

## "in line" diaphragm seal



Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature. The diaphragm is welded to the upper body, to ensure separation of filling fluid from process medium. The "in-line" diaphragm position enables deep cleaning of their surfaces. Flange clamping with metallic sealing guarantees the system against leakage at high process fluid temperatures and pressures.

### 4.R00 - MGS9/R

**Working pressure:** *from 0...100 to 0...3000 psi (from 0...6 to 0...250 bar).*

**Process temperature:** *-49...+302°F (-45°C...+150°C.)*

**Accuracy\*:** (add to instrument accuracy)  $\pm 0,5\%$  for direct mounting;  $\pm 1\%$  for capillary mounting.

**Instrument connection:** AISI 316 st.st.

**Bolts and lock ring:** AISI 304 st.st.

**Diaphragm:** welded to process connection,

**4** - AISI 316 L st.st,

**9** - Hastelloy C276.

**Process connection:**

**4** - AISI 316 st.st.,

**5** - AISI 316L st.st.

**Process connection, welded type:**

**7RC** - saddle, for pipe size DN 2" ...4";

**7MS** - "in line", for pipe size 1/2" ...1";

**7MT** - "in line", for pipe size 1" 1/2...4".

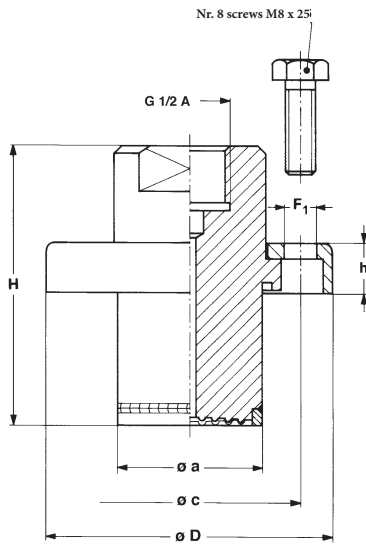
**Process connection, flanged type: (Mod. 7FL)**

- "in line", for flange size 1" 1/2 - 2" ; 150...900 RF;

- "in line", for flange size DN 40...50, PN 10...100 step seal. **Filling**

**liquid:** silicon oil.

\* at 68°F (20 °C) process temperature (or state temperature when ordering)



h	H	a	c	D	F <sub>1</sub>
0.51" (13)	2.91" (74)	1.49" (38)	2.28" (58)	2.95" (75)	0.33" (8,5)

dimensions : inches (mm)

**ASSEMBLING**

All diaphragm seals are mounted on the instruments and fixed by an aluminium protection label. For applications with capillary: should diaphragm seal and instrument not be at the same level, instrument adjustment is required). (For use and installation, see data sheet "4")

<b>D</b> - Direct	<b>9</b> - Capillary AISI304 st.st., AISI304 st.st. armoured, 36.37" max (6 mt max)
<b>I</b> - Nude capillary AISI304, 36.37" max (6 mt max)	<b>6</b> - Capillary AISI316 st.st., AISI316 st.st. armoured, 36.37" max (6 mt max)

**FILLING FLUIDS and process fluid temperature**

Fluid	Vacuum	Pressure	Fluid	Vacuum	Pressure
<b>A</b> - Standard silicon oil "A"	-40...+302°F (-40...+150°C)	-40...+302°F (-40...+150°C)	<b>E</b> - Fluorinated liquid "E"	-40...+212°F (-40...+100°C)	-40...+302°F (-40...+150°C)
<b>B</b> - Silicon oil "B"	-40...+302°F (-40...+150°C)	-40...+482°F (-40...+250°C)	<b>F</b> - Silicon oil "C"	-130...+176°F (-90...+80°C)	-130...+302°F (-90...+150°C)
<b>C</b> - Silicon oil "C"	-14...+392°F (-10...+200°C)	-14...+662°F (-10...+350°C)	<b>G</b> - Mineral food oil "G"	-14...+302°F (-10...+150°C)	-14...+392°F (-10...+200°C)
<b>D</b> - Silicon oil "D"	-14...+392°F (-10...+200°C)	-14...+752°F (-10...+400°C)			

**OPTIONS**

<b>C05</b> - Helium Test	<b>P04</b> - Dye penetrant test
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**"HOW TO ORDER" SEQUENCE**

Section/Model/Connection material/Diaphragm material/Process Connection/Instrument connection/Assembling/Options

4 R00 4,5 4,9 --- 41F - G 1/2 F D B...G  
1, 9, 6 C05, P04

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**piping welded connections,  
for "in-line" diaphragm seal MGS9/R**



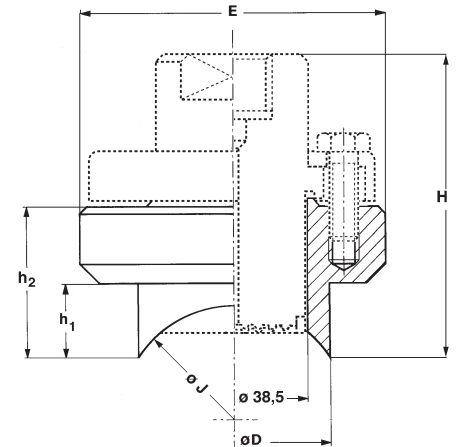
5.7RC - saddle welded for pipes DN 2"...4".

Working pressure: max permitted 250 bar, in accordance with used pipe schedule.  
Process connection: shaped, suitable for outside pipe welding, DN 2" - 3" - 4".  
Body: AISI 316 st.st. (code 4)

Dimensions (mm)

DN	Code	h <sub>1</sub>	h <sub>2</sub>	H	D	E	J*
2" (50)	<b>L00</b>	28,5	48,5	87,5	55	80	60,3
3" (80)	<b>I00</b>	23,5	43,5	82,5	65	80	88,9
4" (100)	<b>H00</b>	23	43	82	75	80	114,3

\*tube SCH 40S dimensions, as per ASME B31.1



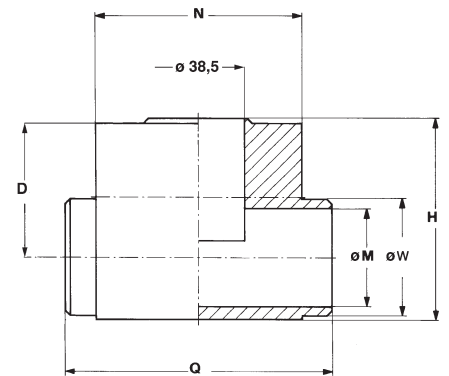
5.7MS - "in-line" welded for pipes DN 1/2"...1".

Working pressure: max. permitted 250 bar, and in accordance with used pipe schedule.  
Process connection: "head" welded, for pipes DN 1/2" - 3/4" - 1".  
Body: AISI 316 st.st. (code 4)

Dimensions (mm)

DS	Code	H	Q	N	D	M *	W *
1/2" (15)	<b>400</b>	83	110	85	43	15,8	21,4
3/4" (20)	<b>500</b>	83	110	85	45,5	20,9	26,7
1" (25)	<b>700</b>	83	110	85	48,5	26,6	33,4

\*tube SCH 40S dimensions, as per ASME B31.1



# pipng welded connections, for "in-line" diaphragm seal MGS9/R

# 7RC - 7MS

RB2 - 06/08

5.7MT - "in-line" welded for pipes DN 1" 1/2...4".

Working pressure: max. permitted 250 bar, and in accordance with used pipe schedule.

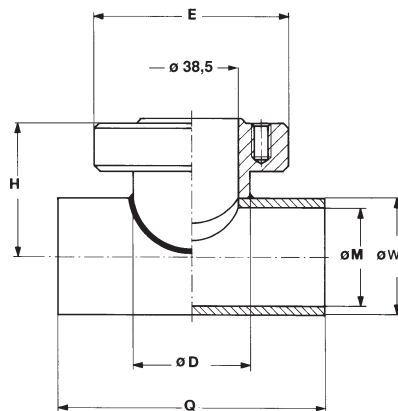
Process connection: "head" welded, for pipes DN 1" 1/2 - 2" -3" -4".

Body: AISI 316 st.st. (code 4)

Dimensions (mm)

DN	Code	H	Q	E	D	M *	W *
1" 1/2 (40)	A00	55,5	110	80	48	40,9	48,3
2" (50)	B00	61	110	80	55	52,5	60,3
3" (80)	E00	74	110	80	65	77,9	88,9
4" (100)	F00	86	110	80	75	102,3	114,3

\*tube SCH 40S dimensions, as per ANSI B31.1



5.7FL - flanged side to be in line mounted.

Working pressure: max. permitted 100 bar, and in accordance with used pipe schedule.

Flanged process connection:

40...50, PN 10...100 UNI-DIN step seal;

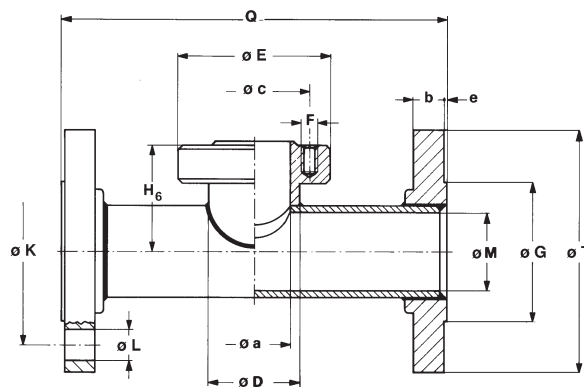
1/2...2", 150...900 RF ANSI B16.5.

Body, tube and flanges: AISI 316 st.st. (code 4)

Dimensions (mm.)\*

E	c	a	F (n° 8 holes)
80	58	38,5	M8

- DN  
- 1"



FLANGED CONNECTION AS PER EN : DIMENSIONS (mm)

DN	PN-bar (1)	Code	T	G	M (2)	K	L	b	e	H	D	N (1)	Q
40	10...16/25...40	SS0	150	88	40,9	110	18	16	2	55,5	48	4	230
40	63...100	SU0	170	88	38,1	125	22	24	2	55,5	48	4	260
50	10...16	TQ0	165	102	52,5	125	18	16	2	61	55	4	230
50	25...40	TS0	165	102	52,5	125	18	18	2	61	55	4	230
50	63	TT0	180	102	49,3	135	22	24	2	61	55	4	260
50	100	TU0	195	102	49,3	145	26	26	2	61	55	4	260

FLANGED CONNECTION AS PER ASME : DIMENSIONS (mm)

DN	PN-psi (1)	Code	T	G	M (2)	K	L	b	e	H	D	N (1)	Q
1" 1/2	150	AAA	125	73	40,9	98,4	16	16	2	55,5	48	4	230
1" 1/2	300	ABA	155	73	40,9	114,3	22	19	2	55,5	48	4	230
1" 1/2	600	ADA	155	73	40,9	114,3	22	22,5	7	55,5	48	4	260
2"	150	BAA	150	92,1	52,5	120,6	19	17,5	2	61	55	4	230
2"	300	BBA	165	92,1	52,5	127	19	21	2	61	55	8	230
2"	600	BDA	165	92,1	52,5	127	19	25,5	7	61	55	8	260

1) N° threaded holes.

2) tube SCH 40S dimensions, as per ASME B31.1.

## "HOW TO ORDER" SEQUENCE

Section/Model/Connection material/Process Connection

5	7RC	4	L00...H00
	7MS		400...700
	7MT		A00...F00
	7FL		SS0...BDA

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