038.
Please state temperature range to allow an accurate calculation of the system.

[2] max. media temperature for pressures > 0 bar rel.

[3] not possible with vacuum service (order code X2)

[4] for oxygen applications (in combination with order code W4001), a temperature range of -50...60 °C applies

[5] temperature limits see Technical Information TA_038 (Pressure transmission fluids)