DS DIESSE
FLUID CONTROL

LEVEL GAUGES

GENERAL CATALOGUE

Product origin
Design & Manufacturing
ITALY

DS DIESSE
FLUID CONTROL

COMPANY

Born in 1990 from the experience of persons who had been working in this field since many years, DIESSE has successfully developed its know-how in the fluids measuring instruments sector and has registered own patents.
Today the company is one of the most well-known level gauge manufacturers in the business and offers a high service performance ensuring high product quality and flexibility, unique and reliable delivery terms, customer care through research of innovative and personalized/tailor made solutions.

Diesse level gauges are manufactured with selected Italian/ European-only components and certified in accordance with major international standards and are exported worldwide through fidelized Distributors and Customers.

PRODUCTS

DIESSE products are suitable for a wide range of applications in industrial plants, gas and oil, offshore industry or shipbuilding and in boilers or environment field.

he range of measuring instruments includes:

- **GLASS LEVEL GAUGES**
- **MAGNETIC LEVEL GAUGES**

for installation in classified areas (ATEX)
for marine/ship applications approved by LLOYD'S Register

- **BLOW DOWN VALVES WITH HANDWHEEL OR PNEUMATIC ACTUATOR**
- **CYLINDRICAL PLUG COCKS and NEEDLE VALVES**
- **NEEDLE VALVES**
- **COILS**

Special tailor-made/design products are realized on request

QUALITY / CERTIFICATES

The quality control and quality assurance systems are in accordance with the international ISO 9001:2015 standard.

DIESSE has got the following certifications:

- **UNI EN ISO 9001:2015**
- **Welders and welding procedures qualifications.**
- ***Qualified non-destructive operators (dye penetrant testing)***

The products are available also with the following certificates:

- **Certificate of Quality System for design, manufacturing, final inspection and testing of pressure equipments according to Directive 2014/68/UE - PED.**
- **ATEX Production Quality Assurance Notification for explosion proof (Ex II 2G CT3) according to Directive 2014/34/UE**
- **Machinery General Design Appraisal (classification of Ships) by Lloyd's Register both for glass and magnetic level gauges**

DIESSE has its own internal final testing for standard controls:

- **Hydraulic pressure test up to 400 bar**
- **Penetrant liquid inspection**
- **Painting thickness control**

Calibrations and other tests carried out at qualified laboratories

PED 2014/68/UE

TUTTI I PRODOTTI, I COMPONENTI E GLI ACCESSORI DIESSE SONO ESCLUSIVAMENTE DI ORIGINE ITALIANA O EUROPEA, CONTROLLATI E COLLAUDATI SINGOLARMENTE SECONDO QUANTO PREVISTO DALLE PROCEDURE DI QUALITA' AZIENDALI E DELLE VIGENTI NORMATIVE DI SETTORE.

ALL DIESSE PRODUCTS, COMPONENTS AND ACCESSORIES ARE ITALIAN or EUROPEAN ORIGIN. THEY ARE INDIVIDUALLY CHECKED AND TESTED IN ACCORDANCE WITH THE COMPANY QUALITY PROCEDURES AND THE INDUSTRY REGULATIONS CURRENTLY IN EFFECT.

DS DIESSE
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GLASS level gauges

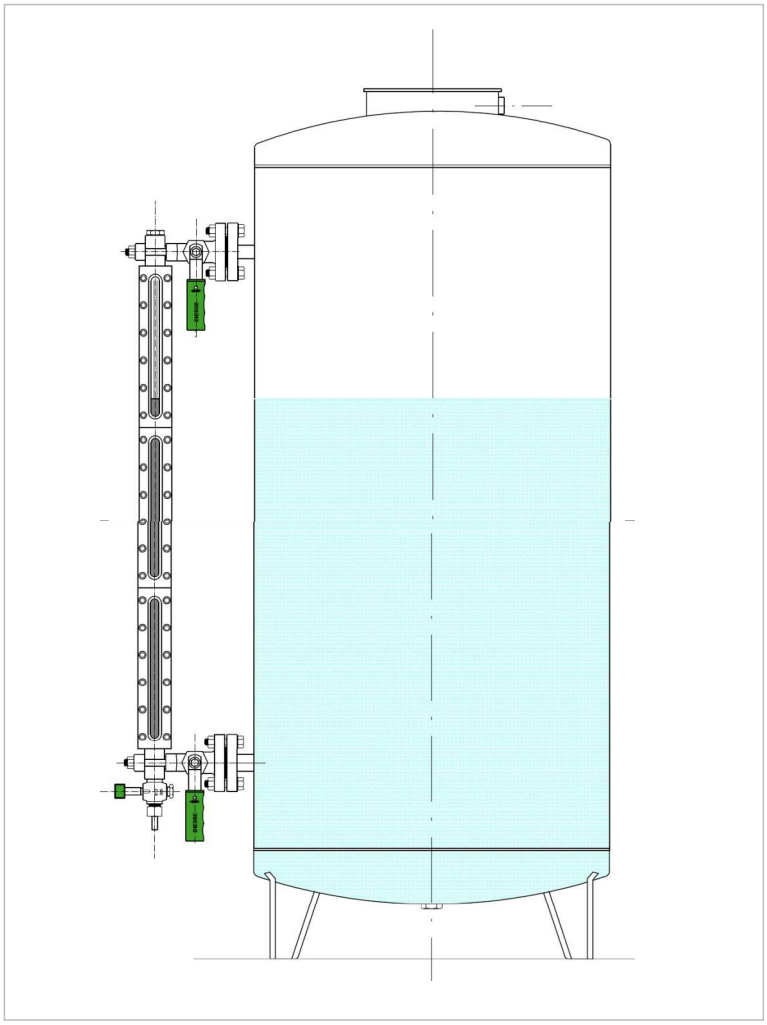
- WITH REFLEX GLASSES
- WITH TRANSPARENT GLASSES
- WELD-ON TYPE
- WITH GLASS TUBE

TO RECOMMEND THE MOST SUITABLE LEVEL GAUGE FOR A PARTICULAR PURPOSE, PLEASE PROVIDE THE FOLLOWING DATA WHEN ASKING FOR ADVICE OR A QUOTATION.

► essential data

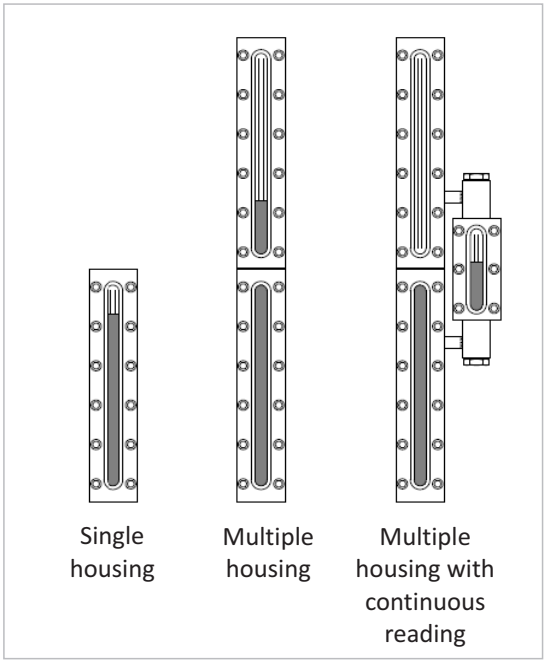
- **► CENTRE-TO-CENTRE DISTANCE (distance between process connections)**
- MINIMUM VISIBLE LENGTH REQUIRED
- **► TYPE OF CONNECTIONS (flanged-threaded-weld-on) and related STANDARDS (UNI-ANSI-DIN...)**
- POSITION OF PROCESS CONNECTIONS
- POSITION OF THE VALVE HANDLING
- **► REQUIRED MATERIAL (wetted and non-wetted parts)**
- **► TYPE OF FLUID**
- **► DESIGN AND MAXIMUM OPERATING PRESSURES**
- **► DESIGN AND MAXIMUM OPERATING TEMPERATURES**
- ANY ADDITIONAL ACCESSORIES

Glass level gauges give very accurate level readings, making them the ideal product for calibrating other instruments as well.
They play a crucial role during system start-up.



READING TYPE

The required visible length depends on the type of fluid and the shape of the tank.
The visible length with a single glass varies from 95 mm to 320 mm. If the required visible length exceeds these measurements, additional glasses of the same length are joined together and mounted on a single bar.
To ensure continuous reading along a housing consisting of numerous glasses, one or more housings can be placed on the side at the points where the reading is interrupted.



DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGES

Code

1 Basic Type

DS LG	DIESSE Glass level gauge

2 Level Gauge Model

Pos. 1: Level Gauge type

RTR	Reflex - rotating execution with tubular cover
RTF	Reflex - fixed distance execution with tubular cover
RBR	Reflex - rotating execution with lateral covers
RBF	Reflex - fixed distance execution with lateral covers
RCR	Reflex - rotating execution with light cover
RDR	Reflex - rotating execution with light cover - flat body
RCF	Reflex - fixed distance execution with light cover
RPF	Reflex - fixed distance execution with heavy cover
RXF	Reflex - fixed distance execution with heavy cover - flat body
REF	Reflex - fixed distance execution with heavy cover - flat body - flanged connections
TCR	Transparent - rotating execution with light cover
TMR	Transparent - rotating execution with light cover - flat body
TCF	Transparent - fixed distance execution with light cover
TMF	Transparent - fixed distance execution with light cover - flat body
TPF	Transparent - fixed distance execution with heavy cover
TXF	Transparent - fixed distance execution with heavy cover - flat body
TEF	Transparent - fixed distance execution with heavy cover - flat body - flanged connections
RCW	Reflex - weld-on type with light cover
TCW	Transparent - weld on type with light cover
TVR	Tubular glass type

Pos. 2: No. of sections

Pos. 3: Glass size / type

Options Pos. 3

Standard	Type A
/B	Type B
/RV	Right View
/LV	Left View
/MS	Glass protection with MICA shield
/KFS	Glass protection with ECTFE shield

3 Process connections

Pos. 1: Nominal dimension

Pos. 2: Nominal pressure

Pos. 3: Type / Finish

Pos. 4: Position

Standard	Side / Side
/SB	Side / Bottom
/TS	Top / Side
/TB	Top / Bottom

4 Gauge Valves model

Pos. 1: Type of valves

0	None
GR18	Cylindrical plug cocks
MT18	Cylindrical plug cocks - Monolithic body
NPV	Push button valves
SHV	Globe valves
SBB	Ball valves

Pos. 2: Drain and Vent connection

0	Blind
PB	Plug BSP
PT	Plug NPT
FL	Flange
D12	Cylindrical plug cock (Standard)
D18	Cylindrical plug cock
PM18	Three way cylindrical plug manometer setting valve with control flange
DHV	Globe valve
DBB	Ball valve

5 Distance Centre-to-centre

M…	Distance between connections centres in mm
M [SL…HL]	Standard distance: see table in each level gauge type data-sheet

6 Materials

Pos. 1: Wetted parts

CS	Carbon steel ASTM A105 galvanized
LF2	Carbon steel A105 LF2 galvanized
SS	Stainless steel AISI 316L
BRS	Brass

Pos. 2: Non-wetted parts

CS	Carbon steel galvanized
SS	Stainless steel AISI 316

Pos. 3: Gaskets

Standard	Graphite / Copper
GF	Graphite / AISI 316
PC	PTFE / Copper
PF	PTFE / 316
GG	EPDM (For glass tube)

7 Accessories

LC	Lower check ball	UC	Upper check ball	LUC	Check balls (lower + upper)
LPH	Lower pusher	UPH	Upper pusher	LUPH	Pusher (lower + upper)
VSG	Calibrated scale	NFE	Non-frosting extension	CR…	Continuous reading
MLA	Minimum level arrow	EVA50	Bulb type illuminator	TDR	Microwave transmitter
GPU	Glass tube protection	MJT	Middle terminal for glass tube	CPTV	Union nut for “U” shaped protection
LFC	Weight closing for lower handle	UFC	Weight closing for upper handle	LUFC	Weight closing for all handles (lower + upper)
SMHD	Cocks handles lock (all)	LU-SMHD	Shut-off cocks handles lock	D/V-SSHD	Vent and drain handles lock
IFS	Interface connection	OP	Painting	SB	Support bracket
ELC	Remote control	VP	Vent pipe		

8 Approvals

EEx	ATEX	SHP…	Marine

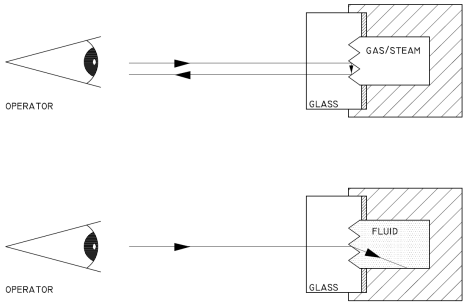
Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
e.g.	DS LG	- RBF17	- 20/40/RF	- GR18/D12/PB	- M 420	- CS/CS	- LC/VSG	- EEx

DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

REFLEX level gauges

The level is ascertained using a glass which has a smooth side and a wetted prismatic side. The level of the fluid inside the level gauge is shown by using the optical principles of refraction: the wetted part fully absorbs light and so the fluid appears to be black. The part in contact with the gas, on the other hand, fully reflects light and so the gas appears to be of a very light colour.



The product line includes level gauges suitable for pressure ratings from PN10 to PN250 and a huge number of industrial process applications.

This type of gauge is recommended:

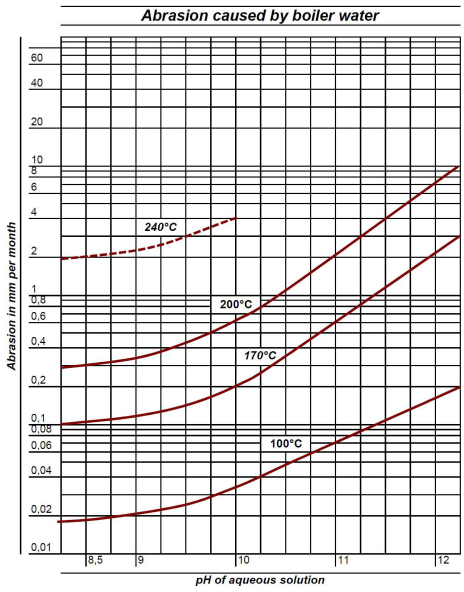
for taking clear and simple readings (see counter-indications below)
if you are looking for an inexpensive gauge which will also save you money on maintenance costs

Operating limits / Conditions:

Process:
Max. pressure: 255,5 bar @ 38°C (rating class 1500)
Max. temperature: 300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)

Steam: (see page 1.59)
Max. pressure: 22 bar
Max. temperature: 216°C (saturated steam @ 22 bar)

For saturated steam values > 20 bar, a low-maintenance transparent level gauge with mica shield protection should be used (see graph "Abrasion caused by boiler water" for the estimated glass life).
Not only does the glass life depend on the temperature, it depends on the pH of the water (the higher the value, the shorter the glass life).



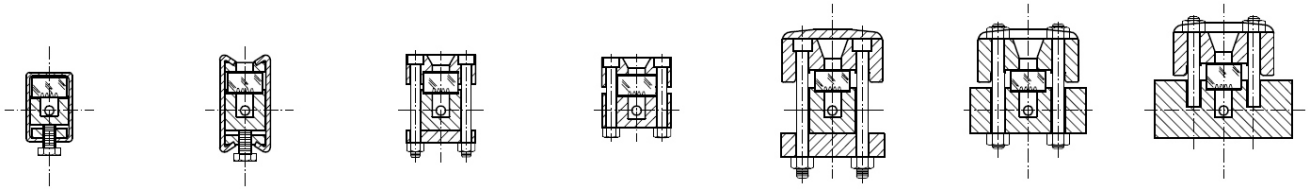
The product is NOT suitable for use in the following instances:

- ❑ if exposed to corrosive fluid (e.g. caustic soda, hydrofluoric acid, citric acid ...)
- ❑ if exposed to high pressure steam
- ❑ if subjected to repeated thermal shocks

In the scenarios listed above, the glass must be protected with MICA or PCTFE shields, so a transparent level gauge is necessary

- ❑ for checking the level of separation between two immiscible fluids (interface)
- ❑ for checking the colour of a fluid (all fluids look very dark)
- ❑ in cases where the fluid is particularly viscous (a film may form on the glass which prevents you from taking an accurate reading)
- ❑ in cases where the fluid is particularly dark (the reflex principle is rendered ineffective)

Types:



PN16	PN40	PN40/64 Class 300	PN40/64 Class 300	PN100/160 Class 600/900	PN160 Class 900	PN250 Class 1500

REFLEX level gauges

Materials / Specifications:
Connections between housing and cocks:
- with grinded pipes and stuffing box (View can be turned by the customer during installation)
- fixed centre-to-centre distance with metal seal (View can be turned during manufacture)

Wetted parts:
- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

Non-wetted parts:
- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request

Gaskets: (See page 1.71)
- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE/AISI 316; other extras on request

Glasses: (See page 1.69)
- reflex borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

Shut-off: (See page 1.49)
- standard: upper valve and lower valve (side/side)
- additional options: on request

Drain: (See page 1.50)
- standard: threaded valve
- additional options: on request

Vent: (See page 1.50)
- standard: blind (For grinded pipes version)
- threaded with plug (For fixed distance version)
- additional options: on request

Tank connections:
Flanged:
- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 / #300 / #600 DN ½" / ¾" / 1"
- additional options: on request

Threaded:
- BSP (GAS) standard: ½"-M / ¾"-M
- NPT standard: ½"-M / ¾"-M

Weld-on: from ½" to 1" BW or SW
Option: further connections type or direct connections to the process without shut-off cocks (See page 1.49 for more details)

Shut-off cocks, drain cock and vent cock:
- Cylindrical plug cocks (GR18 or DS MT18 - see page 1.47)
- Globe valves (DS SHV - see page 1.48)
- Push-button valves (DS NPV - see page 1.48)
- Ball valves (DS SBB)

Spare parts:
Our spare parts are interchangeable with those of major international manufacturers.
For the full range of complete sets, turn to the spares section on page 1.69.

Accessories:
Lower and/or upper safety ball, pusher for safety ball, calibrated scale, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (see page 1.55 for details)

Certifications (On request):
- ATEX
- Tests and inspection by Notified Bodies
- NACE MR0175
- Others on request

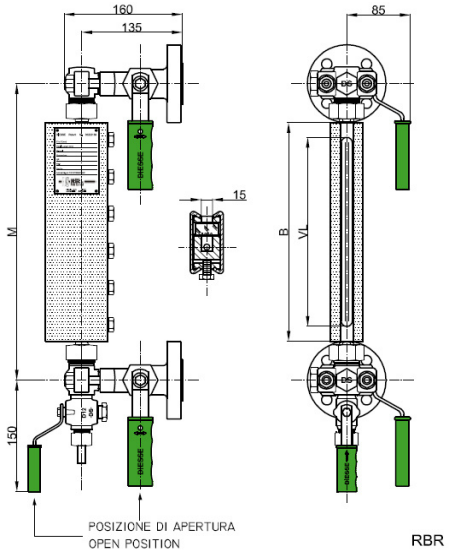
All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.

DS DIESSE FLUID CONTROL

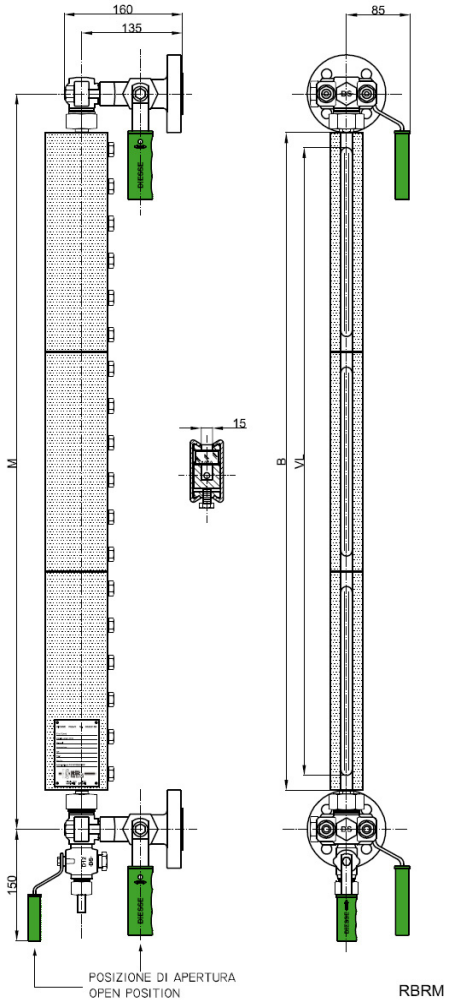
GLASS LEVEL GAUGE REFLEX TYPE PN40

DS LG - RBR GR18

Code: DS LG-RBR…-… /40/RF-GR18/…/…-M…-CS/CS



RBR



RBRM

Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing
(see page 1.47) ***Centre-to-centre distance M = B + 115 mm or 140 mm***
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69) Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	2,4
12	2x1	155	**260**	**285**	**120**	140x1	2,8
13	3x1	180	**285**	**310**	**145**	165x1	3,3
14	4x1	205	**310**	**335**	**170**	190x1	3,8
15	5x1	235	**340**	**365**	**200**	220x1	4,3
16	6x1	265	**370**	**395**	**230**	250x1	4,9
17	7x1	295	**400**	**425**	**260**	280x1	5,4
18	8x1	335	**440**	**465**	**300**	320x1	6,1
19	9x1	360	**465**	**490**	**320**	340x1	6,6
24	4x2	410	**515**	**540**	**375**	190x2	7,5
25	5x2	470	**575**	**600**	**435**	220x2	8,5
26	6x2	530	**635**	**660**	**495**	250x2	9,7
27	7x2	590	**695**	**720**	**555**	280x2	10,7
28	8x2	670	**775**	**800**	**635**	320x2	12,1
29	9x2	720	**825**	**850**	**680**	340x2	13,1
36	6x3	795	**900**	**925**	**760**	250x3	14,4
37	7x3	885	**990**	**1015**	**850**	280x3	15,9
38	8x3	1005	**1110**	**1145**	**970**	320x3	18,0
39	9x3	1080	**1185**	**1210**	**1040**	340x3	19,5
47	7x4	1180	**1285**	**1310**	**1145**	280x4	21,2
48	8x4	1340	**1445**	**1470**	**1305**	320x4	24,0
49	9x4	1440	**1545**	**1570**	**1400**	340x4	26,0
57	7x5	1475	**1580**	**1605**	**1440**	280x5	26,5
58	8x5	1675	**1780**	**1805**	**1640**	320x5	30,0
59	9x5	1800	**1905**	**1930**	**1760**	340x5	32,5
68	8x6	2010	**2115**	**2140**	**1975**	320x6	35,9
69	9x6	2160	**2265**	**2290**	**2120**	340x6	38,9
78	8x7	2345	**2450**	**2475**	**2310**	320x7	41,9
79	9x7	2520	**2625**	**2650**	**2480**	340x7	45,4
88	8x8	2680	**2785**	**2810**	**2645**	320x8	47,9
89	9x8	2880	**2985**	**3010**	**2840**	340x8	51,9

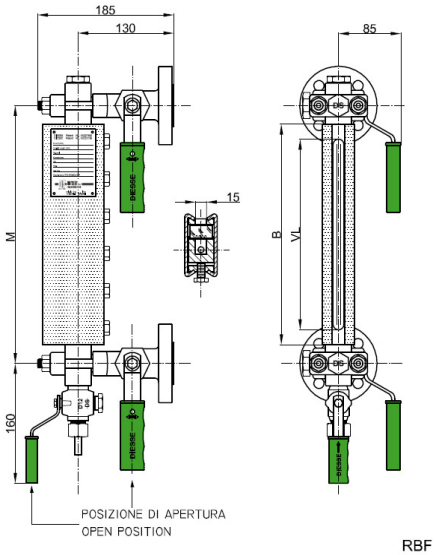
Tab. RBR

DS DIESSE FLUID CONTROL

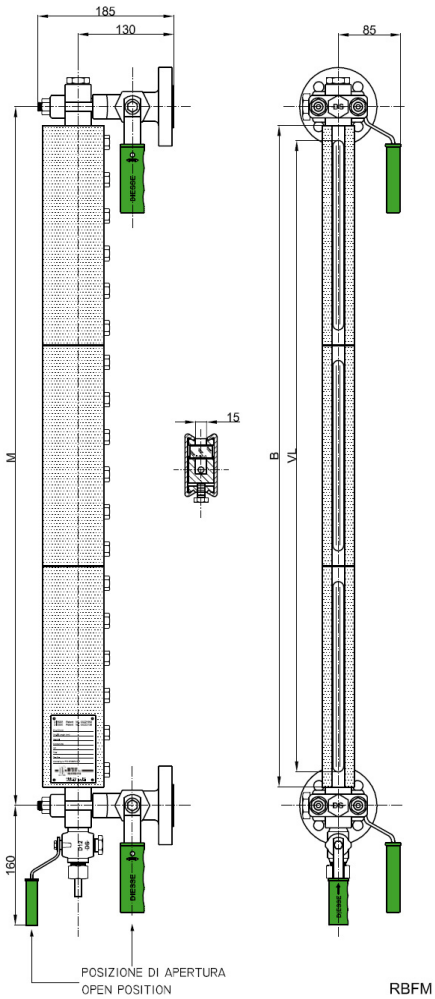
GLASS LEVEL GAUGE REFLEX TYPE PN40

DS LG - RBF GR18

Code: DS LG-RBF…-… /40/RF-GR18/…/…-M…-CS/CS



RBF



RBFM

Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69) Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBF: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	**170**	**95**	115x1	3,7
12	2x1	155	**195**	**120**	140x1	4,1
13	3x1	180	**220**	**145**	165x1	4,6
14	4x1	205	**245**	**170**	190x1	5,1
15	5x1	235	**275**	**200**	220x1	5,6
16	6x1	265	**305**	**230**	250x1	6,2
17	7x1	295	**335**	**260**	280x1	6,7
18	8x1	335	**375**	**300**	320x1	7,4
19	9x1	360	**400**	**320**	340x1	7,9
24	4x2	410	**450**	**375**	190x2	8,8
25	5x2	470	**510**	**435**	220x2	9,8
26	6x2	530	**570**	**495**	250x2	11,0
27	7x2	590	**630**	**555**	280x2	12,0
28	8x2	670	**710**	**635**	320x2	13,4
29	9x2	720	**760**	**680**	340x2	14,4
36	6x3	795	**835**	**760**	250x3	15,7
37	7x3	885	**925**	**850**	280x3	17,2
38	8x3	1005	**1045**	**970**	320x3	19,3
39	9x3	1080	**1120**	**1040**	340x3	20,8
47	7x4	1180	**1220**	**1145**	280x4	22,5
48	8x4	1340	**1380**	**1305**	320x4	25,3
49	9x4	1440	**1480**	**1400**	340x4	27,3
57	7x5	1475	**1515**	**1440**	280x5	27,8
58	8x5	1675	**1715**	**1640**	320x5	31,3
59	9x5	1800	**1840**	**1760**	340x5	33,8
68	8x6	2010	**2050**	**1975**	320x6	37,2
69	9x6	2160	**2200**	**2120**	340x6	40,2
78	8x7	2345	**2385**	**2310**	320x7	43,2
79	9x7	2520	**2560**	**2480**	340x7	46,7
88	8x8	2680	**2720**	**2645**	320x8	49,3
89	9x8	2880	**2920**	**2840**	340x8	53,2

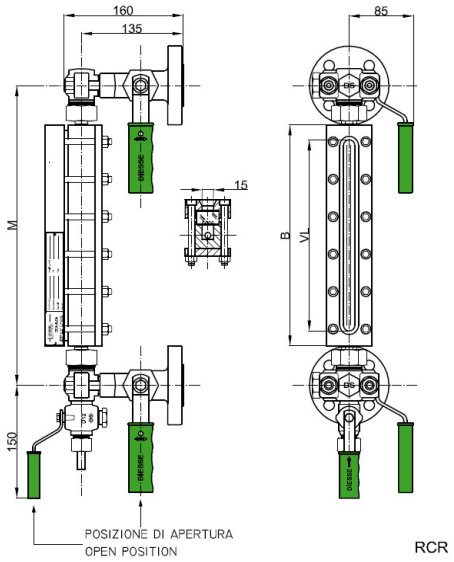
Tab. RBF

DS DIESSE FLUID CONTROL

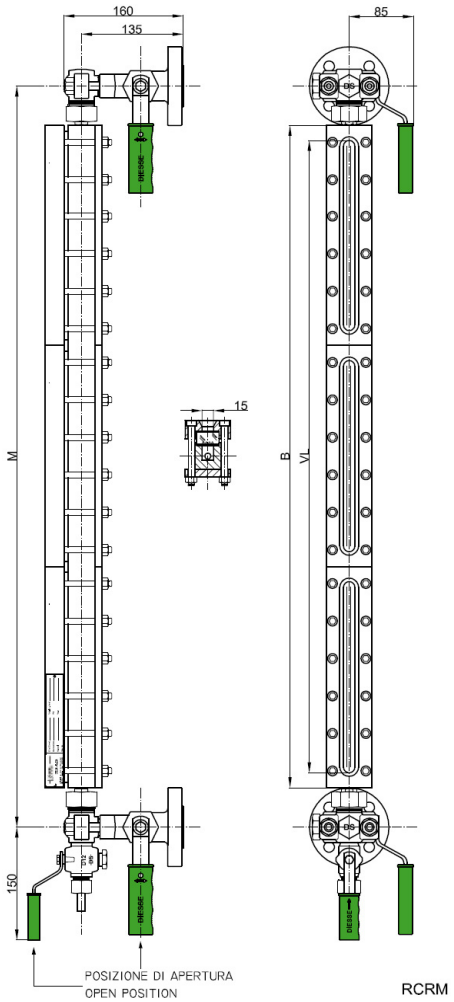
GLASS LEVEL GAUGE REFLEX TYPE PN40

DS LG - RCR GR18

Code: DS LG-RCR…-… /40/RF-GR18/…/…-M…-CS/CS



RCR



RCRM

Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RCR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS RCR: see from page 1.69 (Drawing with components and parts list see page 1.62)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	3,0
12	2x1	155	**260**	**285**	**120**	140x1	3,5
13	3x1	180	**285**	**310**	**145**	165x1	4,0
14	4x1	205	**310**	**335**	**170**	190x1	4,4
15	5x1	235	**340**	**365**	**200**	220x1	5,2
16	6x1	265	**370**	**395**	**230**	250x1	5,6
17	7x1	295	**400**	**425**	**260**	280x1	6,3
18	8x1	335	**440**	**465**	**300**	320x1	7,0
19	9x1	360	**465**	**490**	**320**	340x1	7,6
24	4x2	410	**515**	**540**	**375**	190x2	8,6
25	5x2	470	**575**	**600**	**435**	220x2	10,2
26	6x2	530	**635**	**660**	**495**	250x2	11,0
27	7x2	590	**695**	**720**	**555**	280x2	12,5
28	8x2	670	**775**	**800**	**635**	320x2	13,8
29	9x2	720	**825**	**850**	**680**	340x2	15,0
36	6x3	795	**900**	**925**	**760**	250x3	16,5
37	7x3	885	**990**	**1015**	**850**	280x3	18,6
38	8x3	1005	**1110**	**1145**	**970**	320x3	20,7
39	9x3	1080	**1185**	**1210**	**1040**	340x3	22,5
47	7x4	1180	**1285**	**1310**	**1145**	280x4	24,7
48	8x4	1340	**1445**	**1470**	**1305**	320x4	27,5
49	9x4	1440	**1545**	**1570**	**1400**	340x4	29,9
57	7x5	1475	**1580**	**1605**	**1440**	280x5	30,8
58	8x5	1675	**1780**	**1805**	**1640**	320x5	34,3
59	9x5	1800	**1905**	**1930**	**1760**	340x5	37,3
68	8x6	2010	**2115**	**2140**	**1975**	320x6	41,3
69	9x6	2160	**2265**	**2290**	**2120**	340x6	44,8
78	8x7	2345	**2450**	**2475**	**2310**	320x7	48,0
79	9x7	2520	**2625**	**2650**	**2480**	340x7	52,2
88	8x8	2680	**2785**	**2810**	**2645**	320x8	54,8
89	9x8	2880	**2985**	**3010**	**2840**	340x8	59,6

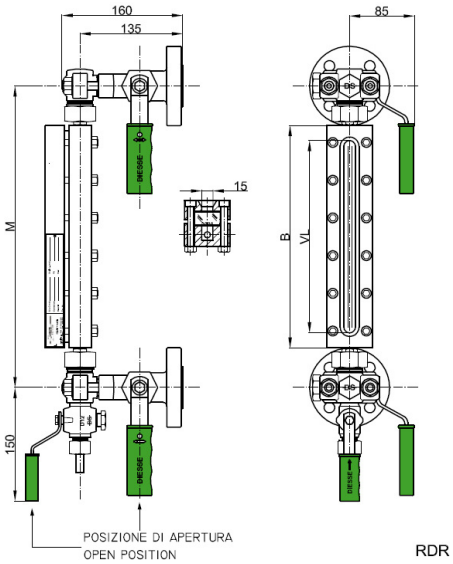
Tab. RCR

DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE REFLEX TYPE PN40

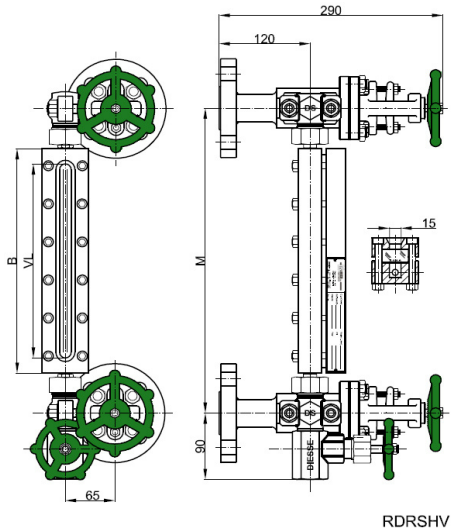
DS LG - RDR GR18 / SHV

Code: DS LG-RDR…-… /40/RF-GR18/…/…-M…-CS/CS



RDR

Code: DS LG-RDR…-… /40/RF-SHV/…/…-M…-CS/CS



RDRSHV

Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 500 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105	AISI 316L	AISI 316L
Cocks body DS GR18:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Valves body DS SHV:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Valves DS SHV: globe type - Opening/Closing by handwheel
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69) Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RDR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS RDR: see from page 1.69 (Drawing with components and parts list see page 1.62)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el	B	M = B+105	M = B+130	VL		
11	1x1	130	**235**	**260**	**95**	115	2,9
12	2x1	155	**260**	**285**	**120**	140	3,4
13	3x1	180	**285**	**310**	**145**	165	3,8
14	4x1	205	**310**	**335**	**170**	190	4,4
15	5x1	235	**340**	**365**	**200**	220	5,2
16	6x1	265	**370**	**395**	**230**	250	5,6
17	7x1	295	**400**	**425**	**260**	280	6,0
18	8x1	335	**440**	**465**	**300**	320	6,5
19	9x1	360	**465**	**490**	**320**	340	7,5

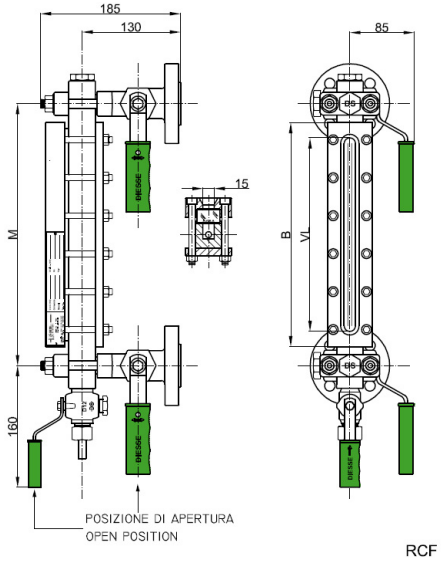
Tab. RDR

DS DIESSE FLUID CONTROL

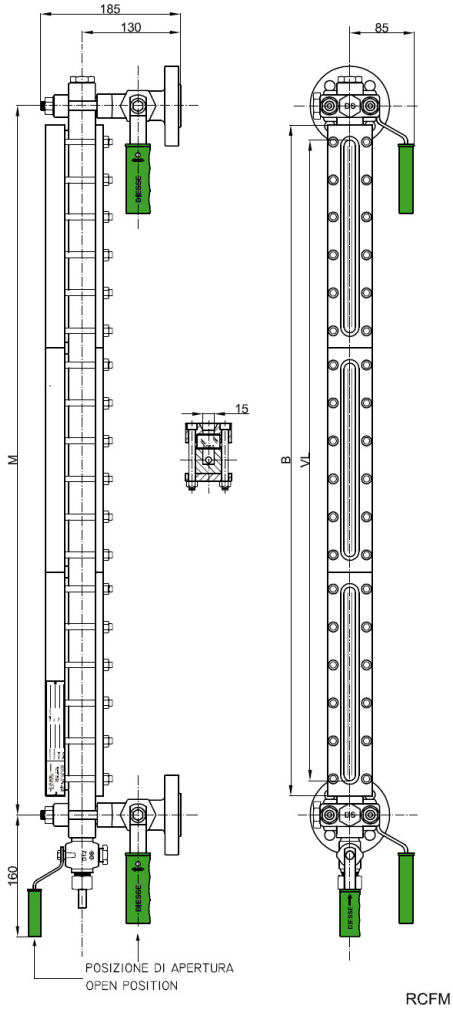
GLASS LEVEL GAUGE REFLEX TYPE PN40 and PN64 / Class 300

DS LG - RCF GR18

Code: DS LG-RCF…-… /40/RF-GR18/…/…-M…-CS/CS



RCF



RCFM

Technical data

Service conditions
Max Pressure: PN40 and PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300-600/RF DN ½" - ¾" - 1"
Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½" with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½" Option: see page 1.52

Glasses
Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RCF: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS RCF: see from page 1.69 (Drawing with components and parts list see page 1.62)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

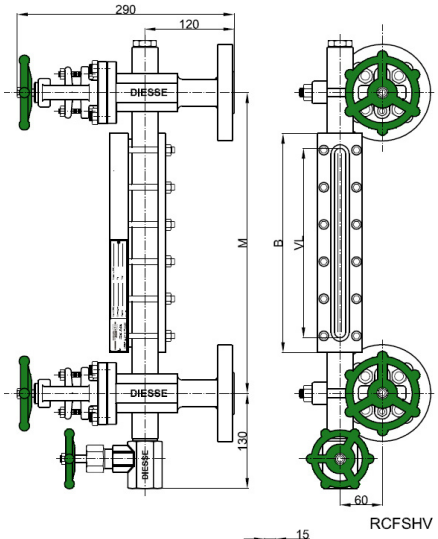
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	**170**	**95**	115x1	4,3
12	2x1	155	**195**	**120**	140x1	4,8
13	3x1	180	**220**	**145**	165x1	5,3
14	4x1	205	**245**	**170**	190x1	5,7
15	5x1	235	**275**	**200**	220x1	6,5
16	6x1	265	**305**	**230**	250x1	6,9
17	7x1	295	**335**	**260**	280x1	7,6
18	8x1	335	**375**	**300**	320x1	8,3
19	9x1	360	**400**	**320**	340x1	8,9
24	4x2	410	**450**	**375**	190x2	9,9
25	5x2	470	**510**	**435**	220x2	11,5
26	6x2	530	**570**	**495**	250x2	12,3
27	7x2	590	**630**	**555**	280x2	13,8
28	8x2	670	**710**	**635**	320x2	15,1
29	9x2	720	**760**	**680**	340x2	16,3
36	6x3	795	**835**	**760**	250x3	17,8
37	7x3	885	**925**	**850**	280x3	19,9
38	8x3	1005	**1045**	**970**	320x3	22,0
39	9x3	1080	**1120**	**1040**	340x3	23,8
47	7x4	1180	**1220**	**1145**	280x4	26,0
48	8x4	1340	**1380**	**1305**	320x4	28,8
49	9x4	1440	**1480**	**1400**	340x4	31,2
57	7x5	1475	**1515**	**1440**	280x5	32,1
58	8x5	1675	**1715**	**1640**	320x5	35,6
59	9x5	1800	**1840**	**1760**	340x5	38,6
68	8x6	2010	**2050**	**1975**	320x6	42,6
69	9x6	2160	**2200**	**2120**	340x6	46,1
78	8x7	2345	**2385**	**2310**	320x7	49,3
79	9x7	2520	**2560**	**2480**	340x7	53,5
88	8x8	2680	**2720**	**2645**	320x8	56,1
89	9x8	2880	**2920**	**2840**	340x8	60,9

Tab. RCF

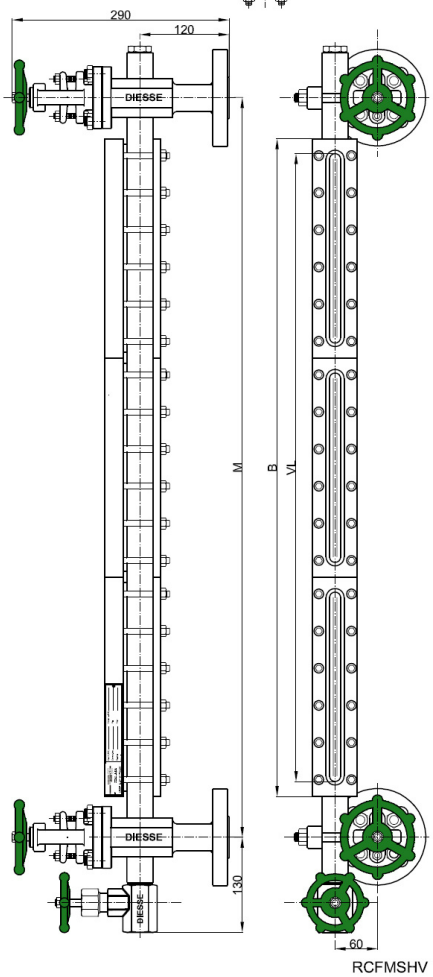
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE
REFLEX TYPE
PN40 and PN64 / Class 300
DS LG - RCF SHV

Code: DS LG-RCF…-… /40/RF-SHV/…/…-M…-CS/CS



RCFSHV



RCFMSHV

Technical data

Service conditions
Max Pressure: PN40 and PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300-600/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RCF: see below table
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS RCF: see from page 1.69 (Drawing with components and parts list see page 1.62)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

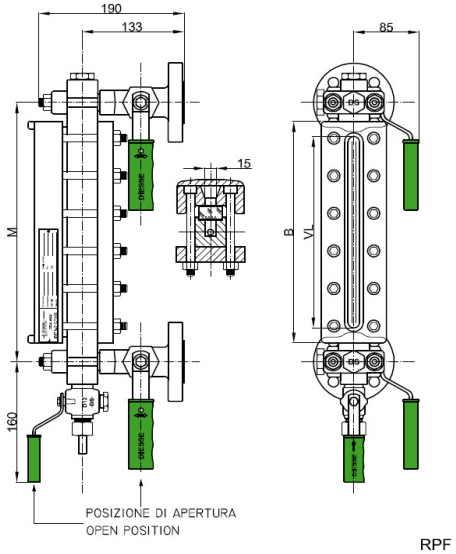
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	4,3
12	2x1	155	**235**	**120**	140x1	4,8
13	3x1	180	**260**	**145**	165x1	5,3
14	4x1	205	**285**	**170**	190x1	5,7
15	5x1	235	**315**	**200**	220x1	6,5
16	6x1	265	**345**	**230**	250x1	6,9
17	7x1	295	**375**	**260**	280x1	7,6
18	8x1	335	**415**	**300**	320x1	8,3
19	9x1	360	**440**	**320**	340x1	8,9
24	4x2	410	**490**	**375**	190x2	9,9
25	5x2	470	**550**	**435**	220x2	11,5
26	6x2	530	**610**	**495**	250x2	12,3
27	7x2	590	**670**	**555**	280x2	13,8
28	8x2	670	**750**	**635**	320x2	15,1
29	9x2	720	**800**	**680**	340x2	16,3
36	6x3	795	**875**	**760**	250x3	17,8
37	7x3	885	**965**	**850**	280x3	19,9
38	8x3	1005	**1085**	**970**	320x3	22,0
39	9x3	1080	**1160**	**1040**	340x3	23,8
47	7x4	1180	**1260**	**1145**	280x4	26,0
48	8x4	1340	**1420**	**1305**	320x4	28,8
49	9x4	1440	**1520**	**1400**	340x4	31,2
57	7x5	1475	**1555**	**1440**	280x5	32,1
58	8x5	1675	**1755**	**1640**	320x5	35,6
59	9x5	1800	**1880**	**1760**	340x5	38,6
68	8x6	2010	**2090**	**1975**	320x6	42,6
69	9x6	2160	**2240**	**2120**	340x6	46,1
78	8x7	2345	**2425**	**2310**	320x7	49,3
79	9x7	2520	**2600**	**2480**	340x7	53,5
88	8x8	2680	**2760**	**2645**	320x8	56,1
89	9x8	2880	**2960**	**2840**	340x8	60,9

Tab. RCF

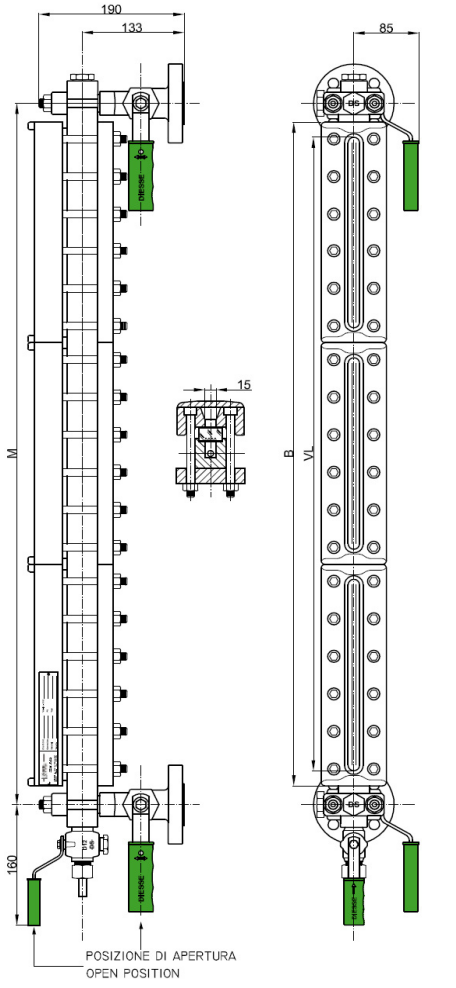
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE
REFLEX TYPE
PN100 and PN160 / Class 600 and 900
DS LG - RPF GR18

Code: DS LG-RPF…-… /100/RF-GR18/…/…-M…-CS/CS



RPF



RPFM

Technical data

Service conditions
Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and
PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN100-160 DN20 - DN25 ANSI #600-900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RPF: see below table
Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS RPF: see from page 1.69 (Drawing with components and parts list see page 1.63)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

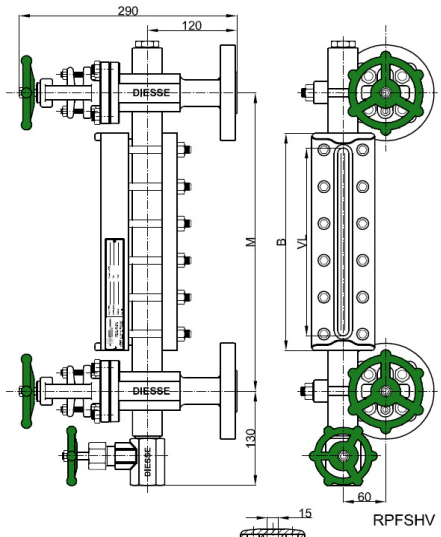
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	**180**	**95**	115x1	7,7
12	2x1	155	**205**	**120**	140x1	8,6
13	3x1	180	**230**	**145**	165x1	9,9
14	4x1	205	**255**	**170**	190x1	11,0
15	5x1	235	**285**	**200**	220x1	12,3
16	6x1	265	**315**	**230**	250x1	13,1
17	7x1	295	**345**	**260**	280x1	14,8
18	8x1	335	**385**	**300**	320x1	16,0
19	9x1	360	**410**	**320**	340x1	17,7
24	4x2	410	**460**	**375**	190x2	20,5
25	5x2	470	**520**	**435**	220x2	23,1
26	6x2	530	**580**	**495**	250x2	24,7
27	7x2	590	**640**	**555**	280x2	28,1
28	8x2	670	**720**	**635**	320x2	30,5
29	9x2	720	**770**	**680**	340x2	33,9
36	6x3	795	**845**	**760**	250x3	36,3
37	7x3	885	**935**	**850**	280x3	41,4
38	8x3	1005	**1055**	**970**	320x3	45,0
39	9x3	1080	**1130**	**1040**	340x3	50,1
47	7x4	1180	**1230**	**1145**	280x4	54,7
48	8x4	1340	**1390**	**1305**	320x4	59,5
49	9x4	1440	**1490**	**1400**	340x4	66,3
57	7x5	1475	**1525**	**1440**	280x5	68,0
58	8x5	1675	**1725**	**1640**	320x5	74,0
59	9x5	1800	**1850**	**1760**	340x5	82,5

Tab. RPF

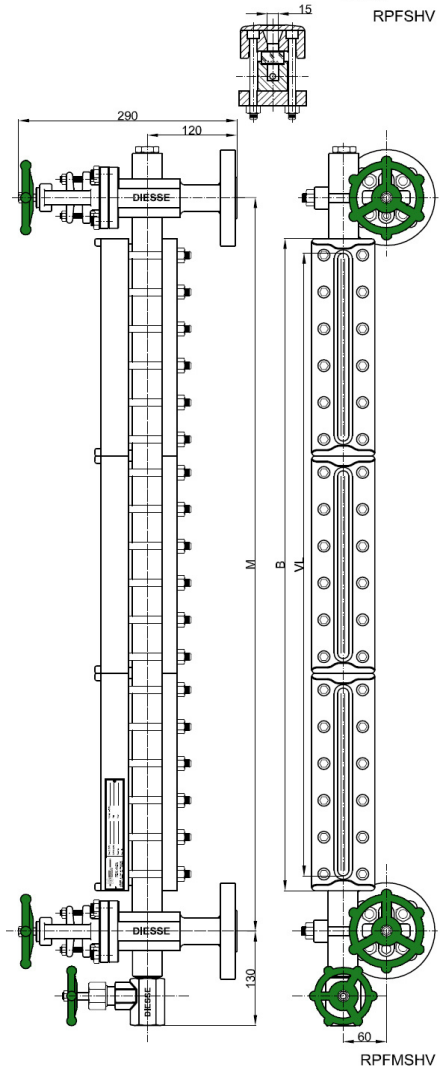
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE
REFLEX TYPE
PN100 and PN160 / Class 600 and 900
DS LG - RPF SHV

Code: DS LG-RPF…-… /100/RF-SHV/…/…-M…-CS/CS



RPFSHV



RPFMSHV

Technical data

Service conditions
Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and
PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN100-160 DN20-25 ANSI #600-900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RPF: see below table
Valves DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS RPF: see from page 1.69 (Drawing with components and parts list see page 1.63)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	7,7
12	2x1	155	**235**	**120**	140x1	8,6
13	3x1	180	**260**	**145**	165x1	9,9
14	4x1	205	**285**	**170**	190x1	11,0
15	5x1	235	**315**	**200**	220x1	12,3
16	6x1	265	**345**	**230**	250x1	13,1
17	7x1	295	**375**	**260**	280x1	14,8
18	8x1	335	**415**	**300**	320x1	16,0
19	9x1	360	**440**	**320**	340x1	17,7
24	4x2	410	**490**	**375**	190x2	20,5
25	5x2	470	**550**	**435**	220x2	23,1
26	6x2	530	**610**	**495**	250x2	24,7
27	7x2	590	**670**	**555**	280x2	28,1
28	8x2	670	**750**	**635**	320x2	30,5
29	9x2	720	**800**	**680**	340x2	33,9
36	6x3	795	**875**	**760**	250x3	36,3
37	7x3	885	**965**	**850**	280x3	41,4
38	8x3	1005	**1085**	**970**	320x3	45,0
39	9x3	1080	**1160**	**1040**	340x3	50,1
47	7x4	1180	**1260**	**1145**	280x4	54,7
48	8x4	1340	**1420**	**1305**	320x4	59,5
49	9x4	1440	**1520**	**1400**	340x4	66,3
57	7x5	1475	**1555**	**1440**	280x5	68,0
58	8x5	1675	**1755**	**1640**	320x5	74,0
59	9x5	1800	**1880**	**1760**	340x5	82,5

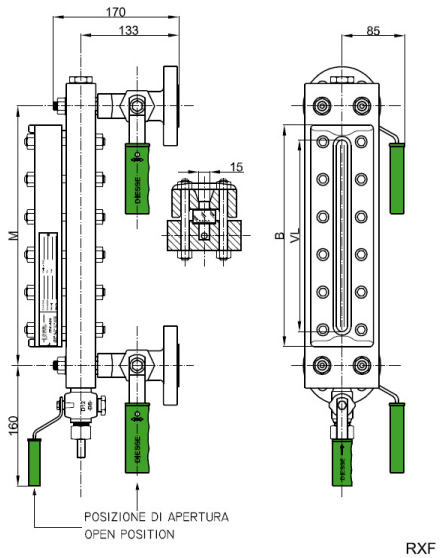
Tab. RPF

DS DIESSE FLUID CONTROL

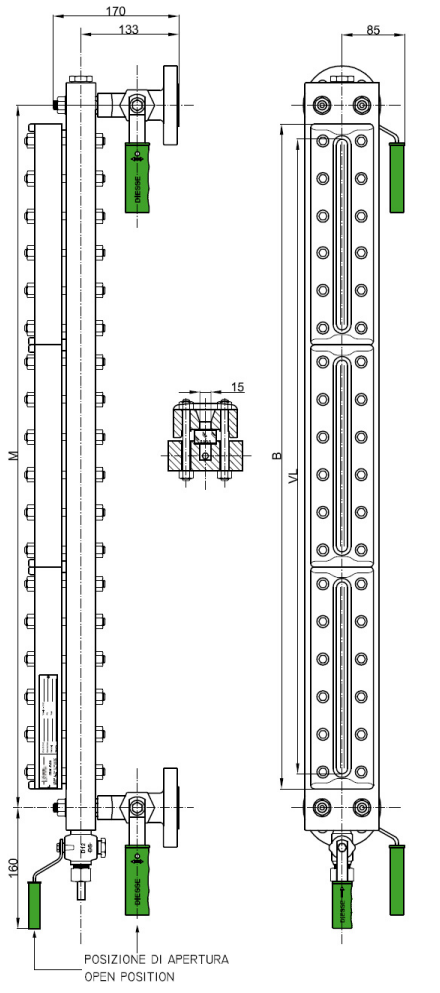
GLASS LEVEL GAUGE
REFLEX TYPE
PN160 / Class 900

DS LG - RXF GR18

Code: DS LG-RXF…-… /160/RF-GR18/…/…-M…-CS/CS



RXF



RXFM

Technical data

Service conditions
Max Pressure: PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN160 DN20 - DN25 ANSI #900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RXF: see below table
Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS RXF: see from page 1.69 (Drawing with components and parts list see page 1.63)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	**180**	**95**	115x1	11,3
12	2x1	155	**205**	**120**	140x1	12,7
13	3x1	180	**230**	**145**	165x1	14,4
14	4x1	205	**255**	**170**	190x1	15,5
15	5x1	235	**285**	**200**	220x1	17,7
16	6x1	265	**315**	**230**	250x1	19,0
17	7x1	295	**345**	**260**	280x1	21,3
18	8x1	335	**385**	**300**	320x1	23,1
19	9x1	360	**410**	**320**	340x1	25,2
24	4x2	410	**460**	**375**	190x2	28,0
25	5x2	470	**520**	**435**	220x2	32,4
26	6x2	530	**580**	**495**	250x2	35,0
27	7x2	590	**640**	**555**	280x2	39,6
28	8x2	670	**720**	**635**	320x2	43,2
29	9x2	720	**770**	**680**	340x2	47,4
36	6x3	795	**845**	**760**	250x3	51,0
37	7x3	885	**935**	**850**	280x3	57,9
38	8x3	1005	**1055**	**970**	320x3	63,3
39	9x3	1080	**1130**	**1040**	340x3	69,6
47	7x4	1180	**1230**	**1145**	280x4	76,2
48	8x4	1340	**1390**	**1305**	320x4	83,4
49	9x4	1440	**1490**	**1400**	340x4	91,8
57	7x5	1475	**1525**	**1440**	280x5	94,5
58	8x5	1675	**1725**	**1640**	320x5	103,5
59	9x5	1800	**1850**	**1760**	340x5	114,0

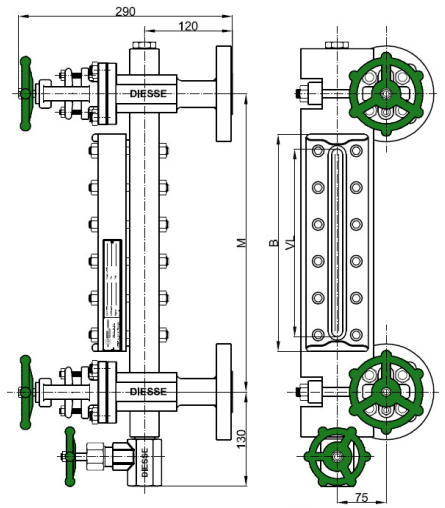
Tab. RXF

DS DIESSE FLUID CONTROL

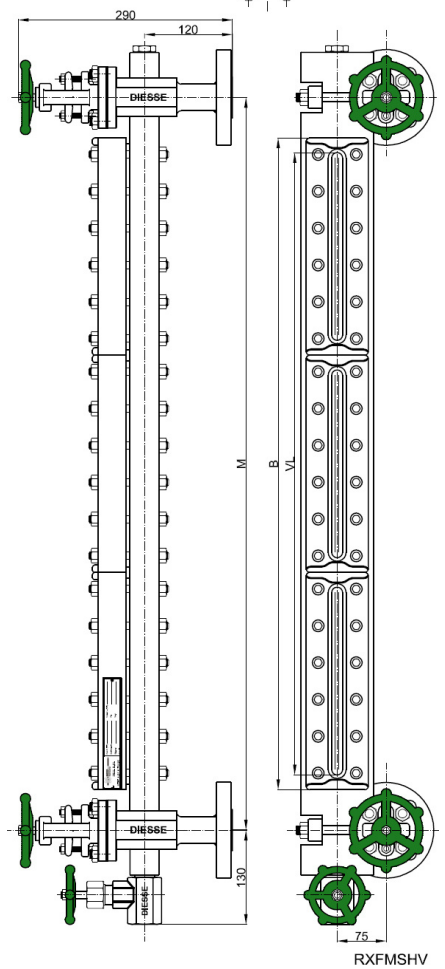
GLASS LEVEL GAUGE
REFLEX TYPE
PN160 / Class 900

DS LG - RXF SHV

Code: DS LG-RXF…-… /160/RF-SHV/…/…-M…-CS/CS



RXFSHV



RXFMSHV

Technical data

Service conditions
Max Pressure: PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN160 DN20-25 ANSI #900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RXF: see below table
Valves DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN160)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS RXF: see from page 1.69 (Drawing with components and parts list see page 1.63)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	11,3
12	2x1	155	**235**	**120**	140x1	12,7
13	3x1	180	**260**	**145**	165x1	14,4
14	4x1	205	**285**	**170**	190x1	15,5
15	5x1	235	**315**	**200**	220x1	17,7
16	6x1	265	**345**	**230**	250x1	19,0
17	7x1	295	**375**	**260**	280x1	21,3
18	8x1	335	**415**	**300**	320x1	23,1
19	9x1	360	**440**	**320**	340x1	25,2
24	4x2	410	**490**	**375**	190x2	28,0
25	5x2	470	**550**	**435**	220x2	32,4
26	6x2	530	**610**	**495**	250x2	35,0
27	7x2	590	**670**	**555**	280x2	39,6
28	8x2	670	**750**	**635**	320x2	43,2
29	9x2	720	**800**	**680**	340x2	47,4
36	6x3	795	**875**	**760**	250x3	51,0
37	7x3	885	**965**	**850**	280x3	57,9
38	8x3	1005	**1085**	**970**	320x3	63,3
39	9x3	1080	**1160**	**1040**	340x3	69,6
47	7x4	1180	**1260**	**1145**	280x4	76,2
48	8x4	1340	**1420**	**1305**	320x4	83,4
49	9x4	1440	**1520**	**1400**	340x4	91,8
57	7x5	1475	**1555**	**1440**	280x5	94,5
58	8x5	1675	**1755**	**1640**	320x5	103,5
59	9x5	1800	**1880**	**1760**	340x5	114,0

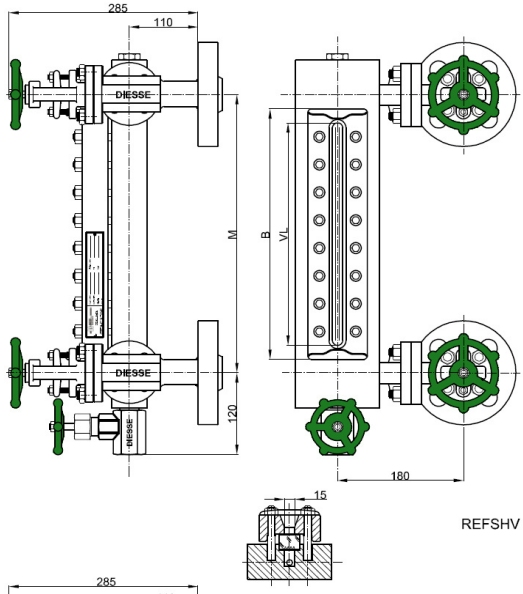
Tab. RXF

DS DIESSE FLUID CONTROL

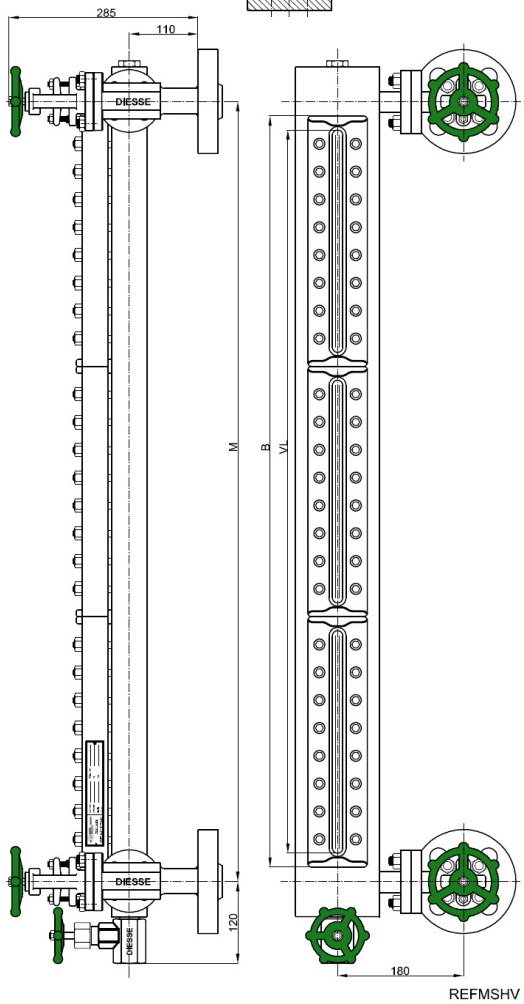
GLASS LEVEL GAUGE REFLEX TYPE PN250 / Class 1500

DS LG - REF SHV

Code: DS LG-REF…-… /1500/…-SHV/…/…-M…-CS/CS



REFSHV



REFMSHV

Technical data

Service conditions
Max Pressure: PN250; Class 1500 (A105: 255,5 bar @ 38°C; AISI 316L: 239,2 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/AISI 316 Option: PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN250 DN On request ANSI #1500 DN On request
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½" with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾" Option: see page 1.54

Glasses
Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B, thickness 21 mm (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS REF: see below table
Valves DS SHV: Kg. 16,5 approx. (With flanges 1" ANSI 1500#RF)

Tightening torque of housing screws
Standard: 90 Nm

Spare parts
Housing DS REF: see from page 1.69 (Drawing with components and parts list see page 1.63)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	13,4
12	2x1	155	**235**	**120**	140x1	15,2
13	3x1	180	**260**	**145**	165x1	17,3
14	4x1	205	**285**	**170**	190x1	18,8
15	5x1	235	**315**	**200**	220x1	21,5
16	6x1	265	**345**	**230**	250x1	23,3
17	7x1	295	**375**	**260**	280x1	26,0
18	8x1	335	**415**	**300**	320x1	28,5
19	9x1	360	**440**	**320**	340x1	31,0
24	4x2	410	**490**	**375**	190x2	34,6
25	5x2	470	**550**	**435**	220x2	40,0
26	6x2	530	**610**	**495**	250x2	43,5
27	7x2	590	**670**	**555**	280x2	49,1
28	8x2	670	**750**	**635**	320x2	53,9
29	9x2	720	**800**	**680**	340x2	59,0
36	6x3	795	**875**	**760**	250x3	63,7
37	7x3	885	**965**	**850**	280x3	72,1
38	8x3	1005	**1085**	**970**	320x3	79,4
39	9x3	1080	**1160**	**1040**	340x3	86,9
47	7x4	1180	**1260**	**1145**	280x4	95,1
48	8x4	1340	**1420**	**1305**	320x4	104,9
49	9x4	1440	**1520**	**1400**	340x4	114,9
57	7x5	1475	**1555**	**1440**	280x5	118,1
58	8x5	1675	**1755**	**1640**	320x5	130,3
59	9x5	1800	**1880**	**1760**	340x5	142,8

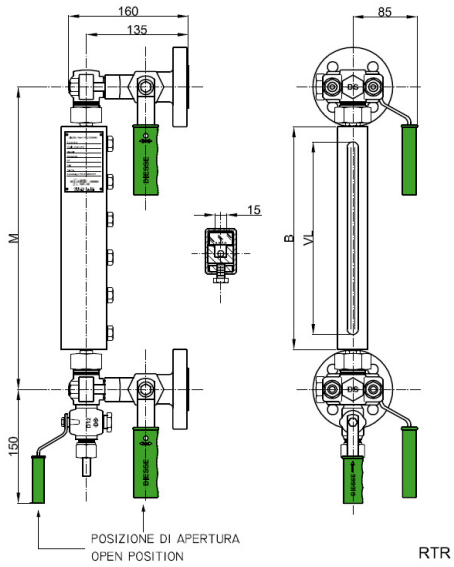
Tab. REF

DS DIESSE FLUID CONTROL

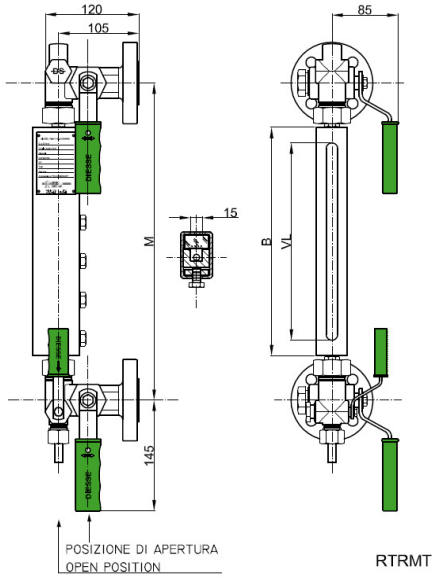
GLASS LEVEL GAUGE REFLEX TYPE PN16

DS LG - RTR GR18 / MT18

Code: DS LG-RTR…-… /16/RF-GR18/…/…-M…-CS/CS



Code: DS LG-RTR…-… /16/RF-MT18/…/…-M…-CS/CS



Technical data

Service conditions
Max Pressure: PN16
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)

Materials (Standard)
Execution:	CS/CS
Gauge body & cocks body:	ASTM A105
Cocks trim:	AISI 303
Non-wetted parts:	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing
(see page 1.47) ***Centre-to-centre distance M = B + 115 mm or 140 mm***
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN16/40 DN15-20-25 ANSI #150/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RTR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)
Cocks DS MT18: Kg. 6,1 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 25 Nm

Spare parts
Housing DS RTR: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)
Cocks DS MT18: see from page 1.72 (Drawing with components and parts list see page 1.67)

With cocks type DS GR18:

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	1,8
12	2x1	155	**260**	**285**	**120**	140x1	2,0
13	3x1	180	**285**	**310**	**145**	165x1	2,2
14	4x1	205	**310**	**335**	**170**	190x1	2,5
15	5x1	235	**340**	**365**	**200**	220x1	2,9
16	6x1	265	**370**	**395**	**230**	250x1	3,2
17	7x1	295	**400**	**425**	**260**	280x1	3,6
18	8x1	335	**440**	**465**	**300**	320x1	4,0
19	9x1	360	**465**	**490**	**320**	340x1	4,3

Tab. RTR

With cocks type DS MT18 (Monolithic body):

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+115	M = B+140	VL	x No. elements	
11	1x1	130	**245**	**270**	**95**	115x1	1,8
12	2x1	155	**270**	**295**	**120**	140x1	2,0
13	3x1	180	**295**	**320**	**145**	165x1	2,2
14	4x1	205	**320**	**345**	**170**	190x1	2,5
15	5x1	235	**350**	**375**	**200**	220x1	2,9
16	6x1	265	**380**	**405**	**230**	250x1	3,2
17	7x1	295	**410**	**435**	**260**	280x1	3,6
18	8x1	335	**450**	**475**	**300**	320x1	4,0
19	9x1	360	**475**	**500**	**320**	340x1	4,3

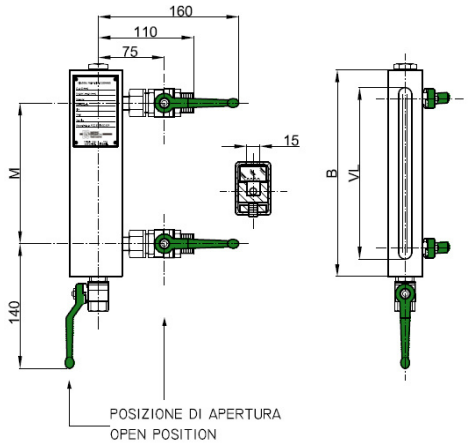
Tab. RTRMT

DS DIESSE FLUID CONTROL

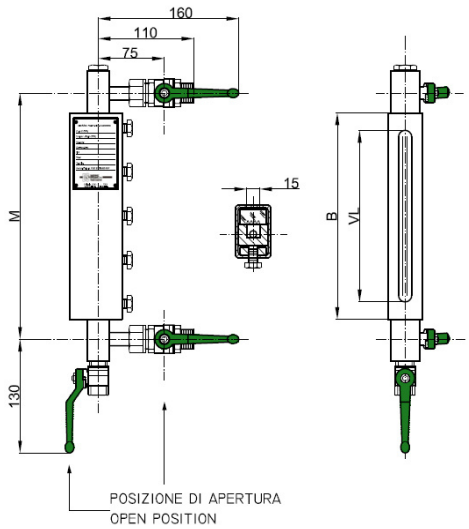
GLASS LEVEL GAUGE REFLEX TYPE PN16

DS LG - RTF SBB / D12

Code: DS LG-RTF…-1/2”GASM-SBB/DBB/PB-M…-CS/CS



RTF



RTF

Technical data

Service conditions
Max Pressure: PN16
Max Temperature:
- With PTFE gaskets and ball valves DS SBB: 120°C
- With graphite gaskets and cylindrical plug cocks DS D12: 170°C

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
On request, Fixed distance, not adjustable

Materials (Standard)

Execution:	CS/CS
Gauge body:	ASTM A105
Body, ball and sealing of ball valves DS SBB:	Brass (CW617N) / Brass (CW617N) / PTFE
Body, trim and sealing of cocks DS D12:	ASTM A105 / AISI 303 / Graphite
Non-wetted parts:	Carbon steel galvanized

Gaskets
Standard: PTFE/copper Option: graphite/copper

Valves
Standard: ball valves DS SBB threaded 1/2” BSP-M - Quick 90° closing
Handling: lever operated

Option: on request cylindrical plug cocks DS D12 threaded 1/2” BSP-M or 1/2” BSP-F - Quick 90° closing (See page 3.3)
Handling: lever operated with PP handle

Process connections:
Standard: threaded 1/2” BSP-M (With ball valves DS SBB)
threaded 1/2” BSP-F (With revolving female connections - without valves)

Vent:
Standard: threaded 3/8” BSP-F with plug

Drain:
Standard: ball valve DS DBB threaded 3/8” BSP-F - Quick 90° closing
Handling: lever operated

Option:
on request with cylindrical plug cocks DS D12 threaded 3/8” BSP-F or BSP-M

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RTF: see below table
Ball valve DS SBB: Kg. 0,2 unit approx.
Cock DS D12: Kg. 0,5 unit approx.

Tightening torque of housing screws
Standard: 20 Nm

Spare parts
Housing DS RTF: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS D12: see from page 1.72

CODE	TYPE	BODY Length [mm]	DISTANCE [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M	VL		
11	1x1	130	**On request**	**95**	115	1,8
12	2x1	155	**On request**	**120**	140	2,0
13	3x1	180	**On request**	**145**	165	2,2
14	4x1	205	**On request**	**170**	190	2,5
15	5x1	235	**On request**	**200**	220	2,9
16	6x1	265	**On request**	**230**	250	3,2
17	7x1	295	**On request**	**260**	280	3,6
18	8x1	335	**On request**	**300**	320	4,0
19	9x1	360	**On request**	**320**	340	4,3

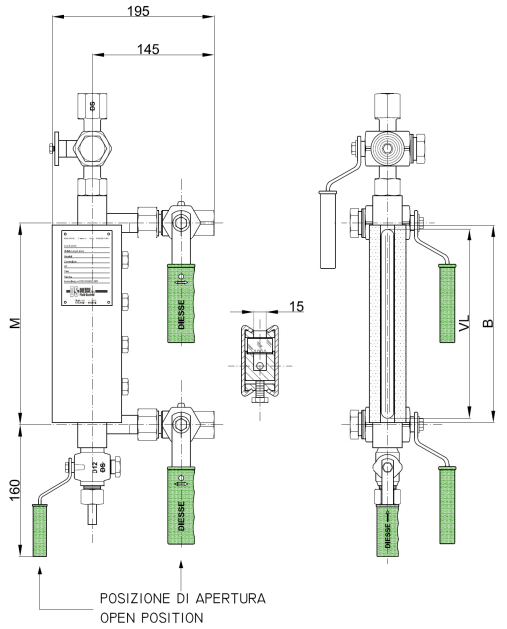
Tab. RTF

DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE REFLEX TYPE PN25

DS LG - RBFPM D18

Code: DS LG-RBFPM…-1/2"GASF-D18/D12/PM18-M…-CS/CS



RBFPM

Technical data

Service conditions
Max Pressure: PN25
Max Temperature: 170°C

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
On request, Fixed distance, not adjustable

Materials (Standard)

Execution:	CS/CS
Gauge body & cocks body:	ASTM A105
Cocks trim:	AISI 303
Non-wetted parts:	Carbon steel galvanized

Gaskets
Standard: graphite/copper

Shut-off cocks
Standard: cylindrical plug cocks DS D18 threaded 1/2" BSP-F - Quick 90° closing (See page 3.4)
Handling: lever operated with PP handle

Process connections:
Standard: threaded 1/2" BSP-F (With cylindrical plug cocks DS D18)
threaded M28x2-F (With revolving female connections - without valves)

Vent:
Standard: three way cylindrical plug manometer setting valve with control flange DS PM18 threaded 1/2" BSP-F (See page 3.5)
Handling: lever operated with PP handle
Option: on request threaded 1/2" BSP-F with plug (Without cock)

Drain:
Standard: with cylindrical plug cock DS D12 threaded 1/2" BSP-M with drain tube - Quick 90° closing (See page 3.3)
Handling: lever operated with PP handle

Glasses
Reflex - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)
Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBFPM: see below table
Cocks DS D18: Kg. 0,9 unit approx.
Cock DS PM18: Kg. 1,2 unit approx.
Cock DS D12: Kg. 0,5 unit approx.

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBFPM: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS D18: see from page 1.72
Cock DS PM18: see from page 1.72
Cock DS D12: see from page 1.72

CODE	TYPE	BODY Length [mm]	DISTANCE [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M	VL		
11	1x1	130	**On request**	**95**	115	2,4
12	2x1	155	**On request**	**120**	140	2,8
13	3x1	180	**On request**	**145**	165	3,3
14	4x1	205	**On request**	**170**	190	3,8
15	5x1	235	**On request**	**200**	220	4,3
16	6x1	265	**On request**	**230**	250	4,9
17	7x1	295	**On request**	**260**	280	5,4
18	8x1	335	**On request**	**300**	320	6,1
19	9x1	360	**On request**	**320**	340	6,6

Tab. RBFPM

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

MARINE LEVEL GAUGES

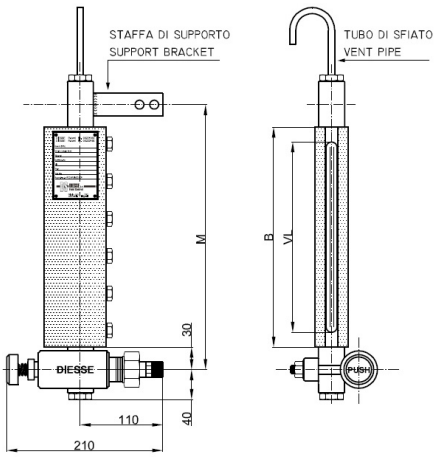
On request the product is available also with
the approval certificate of Lloyd's Register

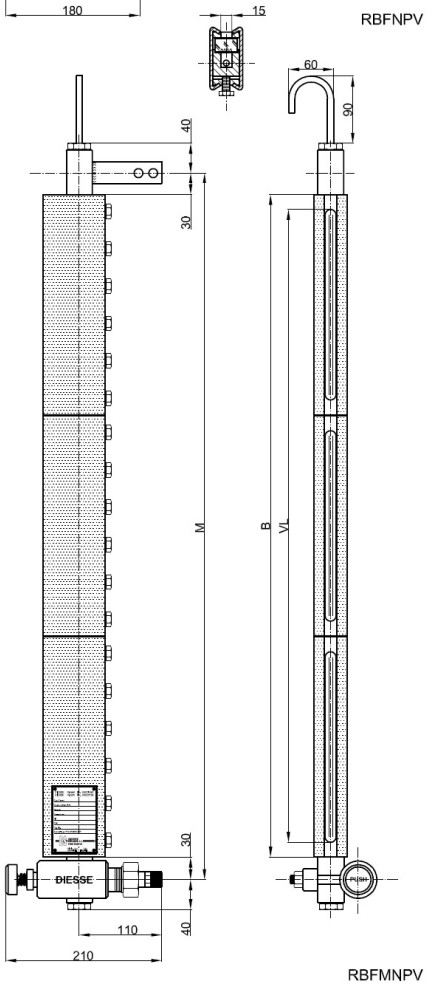
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE REFLEX TYPE PN16

DS LG - RBF NPV

Code: DS LG-RBF…-… /40/RF-NPV/…/…-M…-CS/CS





Technical data

Service conditions
Pressione max: PN16
Temperatura max: 150°C

Application
Fluid storage tanks also aboard of ships

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & valve body:	ASTM A105	AISI 316L
Stem and disc:	AISI 410	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Self-closing Valve
DS NPV: self-closing, push button type
Handling: opening by push button (Standard: valve on the right side; On request on the left side)
Process connections:

Standard flange:	UNI PN16 DN15-20-25	ANSI #150/RF DN ½“ - ¾“ - 1“
Standard threaded unions:	BSP-M ½” - ¾”	NPT-M ½” - ¾”

Option: further connections types
Vent: Standard: threaded ½” with vent pipe Option: on request (See details at page 1.52)
Drain: Standard: threaded ½” with plug Option: on request (See details at page 1.52)

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69) Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBF: see below table
Valve DS NPV: Kg. 2,6 approx. (With flanges UNI DN20 PN16)

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBF: see from page 1.69 (Drawing with components and parts list see page 1.61)
Valve DS NPV: see from page 1.74 (Drawing with components and parts list see page 1.67)

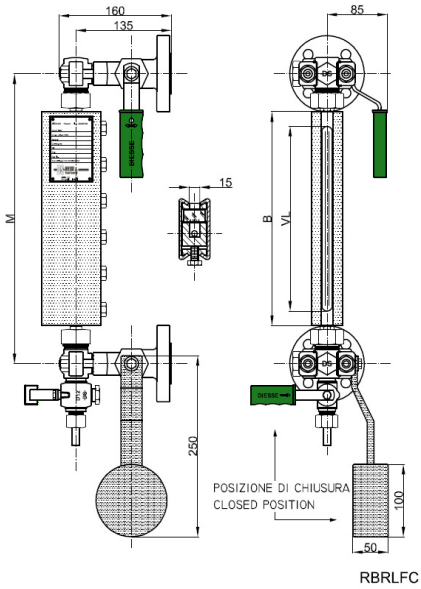
CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+60	VL	x No. elements	
11	1x1	130	**190**	**95**	115x1	3,7
12	2x1	155	**215**	**120**	140x1	4,1
13	3x1	180	**240**	**145**	165x1	4,6
14	4x1	205	**265**	**170**	190x1	5,1
15	5x1	235	**295**	**200**	220x1	5,6
16	6x1	265	**325**	**230**	250x1	6,2
17	7x1	295	**355**	**260**	280x1	6,7
18	8x1	335	**395**	**300**	320x1	7,4
19	9x1	360	**420**	**320**	340x1	7,9
24	4x2	410	**470**	**375**	190x2	8,8
25	5x2	470	**530**	**435**	220x2	9,8
26	6x2	530	**590**	**495**	250x2	11,0
27	7x2	590	**650**	**555**	280x2	12,0
28	8x2	670	**730**	**635**	320x2	13,4
29	9x2	720	**780**	**680**	340x2	14,4
36	6x3	795	**855**	**760**	250x3	15,7
37	7x3	885	**945**	**850**	280x3	17,2
38	8x3	1005	**1065**	**970**	320x3	19,3
39	9x3	1080	**1140**	**1040**	340x3	20,8
47	7x4	1180	**1240**	**1145**	280x4	22,5
48	8x4	1340	**1400**	**1305**	320x4	25,3
49	9x4	1440	**1500**	**1400**	340x4	27,3
57	7x5	1475	**1535**	**1440**	280x5	27,8
58	8x5	1675	**1735**	**1640**	320x5	31,3
59	9x5	1800	**1860**	**1760**	340x5	33,8
68	8x6	2010	**2070**	**1975**	320x6	37,2
69	9x6	2160	**2220**	**2120**	340x6	40,2
78	8x7	2345	**2405**	**2310**	320x7	43,2
79	9x7	2520	**2580**	**2480**	340x7	46,7
88	8x8	2680	**2740**	**2645**	320x8	49,3
89	9x8	2880	**2940**	**2840**	340x8	53,2

Tab. RBF

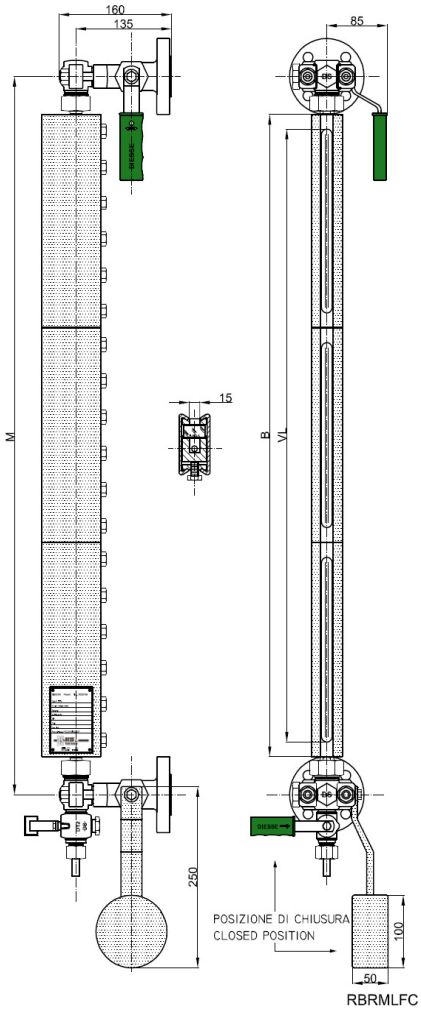
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE
REFLEX TYPE
PN25 and PN40 / Class 150
DS LG - RBR GR18 - LFC

Code: DS LG-RBR…-… /40/RF-GR18/…/…-M…-CS/CS-LFC



RBRLFC



RBRMLFC

Technical data

Service conditions
Max Pressure: PN25 and PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types to the process (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69) Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBR: see below table
Cocks DS GR18 with weight closing for lower handle: Kg. 10,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

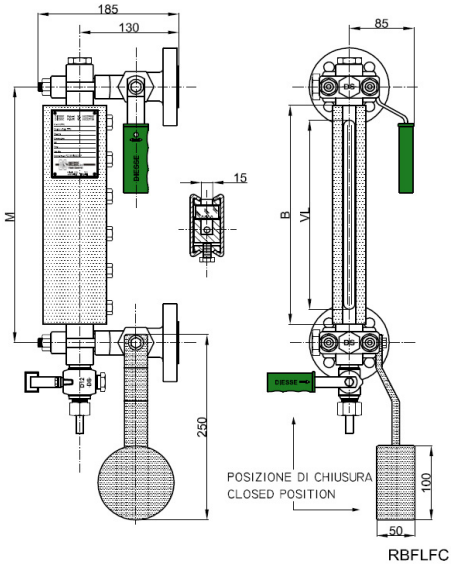
CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	2,4
12	2x1	155	**260**	**285**	**120**	140x1	2,8
13	3x1	180	**285**	**310**	**145**	165x1	3,3
14	4x1	205	**310**	**335**	**170**	190x1	3,8
15	5x1	235	**340**	**365**	**200**	220x1	4,3
16	6x1	265	**370**	**395**	**230**	250x1	4,9
17	7x1	295	**400**	**425**	**260**	280x1	5,4
18	8x1	335	**440**	**465**	**300**	320x1	6,1
19	9x1	360	**465**	**490**	**320**	340x1	6,6
24	4x2	410	**515**	**540**	**375**	190x2	7,5
25	5x2	470	**575**	**600**	**435**	220x2	8,5
26	6x2	530	**635**	**660**	**495**	250x2	9,7
27	7x2	590	**695**	**720**	**555**	280x2	10,7
28	8x2	670	**775**	**800**	**635**	320x2	12,1
29	9x2	720	**825**	**850**	**680**	340x2	13,1
36	6x3	795	**900**	**925**	**760**	250x3	14,4
37	7x3	885	**990**	**1015**	**850**	280x3	15,9
38	8x3	1005	**1110**	**1145**	**970**	320x3	18,0
39	9x3	1080	**1185**	**1210**	**1040**	340x3	19,5
47	7x4	1180	**1285**	**1310**	**1145**	280x4	21,2
48	8x4	1340	**1445**	**1470**	**1305**	320x4	24,0
49	9x4	1440	**1545**	**1570**	**1400**	340x4	26,0
57	7x5	1475	**1580**	**1605**	**1440**	280x5	26,5
58	8x5	1675	**1780**	**1805**	**1640**	320x5	30,0
59	9x5	1800	**1905**	**1930**	**1760**	340x5	32,5
68	8x6	2010	**2115**	**2140**	**1975**	320x6	35,9
69	9x6	2160	**2265**	**2290**	**2120**	340x6	38,9
78	8x7	2345	**2450**	**2475**	**2310**	320x7	41,9
79	9x7	2520	**2625**	**2650**	**2480**	340x7	45,4
88	8x8	2680	**2785**	**2810**	**2645**	320x8	47,9
89	9x8	2880	**2985**	**3010**	**2840**	340x8	51,9

Tab. RBR

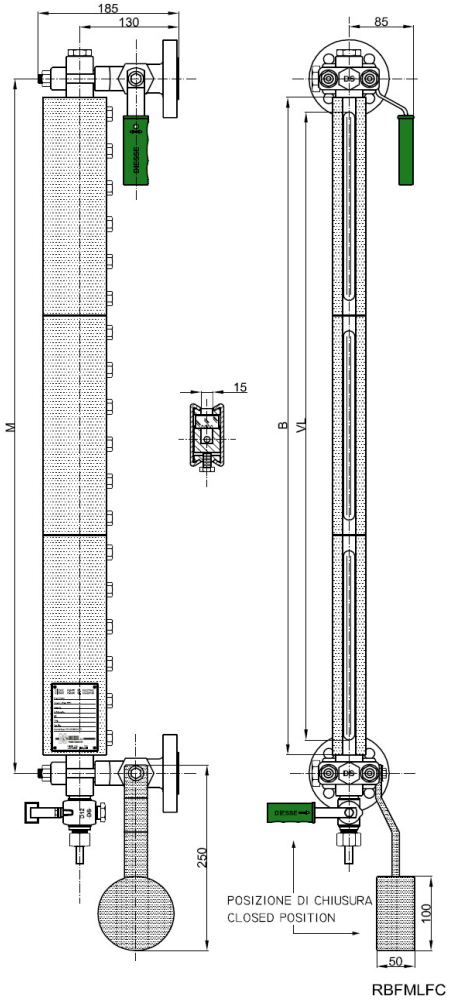
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE
REFLEX TYPE
PN25 and PN40 / Class 150
DS LG - RBF GR18 - LFC

Code: DS LG-RBF…-… /40/RF-GR18/…/…-M…-CS/CS - LFC



RBFLFC



RBFMLFC

Technical data

Service conditions
Max Pressure: PN25 and PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

Application
Fluid storage tanks also aboard of ships

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS
Gauge body & cocks body:	ASTM A105	AISI 316L
Cocks trim:	AISI 303	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Process connections:

Standard flanges:	UNI PN40 DN15-20-25	ANSI #150-300-600/RF DN ½“ - ¾“ - 1“
Standard threaded unions:	BSP-M ½” - ¾”	NPT-M ½” - ¾”

Options: further connections types to the process (see page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Reflex - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69) Option: type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS RBF: see below table
Cocks DS GR18 with weight closing for lower handle: Kg. 10,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 40 Nm

Spare parts
Housing DS RBR: see from page 1.69 (Drawing with components and parts list see page 1.61)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	**170**	**95**	115x1	3,7
12	2x1	155	**195**	**120**	140x1	4,1
13	3x1	180	**220**	**145**	165x1	4,6
14	4x1	205	**245**	**170**	190x1	5,1
15	5x1	235	**275**	**200**	220x1	5,6
16	6x1	265	**305**	**230**	250x1	6,2
17	7x1	295	**335**	**260**	280x1	6,7
18	8x1	335	**375**	**300**	320x1	7,4
19	9x1	360	**400**	**320**	340x1	7,9
24	4x2	410	**450**	**375**	190x2	8,8
25	5x2	470	**510**	**435**	220x2	9,8
26	6x2	530	**570**	**495**	250x2	11,0
27	7x2	590	**630**	**555**	280x2	12,0
28	8x2	670	**710**	**635**	320x2	13,4
29	9x2	720	**760**	**680**	340x2	14,4
36	6x3	795	**835**	**760**	250x3	15,7
37	7x3	885	**925**	**850**	280x3	17,2
38	8x3	1005	**1045**	**970**	320x3	19,3
39	9x3	1080	**1120**	**1040**	340x3	20,8
47	7x4	1180	**1220**	**1145**	280x4	22,5
48	8x4	1340	**1380**	**1305**	320x4	25,3
49	9x4	1440	**1480**	**1400**	340x4	27,3
57	7x5	1475	**1515**	**1440**	280x5	27,8
58	8x5	1675	**1715**	**1640**	320x5	31,3
59	9x5	1800	**1840**	**1760**	340x5	33,8
68	8x6	2010	**2050**	**1975**	320x6	37,2
69	9x6	2160	**2200**	**2120**	340x6	40,2
78	8x7	2345	**2385**	**2310**	320x7	43,2
79	9x7	2520	**2560**	**2480**	340x7	46,7
88	8x8	2680	**2720**	**2645**	320x8	49,3
89	9x8	2880	**2920**	**2840**	340x8	53,2

Tab. RBF

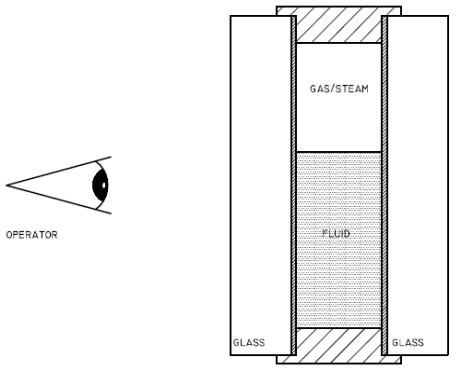
DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

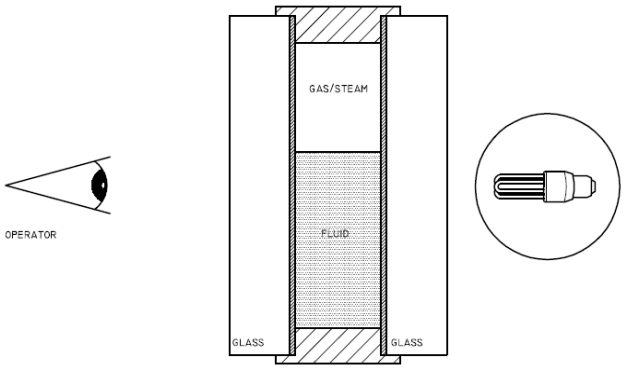
TRASPARENT level gauges

In this kind of level gauge, the fluid is held between two smooth glasses. The level can be identified as the fluid has a different level of transparency compared to gases and steam.

The transparent level gauge is particularly recommended for applications where the glass needs to be protected from corrosive fluids and high temperatures. A lamp can also be fitted behind the gauge to improve visibility in special operating conditions.



With natural light



With artificial light (illumination lamp)

The product line includes level gauges suitable for pressure ratings from PN10 to PN250 and a huge number of industrial process applications.

This type of gauge is recommended:

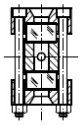
- ❑ for use with corrosive fluids (protective shield for the glass is required)
- ❑ for steam with an operating pressure > 20 bar (protective shield for the glass is required)
- ❑ if repeated thermal shocks are likely (protective shield for the glass is required)
- ❑ for checking the interface (level of separation between two immiscible fluids)
- ❑ for checking the colour of a fluid
- ❑ for dirty / oily fluids

Operating limits / Conditions:

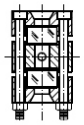
Process:
Max. pressure: 255,5 bar @ 38°C (rating class 1500)
Max. temperature: 300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)

Steam: (see page 1.59)
Max. pressure: 70 bar
Max. temperature: 280°C

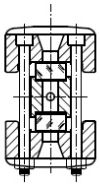
Types:



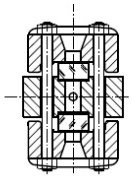
PN25/40
Class 150/300



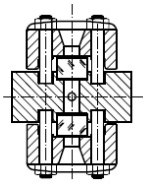
PN40/64
Class 300



PN64/100
Class 600



PN100/160
Class 600/900



PN250
Class 1500

TRASPARENT level gauges

Materials / Specifications:
Connections between housing and cocks:
- with grinded pipes and stuffing box (View can be turned can be positioned by the customer during installation)
- fixed centre-to-centre distance with metal seal (View can be turned can be positioned during manufacture)

Wetted parts:
- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

Non-wetted parts:
- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request

Gaskets: (See page 1.71)
- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE/AISI 316; other extras on request

Glasses: (See page 1.69)
- transparent borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

Shut-off: (See page 1.49)
- standard: upper valve and lower valve (side/side)
- additional options: on request

Drain: (See page 1.50)
- standard: threaded valve
- additional options: on request

Vent: (See page 1.50)
- standard: blind (for grinded pipes version)
- threaded with plug (for fixed distance version)
- additional options: on request

Tank connections:
Flanged:
- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 / #300 / #600 DN ½" / ¾" / 1"
- additional options: on request

Threaded:
- BSP (GAS) standard: ½"-M / ¾"-M
- NPT standard: ½"-M / ¾"-M

Weld-on: from ½" to 1" BW or SW
Option: further connections type or direct connections to the process without shut-off cocks (See page 1.49 for more details)

Shut-off cocks, drain cock and vent cock:
- Cylindrical plug cocks (GR18 or DS MT18 - see page 1.47)
- Globe valves (DS SHV - see page 1.48)
- Push-button valves (DS NPV - see page 1.48)
- Ball valves (DS SBB)

Spare parts:
Our spare parts are interchangeable with those of major international manufacturers.
For the full range of complete sets, turn to the spares section on page 1.69.

Accessories:
Mica or PCTFE protective shield for the glass, flameproof and watertight illumination lamp (ATEX approved), lower and/or upper safety ball, pusher for safety ball, calibrated scale, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (see page 1.55 for details)

Certifications (On request):
- ATEX
- Tests and inspection by Notified Bodies
- NACE MR0175
- Others on request

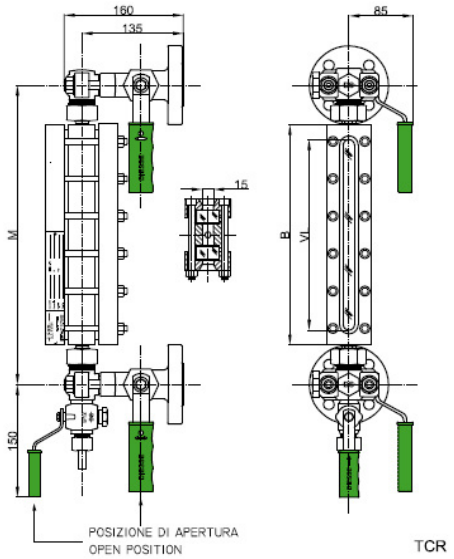
All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.

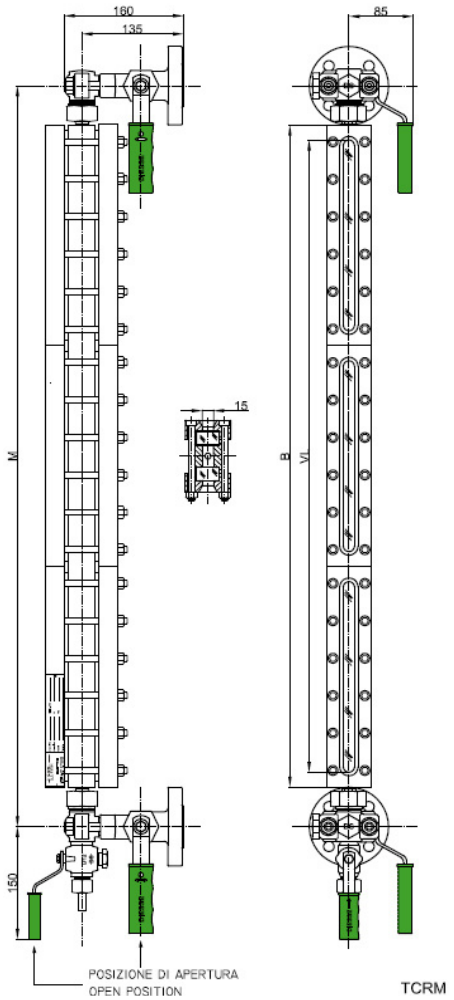
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE TRANSPARENT TYPE PN25 and PN40

DS LG - TCR GR18

Code: DS LG-TCR…-… /40/RF-GR18/…/…-M…-CS/CS





Technical data

Service conditions
Max Pressure: PN25 e PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.50

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TCR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TCR: see from page 1.69 (Drawing with components and parts list see page 1.64)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	3,2
12	2x1	155	**260**	**285**	**120**	140x1	3,8
13	3x1	180	**285**	**310**	**145**	165x1	4,3
14	4x1	205	**310**	**335**	**170**	190x1	4,7
15	5x1	235	**340**	**365**	**200**	220x1	5,5
16	6x1	265	**370**	**395**	**230**	250x1	6,0
17	7x1	295	**400**	**425**	**260**	280x1	6,7
18	8x1	335	**440**	**465**	**300**	320x1	7,4
19	9x1	360	**465**	**490**	**320**	340x1	8,1
24	4x2	410	**515**	**540**	**375**	190x2	9,2
25	5x2	470	**575**	**600**	**435**	220x2	10,8
26	6x2	530	**635**	**660**	**495**	250x2	11,8
27	7x2	590	**695**	**720**	**555**	280x2	13,3
28	8x2	670	**775**	**800**	**635**	320x2	14,6
29	9x2	720	**825**	**850**	**680**	340x2	16,0
36	6x3	795	**900**	**925**	**760**	250x3	17,7
37	7x3	885	**990**	**1015**	**850**	280x3	19,8
38	8x3	1005	**1110**	**1145**	**970**	320x3	21,9
39	9x3	1080	**1185**	**1210**	**1040**	340x3	24,0
47	7x4	1180	**1285**	**1310**	**1145**	280x4	26,3
48	8x4	1340	**1445**	**1470**	**1305**	320x4	29,1
49	9x4	1440	**1545**	**1570**	**1400**	340x4	31,9
57	7x5	1475	**1580**	**1605**	**1440**	280x5	32,8
58	8x5	1675	**1780**	**1805**	**1640**	320x5	36,3
59	9x5	1800	**1905**	**1930**	**1760**	340x5	39,8
68	8x6	2010	**2115**	**2140**	**1975**	320x6	43,6
69	9x6	2160	**2265**	**2290**	**2120**	340x6	47,8
78	8x7	2345	**2450**	**2475**	**2310**	320x7	50,8
79	9x7	2520	**2625**	**2650**	**2480**	340x7	55,7
88	8x8	2680	**2785**	**2810**	**2645**	320x8	57,9
89	9x8	2880	**2985**	**3010**	**2840**	340x8	63,5

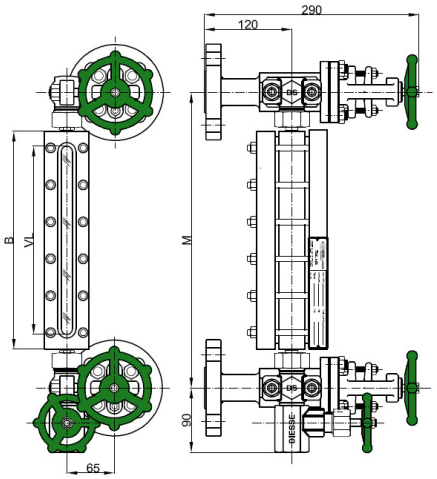
Tab. TCR

DS DIESSE FLUID CONTROL

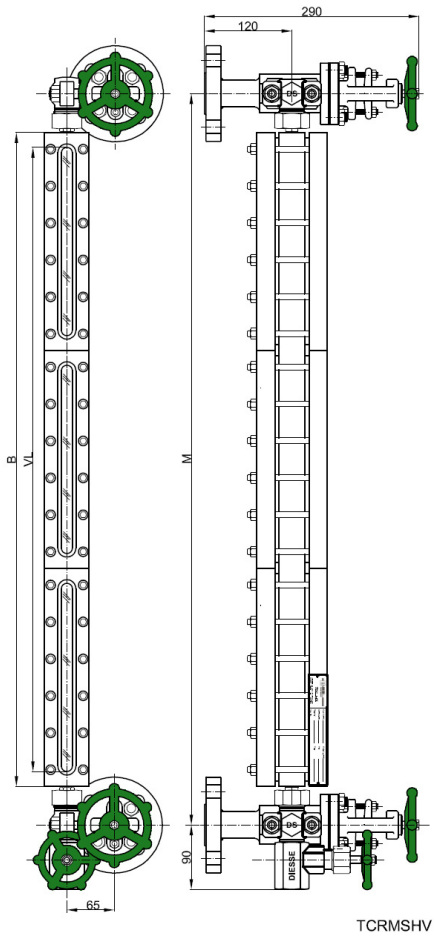
GLASS LEVEL GAUGE TRANSPARENT TYPE PN25 and PN40

DS LG - TCR SHV

Code: DS LG-TCR…-… /40/RF-SHV/…/…-M…-CS/CS



TCRSHV



TCRMSHV

Technical data

Service conditions
Max Pressure: PN25 e PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: blind Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TCR: see below table
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TCR: see from page 1.69 (Drawing with components and parts list see page 1.64)
Valves DS GR18: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	3,2
12	2x1	155	**260**	**285**	**120**	140x1	3,8
13	3x1	180	**285**	**310**	**145**	165x1	4,3
14	4x1	205	**310**	**335**	**170**	190x1	4,7
15	5x1	235	**340**	**365**	**200**	220x1	5,5
16	6x1	265	**370**	**395**	**230**	250x1	6,0
17	7x1	295	**400**	**425**	**260**	280x1	6,7
18	8x1	335	**440**	**465**	**300**	320x1	7,4
19	9x1	360	**465**	**490**	**320**	340x1	8,1
24	4x2	410	**515**	**540**	**375**	190x2	9,2
25	5x2	470	**575**	**600**	**435**	220x2	10,8
26	6x2	530	**635**	**660**	**495**	250x2	11,8
27	7x2	590	**695**	**720**	**555**	280x2	13,3
28	8x2	670	**775**	**800**	**635**	320x2	14,6
29	9x2	720	**825**	**850**	**680**	340x2	16,0
36	6x3	795	**900**	**925**	**760**	250x3	17,7
37	7x3	885	**990**	**1015**	**850**	280x3	19,8
38	8x3	1005	**1110**	**1145**	**970**	320x3	21,9
39	9x3	1080	**1185**	**1210**	**1040**	340x3	24,0
47	7x4	1180	**1285**	**1310**	**1145**	280x4	26,3
48	8x4	1340	**1445**	**1470**	**1305**	320x4	29,1
49	9x4	1440	**1545**	**1570**	**1400**	340x4	31,9
57	7x5	1475	**1580**	**1605**	**1440**	280x5	32,8
58	8x5	1675	**1780**	**1805**	**1640**	320x5	36,3
59	9x5	1800	**1905**	**1930**	**1760**	340x5	39,8
68	8x6	2010	**2115**	**2140**	**1975**	320x6	43,6
69	9x6	2160	**2265**	**2290**	**2120**	340x6	47,8
78	8x7	2345	**2450**	**2475**	**2310**	320x7	50,8
79	9x7	2520	**2625**	**2650**	**2480**	340x7	55,7
88	8x8	2680	**2785**	**2810**	**2645**	320x8	57,9
89	9x8	2880	**2985**	**3010**	**2840**	340x8	63,5

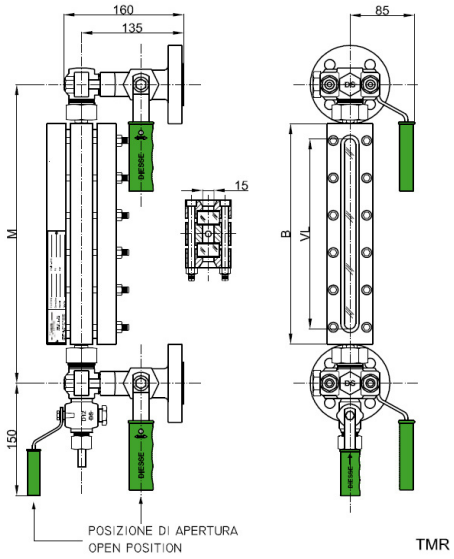
Tab. TCR

DS DIESSE FLUID CONTROL

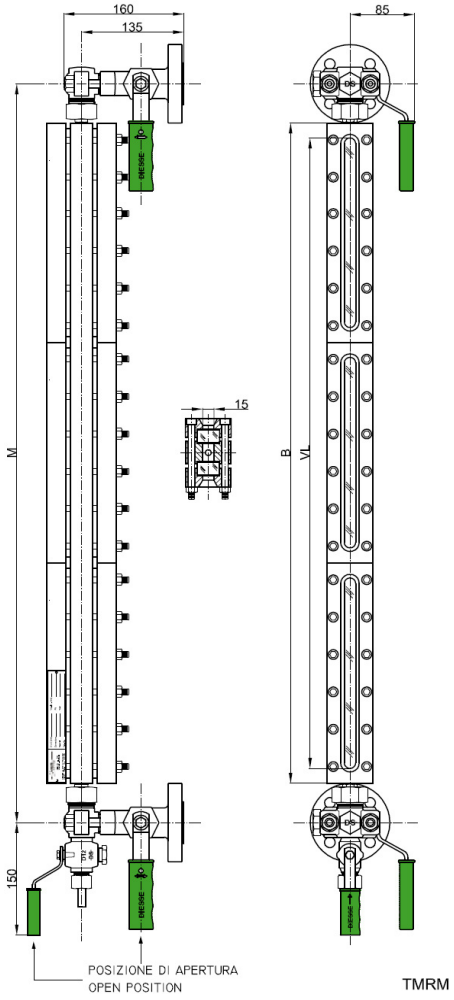
GLASS LEVEL GAUGE TRANSPARENT TYPE PN40

DS LG - TMR GR18

Code: DS LG-TMR…-… /40/RF-GR18/…/…-M…-CS/CS



TMR



TMRM

Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½" - ¾" - 1"
Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½" Option: see page 1.50

Glasses
Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69) Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TMR: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TMR: see from page 1.69 (Drawing with components and parts list see page 1.64)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	3,6
12	2x1	155	**260**	**285**	**120**	140x1	4,3
13	3x1	180	**285**	**310**	**145**	165x1	4,9
14	4x1	205	**310**	**335**	**170**	190x1	5,4
15	5x1	235	**340**	**365**	**200**	220x1	6,3
16	6x1	265	**370**	**395**	**230**	250x1	6,9
17	7x1	295	**400**	**425**	**260**	280x1	7,7
18	8x1	335	**440**	**465**	**300**	320x1	8,6
19	9x1	360	**465**	**490**	**320**	340x1	9,4
24	4x2	410	**515**	**540**	**375**	190x2	10,6
25	5x2	470	**575**	**600**	**435**	220x2	12,4
26	6x2	530	**635**	**660**	**495**	250x2	13,6
27	7x2	590	**695**	**720**	**555**	280x2	15,2
28	8x2	670	**775**	**800**	**635**	320x2	17,0
29	9x2	720	**825**	**850**	**680**	340x2	18,6
36	6x3	795	**900**	**925**	**760**	250x3	20,3
37	7x3	885	**990**	**1015**	**850**	280x3	22,7
38	8x3	1005	**1110**	**1145**	**970**	320x3	25,4
39	9x3	1080	**1185**	**1210**	**1040**	340x3	27,8
47	7x4	1180	**1285**	**1310**	**1145**	280x4	30,2
48	8x4	1340	**1445**	**1470**	**1305**	320x4	33,8
49	9x4	1440	**1545**	**1570**	**1400**	340x4	37,0
57	7x5	1475	**1580**	**1605**	**1440**	280x5	37,7
58	8x5	1675	**1780**	**1805**	**1640**	320x5	42,2
59	9x5	1800	**1905**	**1930**	**1760**	340x5	46,2
68	8x6	2010	**2115**	**2140**	**1975**	320x6	50,6
69	9x6	2160	**2265**	**2290**	**2120**	340x6	55,4
78	8x7	2345	**2450**	**2475**	**2310**	320x7	59,0
79	9x7	2520	**2625**	**2650**	**2480**	340x7	64,6
88	8x8	2680	**2785**	**2810**	**2645**	320x8	67,4
89	9x8	2880	**2985**	**3010**	**2840**	340x8	73,8

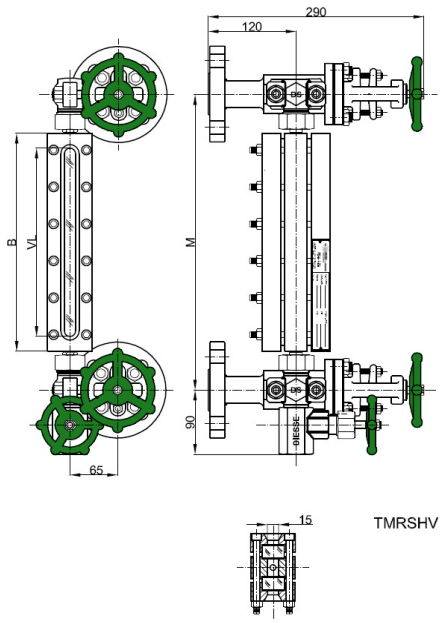
Tab. TMR

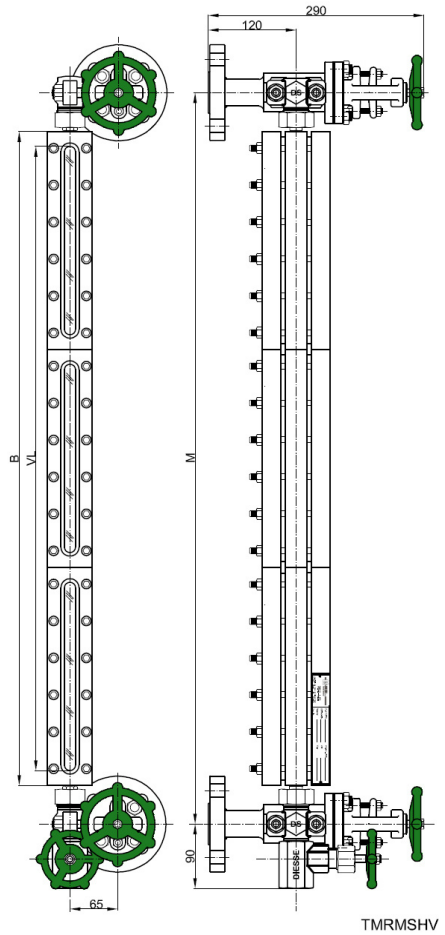
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE TRANSPARENT TYPE PN40

DS LG - TMR SHV

Code: DS LG-TMR…-… /40/RF-SHV/…/…-M…-CS/CS





Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: adjustable on 360° in the installation phase

Distance (Centre-to-centre)
Standard: see below table (**Distance adjustable - 0 mm / + 10 mm**)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: blind Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69) Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TMR: see below table
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TMR: see from page 1.69 (Drawing with components and parts list see page 1.64)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE SL Pipes L = 57 M [-0/+10 mm]	DISTANCE HL Pipes L = 70 M [-0/+10 mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+105	M = B+130	VL	x No. elements	
11	1x1	130	**235**	**260**	**95**	115x1	3,6
12	2x1	155	**260**	**285**	**120**	140x1	4,3
13	3x1	180	**285**	**310**	**145**	165x1	4,9
14	4x1	205	**310**	**335**	**170**	190x1	5,4
15	5x1	235	**340**	**365**	**200**	220x1	6,3
16	6x1	265	**370**	**395**	**230**	250x1	6,9
17	7x1	295	**400**	**425**	**260**	280x1	7,7
18	8x1	335	**440**	**465**	**300**	320x1	8,6
19	9x1	360	**465**	**490**	**320**	340x1	9,4
24	4x2	410	**515**	**540**	**375**	190x2	10,6
25	5x2	470	**575**	**600**	**435**	220x2	12,4
26	6x2	530	**635**	**660**	**495**	250x2	13,6
27	7x2	590	**695**	**720**	**555**	280x2	15,2
28	8x2	670	**775**	**800**	**635**	320x2	17,0
29	9x2	720	**825**	**850**	**680**	340x2	18,6
36	6x3	795	**900**	**925**	**760**	250x3	20,3
37	7x3	885	**990**	**1015**	**850**	280x3	22,7
38	8x3	1005	**1110**	**1145**	**970**	320x3	25,4
39	9x3	1080	**1185**	**1210**	**1040**	340x3	27,8
47	7x4	1180	**1285**	**1310**	**1145**	280x4	30,2
48	8x4	1340	**1445**	**1470**	**1305**	320x4	33,8
49	9x4	1440	**1545**	**1570**	**1400**	340x4	37,0
57	7x5	1475	**1580**	**1605**	**1440**	280x5	37,7
58	8x5	1675	**1780**	**1805**	**1640**	320x5	42,2
59	9x5	1800	**1905**	**1930**	**1760**	340x5	46,2
68	8x6	2010	**2115**	**2140**	**1975**	320x6	50,6
69	9x6	2160	**2265**	**2290**	**2120**	340x6	55,4
78	8x7	2345	**2450**	**2475**	**2310**	320x7	59,0
79	9x7	2520	**2625**	**2650**	**2480**	340x7	64,6
88	8x8	2680	**2785**	**2810**	**2645**	320x8	67,4
89	9x8	2880	**2985**	**3010**	**2840**	340x8	73,8

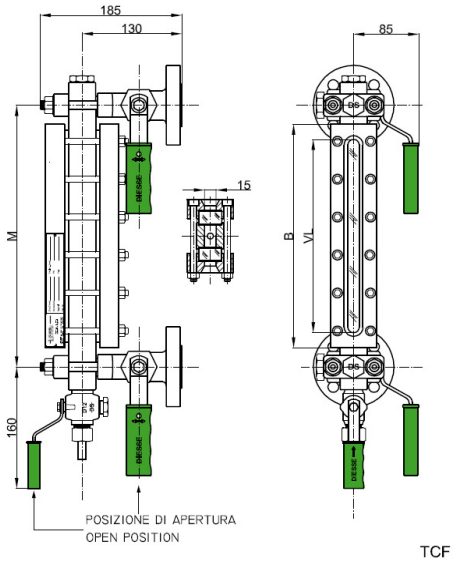
Tab. TMR

DS DIESSE FLUID CONTROL

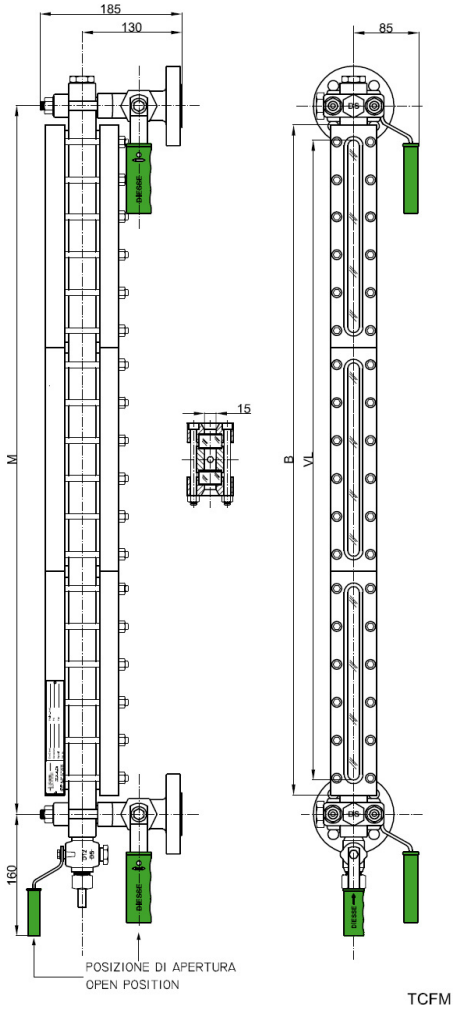
GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 / Class 300

DS LG - TCF GR18

Code: DS LG-TCF…-… /40/RF-GR18/…/…-M…-CS/CS



TCF



TCFM

Technical data

Service conditions
Max Pressure: PN40; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TCF: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TCF: see from page 1.69 (Drawing with components and parts list see page 1.64)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	**170**	**95**	115x1	4,5
12	2x1	155	**195**	**120**	140x1	5,1
13	3x1	180	**220**	**145**	165x1	5,6
14	4x1	205	**245**	**170**	190x1	6,0
15	5x1	235	**275**	**200**	220x1	6,8
16	6x1	265	**305**	**230**	250x1	7,3
17	7x1	295	**335**	**260**	280x1	8,0
18	8x1	335	**375**	**300**	320x1	8,7
19	9x1	360	**400**	**320**	340x1	9,4
24	4x2	410	**450**	**375**	190x2	10,5
25	5x2	470	**510**	**435**	220x2	12,1
26	6x2	530	**570**	**495**	250x2	13,1
27	7x2	590	**630**	**555**	280x2	14,6
28	8x2	670	**710**	**635**	320x2	15,9
29	9x2	720	**760**	**680**	340x2	17,3
36	6x3	795	**835**	**760**	250x3	19,0
37	7x3	885	**925**	**850**	280x3	21,1
38	8x3	1005	**1045**	**970**	320x3	23,2
39	9x3	1080	**1120**	**1040**	340x3	25,3
47	7x4	1180	**1220**	**1145**	280x4	27,6
48	8x4	1340	**1380**	**1305**	320x4	30,4
49	9x4	1440	**1480**	**1400**	340x4	33,2
57	7x5	1475	**1515**	**1440**	280x5	34,1
58	8x5	1675	**1715**	**1640**	320x5	37,6
59	9x5	1800	**1840**	**1760**	340x5	41,1
68	8x6	2010	**2050**	**1975**	320x6	44,9
69	9x6	2160	**2200**	**2120**	340x6	49,1
78	8x7	2345	**2385**	**2310**	320x7	52,1
79	9x7	2520	**2560**	**2480**	340x7	57,0
88	8x8	2680	**2720**	**2645**	320x8	59,2
89	9x8	2880	**2920**	**2840**	340x8	64,8

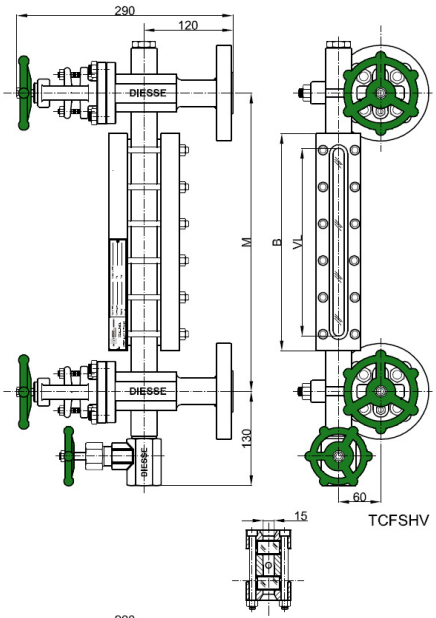
Tab. TCF

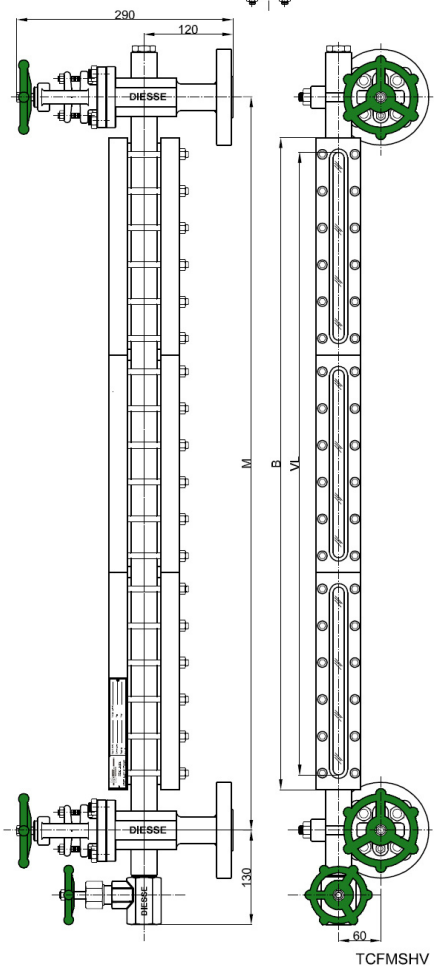
DS DIESSE FLUID CONTROL

GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 / Class 300

DS LG - TCF SHV

Code: DS LG-TCF…-… /40/RF-SHV/…/…-M…-CS/CS





Technical data

Service conditions
Max Pressure: PN40; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TCF: see below table
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TCF: see from page 1.69 (Drawing with components and parts list see page 1.64)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	4,5
12	2x1	155	**235**	**120**	140x1	5,1
13	3x1	180	**260**	**145**	165x1	5,6
14	4x1	205	**285**	**170**	190x1	6,0
15	5x1	235	**315**	**200**	220x1	6,8
16	6x1	265	**345**	**230**	250x1	7,3
17	7x1	295	**375**	**260**	280x1	8,0
18	8x1	335	**415**	**300**	320x1	8,7
19	9x1	360	**440**	**320**	340x1	9,4
24	4x2	410	**490**	**375**	190x2	10,5
25	5x2	470	**550**	**435**	220x2	12,1
26	6x2	530	**610**	**495**	250x2	13,1
27	7x2	590	**670**	**555**	280x2	14,6
28	8x2	670	**750**	**635**	320x2	15,9
29	9x2	720	**800**	**680**	340x2	17,3
36	6x3	795	**875**	**760**	250x3	19,0
37	7x3	885	**965**	**850**	280x3	21,1
38	8x3	1005	**1085**	**970**	320x3	23,2
39	9x3	1080	**1160**	**1040**	340x3	25,3
47	7x4	1180	**1260**	**1145**	280x4	27,6
48	8x4	1340	**1420**	**1305**	320x4	30,4
49	9x4	1440	**1520**	**1400**	340x4	33,2
57	7x5	1475	**1555**	**1440**	280x5	34,1
58	8x5	1675	**1755**	**1640**	320x5	37,6
59	9x5	1800	**1880**	**1760**	340x5	41,1
68	8x6	2010	**2090**	**1975**	320x6	44,9
69	9x6	2160	**2240**	**2120**	340x6	49,1
78	8x7	2345	**2425**	**2310**	320x7	52,1
79	9x7	2520	**2600**	**2480**	340x7	57,0
88	8x8	2680	**2760**	**2645**	320x8	59,2
89	9x8	2880	**2960**	**2840**	340x8	64,8

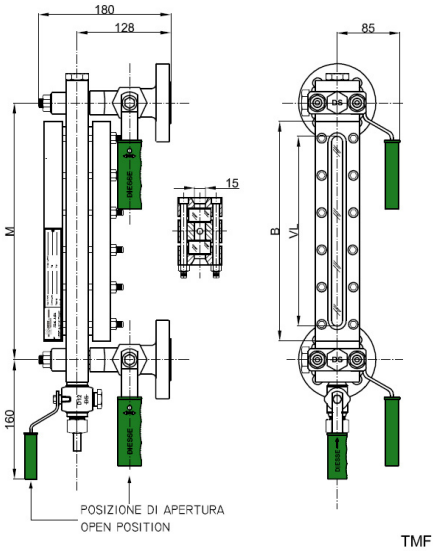
Tab. TCF

DS DIESSE FLUID CONTROL

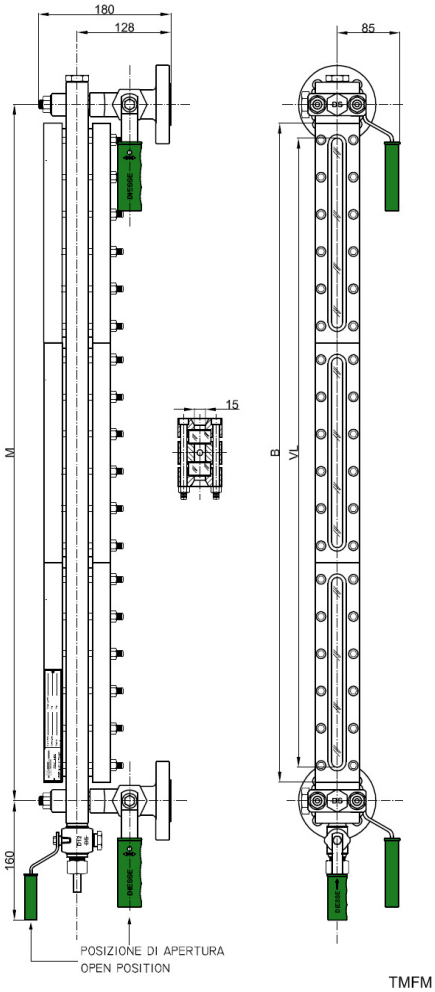
GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 and PN64 / Class 300

DS LG - TMF GR18

Code: DS LG-TMF…-… /40/RF-GR18/…/…-M…-CS/CS



TMF



TMFM

Technical data

Service conditions
Max Pressure: PN40 e PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: BSP-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69) Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TMF: see below table
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TMF: see from page 1.69 (Drawing with components and parts list see page 1.64)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+40	VL	x No. elements	
11	1x1	130	**170**	**95**	115x1	5,4
12	2x1	155	**195**	**120**	140x1	6,1
13	3x1	180	**220**	**145**	165x1	6,7
14	4x1	205	**245**	**170**	190x1	7,2
15	5x1	235	**275**	**200**	220x1	8,1
16	6x1	265	**305**	**230**	250x1	8,8
17	7x1	295	**335**	**260**	280x1	9,5
18	8x1	335	**375**	**300**	320x1	10,4
19	9x1	360	**400**	**320**	340x1	11,2
24	4x2	410	**450**	**375**	190x2	12,4
25	5x2	470	**510**	**435**	220x2	14,2
26	6x2	530	**570**	**495**	250x2	15,4
27	7x2	590	**630**	**555**	280x2	17,0
28	8x2	670	**710**	**635**	320x2	18,8
29	9x2	720	**760**	**680**	340x2	20,4
36	6x3	795	**835**	**760**	250x3	22,1
37	7x3	885	**925**	**850**	280x3	24,5
38	8x3	1005	**1045**	**970**	320x3	27,2
39	9x3	1080	**1120**	**1040**	340x3	29,6
47	7x4	1180	**1220**	**1145**	280x4	32,0
48	8x4	1340	**1380**	**1305**	320x4	35,6
49	9x4	1440	**1480**	**1400**	340x4	38,8
57	7x5	1475	**1515**	**1440**	280x5	39,5
58	8x5	1675	**1715**	**1640**	320x5	44,0
59	9x5	1800	**1840**	**1760**	340x5	48,0
68	8x6	2010	**2050**	**1975**	320x6	52,4
69	9x6	2160	**2200**	**2120**	340x6	57,2
78	8x7	2345	**2385**	**2310**	320x7	60,8
79	9x7	2520	**2560**	**2480**	340x7	66,4
88	8x8	2680	**2720**	**2645**	320x8	69,2
89	9x8	2880	**2920**	**2840**	340x8	75,6

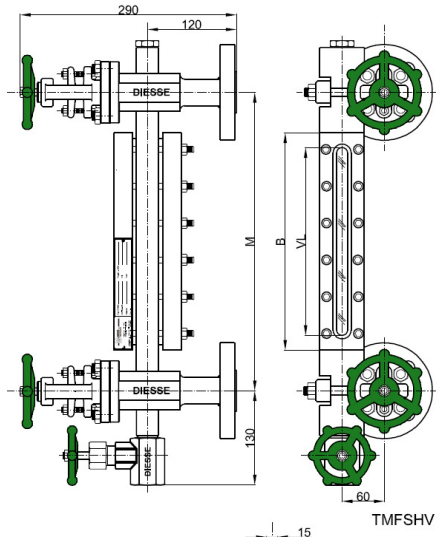
Tab. TMF

DS DIESSE FLUID CONTROL

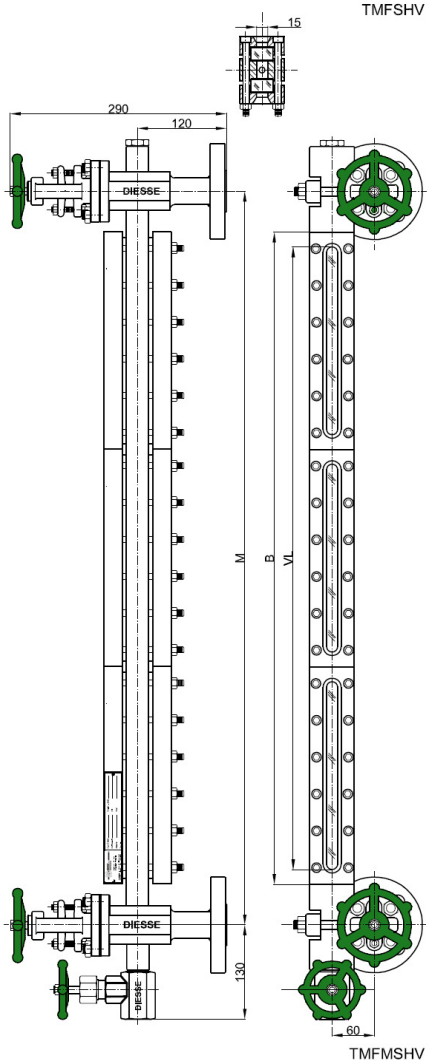
GLASS LEVEL GAUGE TRANSPARENT TYPE PN40 and PN64 / Class 300

DS LG - TMF SHV

Code: DS LG-TMF…-… /40/RF-SHV/…/…-M…-CS/CS



TMFSHV



TMFMSHV

Technical data

Service conditions
Max Pressure: PN40 e PN64; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 3.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN40-64 DN15-20-25 ANSI #150-300/RF DN ½“ - ¾“ - 1“
Standard threaded unions: GAS-M ½” - ¾” NPT-M ½” - ¾”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69) Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TMF: see below table
Valves DS SHV: Kg. 11,8 approx. (With flanges UNI DN20 PN40)

Tightening torque of housing screws
Standard: 35 Nm

Spare parts
Housing DS TMF: see from page 1.69 (Drawing with components and parts list see page 1.64)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	5,4
12	2x1	155	**235**	**120**	140x1	6,1
13	3x1	180	**260**	**145**	165x1	6,7
14	4x1	205	**285**	**170**	190x1	7,2
15	5x1	235	**315**	**200**	220x1	8,1
16	6x1	265	**345**	**230**	250x1	8,8
17	7x1	295	**375**	**260**	280x1	9,5
18	8x1	335	**415**	**300**	320x1	10,4
19	9x1	360	**440**	**320**	340x1	11,2
24	4x2	410	**490**	**375**	190x2	12,4
25	5x2	470	**550**	**435**	220x2	14,2
26	6x2	530	**610**	**495**	250x2	15,4
27	7x2	590	**670**	**555**	280x2	17,0
28	8x2	670	**750**	**635**	320x2	18,8
29	9x2	720	**800**	**680**	340x2	20,4
36	6x3	795	**875**	**760**	250x3	22,1
37	7x3	885	**965**	**850**	280x3	24,5
38	8x3	1005	**1085**	**970**	320x3	27,2
39	9x3	1080	**1160**	**1040**	340x3	29,6
47	7x4	1180	**1260**	**1145**	280x4	32,0
48	8x4	1340	**1420**	**1305**	320x4	35,6
49	9x4	1440	**1520**	**1400**	340x4	38,8
57	7x5	1475	**1555**	**1440**	280x5	39,5
58	8x5	1675	**1755**	**1640**	320x5	44,0
59	9x5	1800	**1880**	**1760**	340x5	48,0
68	8x6	2010	**2090**	**1975**	320x6	52,4
69	9x6	2160	**2240**	**2120**	340x6	57,2
78	8x7	2345	**2425**	**2310**	320x7	60,8
79	9x7	2520	**2600**	**2480**	340x7	66,4
88	8x8	2680	**2760**	**2645**	320x8	69,2
89	9x8	2880	**2960**	**2840**	340x8	75,6

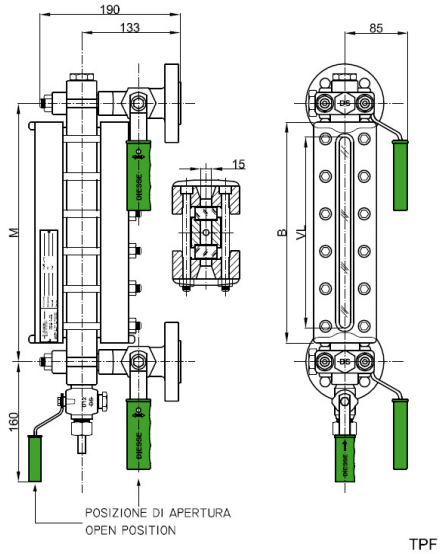
Tab. TMF

DS DIESSE FLUID CONTROL

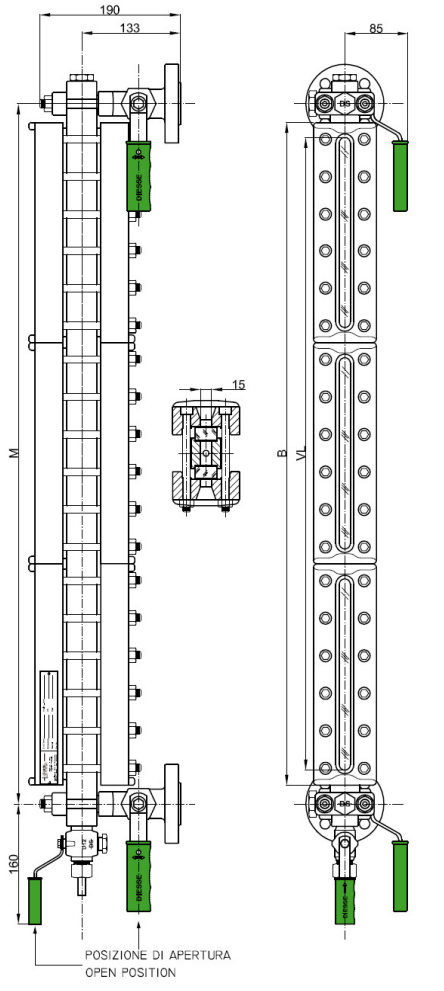
GLASS LEVEL GAUGE TRANSPARENT TYPE PN64 and PN100 / Class 600

DS LG - TPF GR18

Code: DS LG-TPF…-… /100/RF-GR18/…/…-M…-CS/CS



TPF



TPFM

Technical data

Service conditions
Max Pressure: PN64 e PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN64-100 DN20 - DN25 ANSI #600/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TPF: see below table
Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS TPF: see from page 1.69 (Drawing with components and parts list see page 1.65)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	**180**	**95**	115x1	7,9
12	2x1	155	**205**	**120**	140x1	9,0
13	3x1	180	**230**	**145**	165x1	10,5
14	4x1	205	**255**	**170**	190x1	11,5
15	5x1	235	**285**	**200**	220x1	12,8
16	6x1	265	**315**	**230**	250x1	13,5
17	7x1	295	**345**	**260**	280x1	15,4
18	8x1	335	**385**	**300**	320x1	16,8
19	9x1	360	**410**	**320**	340x1	18,1
24	4x2	410	**460**	**375**	190x2	21,5
25	5x2	470	**520**	**435**	220x2	24,1
26	6x2	530	**580**	**495**	250x2	25,5
27	7x2	590	**640**	**555**	280x2	29,3
28	8x2	670	**720**	**635**	320x2	32,1
29	9x2	720	**770**	**680**	340x2	34,7
36	6x3	795	**845**	**760**	250x3	37,5
37	7x3	885	**935**	**850**	280x3	43,2
38	8x3	1005	**1055**	**970**	320x3	47,4
39	9x3	1080	**1130**	**1040**	340x3	51,3
47	7x4	1180	**1230**	**1145**	280x4	57,1
48	8x4	1340	**1390**	**1305**	320x4	62,7
49	9x4	1440	**1490**	**1400**	340x4	67,9
57	7x5	1475	**1525**	**1440**	280x5	71,0
58	8x5	1675	**1725**	**1640**	320x5	78,0
59	9x5	1800	**1850**	**1760**	340x5	84,5

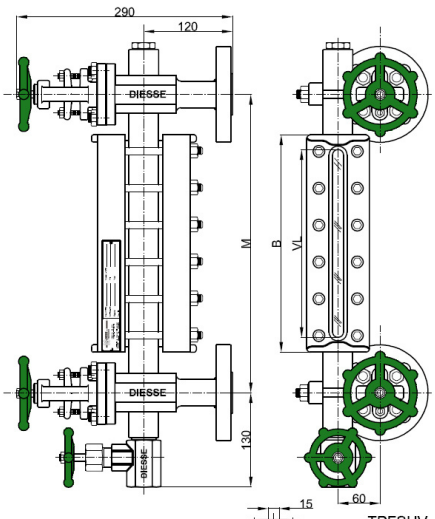
Tab. TPF

DS DIESSE FLUID CONTROL

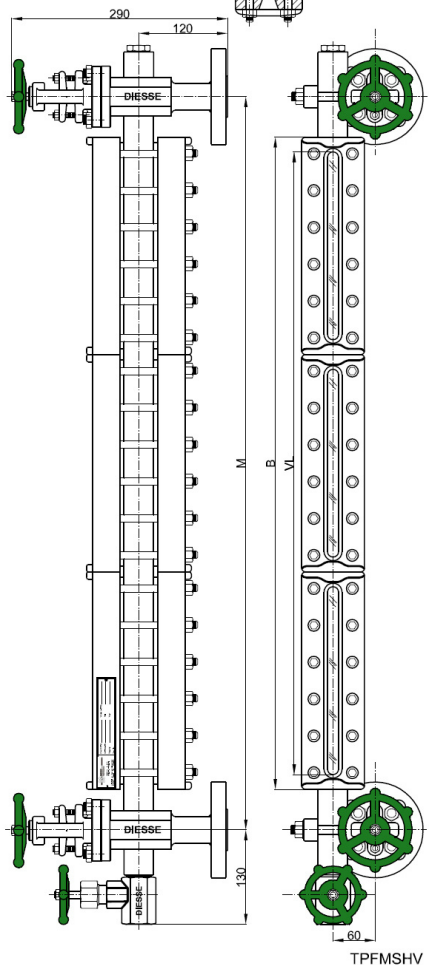
GLASS LEVEL GAUGE TRANSPARENT TYPE PN64 and PN100 / Class 600

DS LG - TPF SHV

Code: DS LG-TPF…-… /100/RF-GR18/…/…-M…-CS/CS



TPFSHV



TPFMSHV

Technical data

Service conditions
Max Pressure: PN64 e PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase
Note: depending on operating conditions, each element may have one or more internal reinforcements

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN64-100 DN15-20-25 ANSI #600/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: valve DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TPF: see below table
Valves DS DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS TPF: see from page 1.69 (Drawing with components and parts list see page 1.65)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	7,9
12	2x1	155	**235**	**120**	140x1	9,0
13	3x1	180	**260**	**145**	165x1	10,5
14	4x1	205	**285**	**170**	190x1	11,5
15	5x1	235	**315**	**200**	220x1	12,8
16	6x1	265	**345**	**230**	250x1	13,5
17	7x1	295	**375**	**260**	280x1	15,4
18	8x1	335	**415**	**300**	320x1	16,8
19	9x1	360	**440**	**320**	340x1	18,1
24	4x2	410	**490**	**375**	190x2	21,5
25	5x2	470	**550**	**435**	220x2	24,1
26	6x2	530	**610**	**495**	250x2	25,5
27	7x2	590	**670**	**555**	280x2	29,3
28	8x2	670	**750**	**635**	320x2	32,1
29	9x2	720	**800**	**680**	340x2	34,7
36	6x3	795	**875**	**760**	250x3	37,5
37	7x3	885	**965**	**850**	280x3	43,2
38	8x3	1005	**1085**	**970**	320x3	47,4
39	9x3	1080	**1160**	**1040**	340x3	51,3
47	7x4	1180	**1260**	**1145**	280x4	57,1
48	8x4	1340	**1420**	**1305**	320x4	62,7
49	9x4	1440	**1520**	**1400**	340x4	67,9
57	7x5	1475	**1555**	**1440**	280x5	71,0
58	8x5	1675	**1755**	**1640**	320x5	78,0
59	9x5	1800	**1880**	**1760**	340x5	84,5

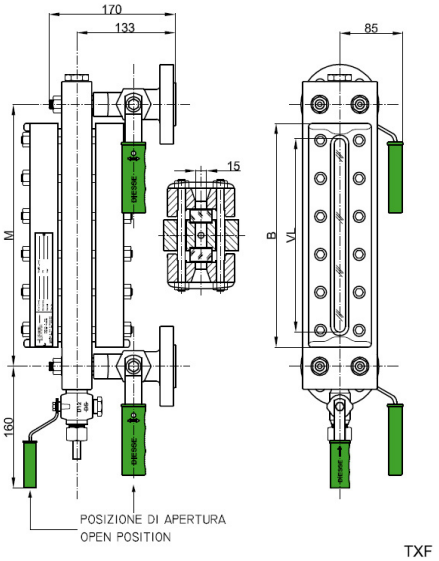
Tab. TPF

DS DIESSE FLUID CONTROL

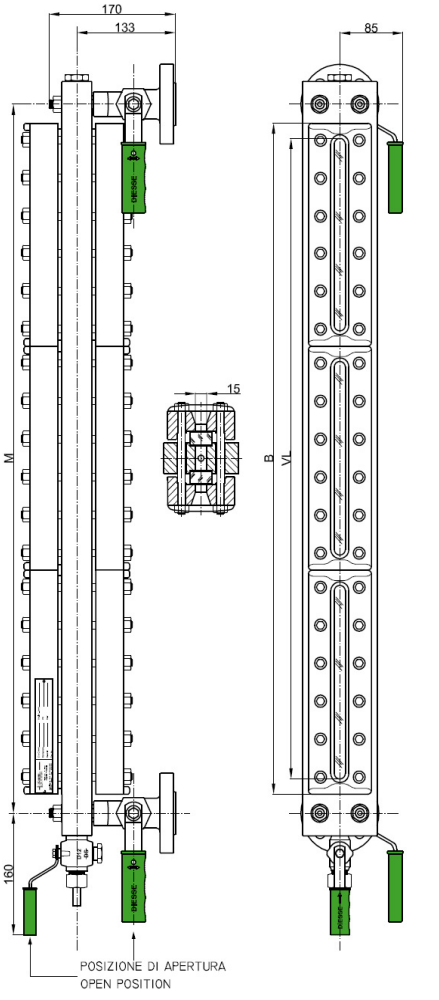
GLASS LEVEL GAUGE TRANSPARENT TYPE PN100 and PN160 / Class 600 and 900

DS LG - TXF GR18

Code: DS LG-TXF…-… /160/RF-GR18/…/…-M…-CS/CS



TXF



TXFM

Technical data

Service conditions
Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and
PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body & cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)
Process connections:
Standard flanges: UNI PN100-160 DN20 - DN25 ANSI #600-900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off cocks (See page 1.51)
Vent: Standard: threaded ½” with plug Option: see page 1.52
Drain: Standard: cock DS D12 threaded ½” Option: see page 1.52

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TXF: see below table
Cocks DS GR18: Kg. 9,2 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS TXF: see from page 1.69 (Drawing with components and parts list see page 1.65)
Cocks DS GR18: see from page 1.72 (Drawing with components and parts list see page 1.66)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+50	VL	x No. elements	
11	1x1	130	**180**	**95**	115x1	11,6
12	2x1	155	**205**	**120**	140x1	13,2
13	3x1	180	**230**	**145**	165x1	15,1
14	4x1	205	**255**	**170**	190x1	16,5
15	5x1	235	**285**	**200**	220x1	18,3
16	6x1	265	**315**	**230**	250x1	19,5
17	7x1	295	**345**	**260**	280x1	22,0
18	8x1	335	**385**	**300**	320x1	24,1
19	9x1	360	**410**	**320**	340x1	25,8
24	4x2	410	**460**	**375**	190x2	30,0
25	5x2	470	**520**	**435**	220x2	33,6
26	6x2	530	**580**	**495**	250x2	36,0
27	7x2	590	**640**	**555**	280x2	41,0
28	8x2	670	**720**	**635**	320x2	45,2
29	9x2	720	**770**	**680**	340x2	48,6
36	6x3	795	**845**	**760**	250x3	52,5
37	7x3	885	**935**	**850**	280x3	60,0
38	8x3	1005	**1055**	**970**	320x3	66,3
39	9x3	1080	**1130**	**1040**	340x3	71,4
47	7x4	1180	**1230**	**1145**	280x4	79,0
48	8x4	1340	**1390**	**1305**	320x4	87,4
49	9x4	1440	**1490**	**1400**	340x4	94,2
57	7x5	1475	**1525**	**1440**	280x5	98,0
58	8x5	1675	**1725**	**1640**	320x5	108,5
59	9x5	1800	**1850**	**1760**	340x5	117,0

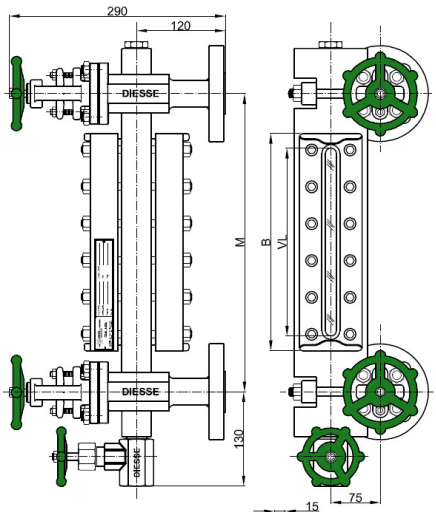
Tab. TXF

DS DIESSE FLUID CONTROL

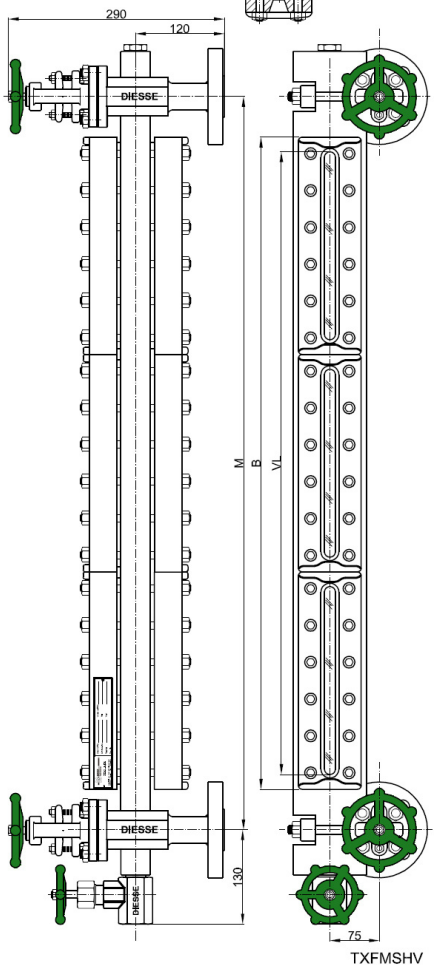
GLASS LEVEL GAUGE TRANSPARENT TYPE PN100 and PN160 / Class 600 and 900

DS LG - TXF SHV

Code: DS LG-TXF…-… /160/RF-SHV/…/…-M…-CS/CS



TXFSHV



TXFMSHV

Technical data

Service conditions
Max Pressure: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C) and
PN160; Class 900 (A105: 153,1 bar @ 38°C; AISI 316L: 148,9 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/copper Option: graphite/AISI 316 or PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN100-160 DN20-25 ANSI #600-900/RF DN ¾“ - 1“
Standard threaded unions: BSP-M ¾” - 1” NPT-M ¾” - 1”
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½” with plug Option: see page 1.54
Drain: Standard: cock DS DHV threaded ¾” Option: see page 1.54

Glasses
Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TXF: see below table
Valves DS SHV: Kg. 13,5 approx. (With flanges UNI DN20 PN100)

Tightening torque of housing screws
Standard: 75 Nm

Spare parts
Housing DS TXF: see from page 1.69 (Drawing with components and parts list see page 1.65)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	11,6
12	2x1	155	**235**	**120**	140x1	13,2
13	3x1	180	**260**	**145**	165x1	15,1
14	4x1	205	**285**	**170**	190x1	16,5
15	5x1	235	**315**	**200**	220x1	18,3
16	6x1	265	**345**	**230**	250x1	19,5
17	7x1	295	**375**	**260**	280x1	22,0
18	8x1	335	**415**	**300**	320x1	24,1
19	9x1	360	**440**	**320**	340x1	25,8
24	4x2	410	**490**	**375**	190x2	30,0
25	5x2	470	**550**	**435**	220x2	33,6
26	6x2	530	**610**	**495**	250x2	36,0
27	7x2	590	**670**	**555**	280x2	41,0
28	8x2	670	**750**	**635**	320x2	45,2
29	9x2	720	**800**	**680**	340x2	48,6
36	6x3	795	**875**	**760**	250x3	52,5
37	7x3	885	**965**	**850**	280x3	60,0
38	8x3	1005	**1085**	**970**	320x3	66,3
39	9x3	1080	**1160**	**1040**	340x3	71,4
47	7x4	1180	**1260**	**1145**	280x4	79,0
48	8x4	1340	**1420**	**1305**	320x4	87,4
49	9x4	1440	**1520**	**1400**	340x4	94,2
57	7x5	1475	**1555**	**1440**	280x5	98,0
58	8x5	1675	**1755**	**1640**	320x5	108,5
59	9x5	1800	**1880**	**1760**	340x5	117,0

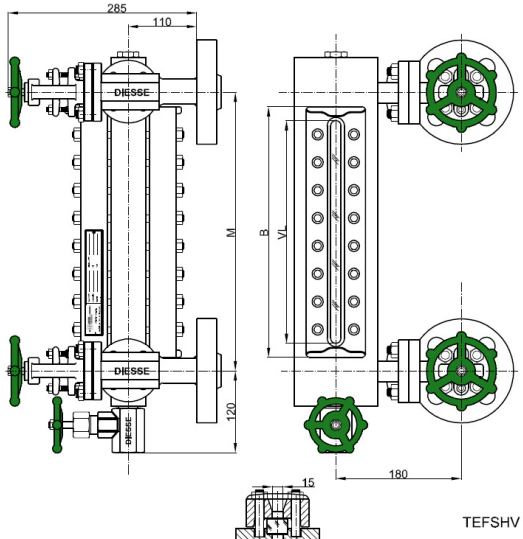
Tab. TXF

DS DIESSE FLUID CONTROL

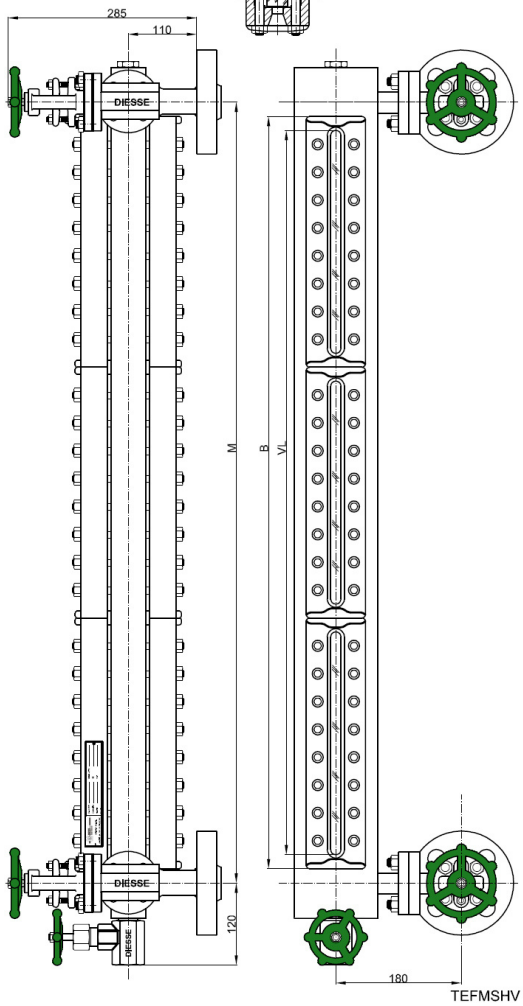
GLASS LEVEL GAUGE TRANSPARENT TYPE PN250 / Class 1500

DS LG - TEF SHV

Code: DS LG-TEF…-… /1500/…-SHV/…/…-M…-CS/CS



TEFSHV



TEFMSHV

Technical data

Service conditions
Max Pressure: PN250; Class 1500 (A105: 255,5 bar @ 38°C; AISI 316L: 239,2 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

View
Standard: front, on request lateral (right or left) adjustable in the production phase

Distance (Centre-to-centre)
Standard: see below table for minimum distance (Fixed distance, not adjustable)
Option: On request intermediate distances and over 2.000 mm

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Gauge body:	ASTM A105 / A105 LF2	AISI 316L	AISI 316L
Valves body:	A105 LF2	AISI 316L	AISI 316L
Stem, disc / seat valves:	AISI 410 / AISI 316	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite/AISI 316 Option: PTFE/AISI316

Shut-off valves
DS SHV: globe type
Handling: by handwheel
Process connections:
Standard flanges: UNI PN250 DN On request ANSI #1500 DN On request
Options: further connections types or direct connections to the process without shut-off valves (See page 1.53)
Vent: Standard: threaded ½" with plug Option: see page 1.54
Drain: Standard: cock DS DHV threaded ¾" Option: see page 1.54

Glasses
Transparent - Borosilicate glass, "extra hard" and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B, thickness 21 mm (See page 1.69)

Accessories
See from page 1.55

Weights
Housing DS TEF: see below table
Valves DS SHV: Kg. 16,5 approx. (With flanges 1" ANSI 1500#RF)

Tightening torque of housing screws
Standard: 90 Nm

Spare parts
Housing DS TEF: see from page 1.69 (Drawing with components and parts list see page 1.65)
Valves DS SHV: see from page 1.74 (Drawing with components and parts list see page 1.68)

CODE	TYPE	BODY Length [mm]	DISTANCE MINIMUM SL [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	M = B+80	VL	x No. elements	
11	1x1	130	**210**	**95**	115x1	13,7
12	2x1	155	**235**	**120**	140x1	15,7
13	3x1	180	**260**	**145**	165x1	18,0
14	4x1	205	**285**	**170**	190x1	19,8
15	5x1	235	**315**	**200**	220x1	22,1
16	6x1	265	**345**	**230**	250x1	23,8
17	7x1	295	**375**	**260**	280x1	26,7
18	8x1	335	**415**	**300**	320x1	29,5
19	9x1	360	**440**	**320**	340x1	31,6
24	4x2	410	**490**	**375**	190x2	36,6
25	5x2	470	**550**	**435**	220x2	41,1
26	6x2	530	**610**	**495**	250x2	44,5
27	7x2	590	**670**	**555**	280x2	50,5
28	8x2	670	**750**	**635**	320x2	55,9
29	9x2	720	**800**	**680**	340x2	60,1
36	6x3	795	**875**	**760**	250x3	65,2
37	7x3	885	**965**	**850**	280x3	74,2
38	8x3	1005	**1085**	**970**	320x3	82,4
39	9x3	1080	**1160**	**1040**	340x3	88,7
47	7x4	1180	**1260**	**1145**	280x4	97,9
48	8x4	1340	**1420**	**1305**	320x4	108,9
49	9x4	1440	**1520**	**1400**	340x4	117,3
57	7x5	1475	**1555**	**1440**	280x5	121,6
58	8x5	1675	**1755**	**1640**	320x5	135,5
59	9x5	1800	**1880**	**1760**	340x5	145,8

Tab. TEF

DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

weld-on level gauges

This type of level gauge is designed to be welded on to the tank and withstand the pressure inside it.

It is made from both carbon steel and stainless steel and can take reflex and transparent glasses.
Reflex glasses are recommended as they improve visibility.

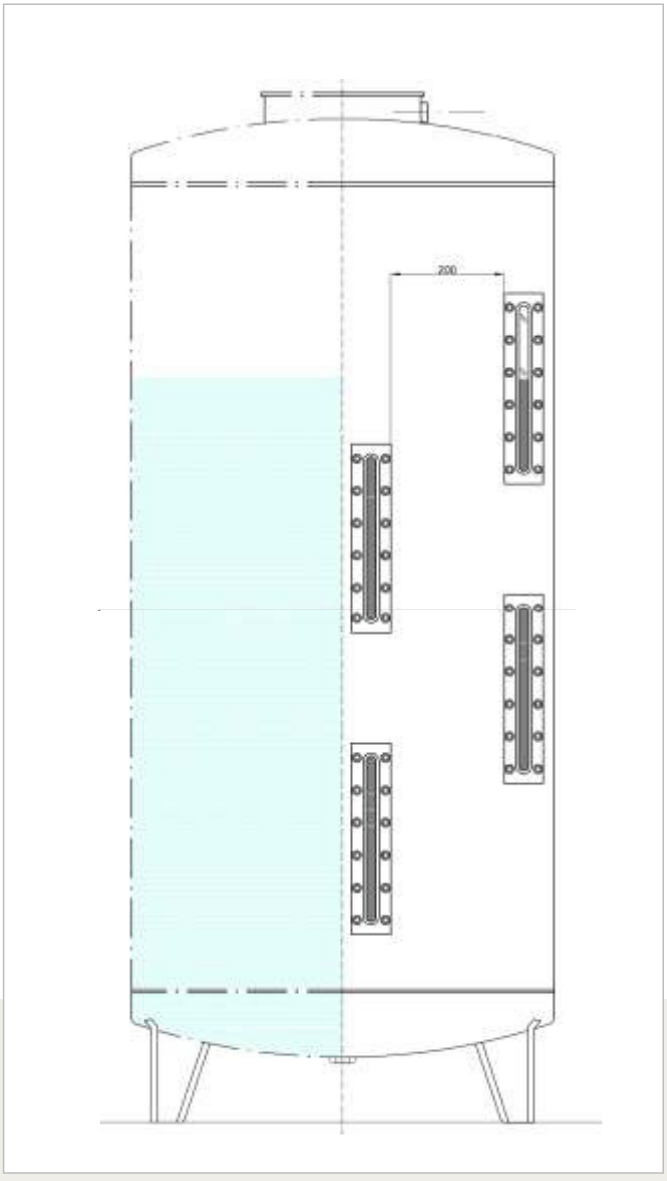
In order to prevent warping or distortions while the level gauge is in service, the technician tasked with installing the product must reinforce the wall of the tank where the gauge is to be welded on.

For visible lengths exceeding 320 mm, we recommend welding additional gauges on different axes to avoid weakening the tank structure.

During welding operations (which must only be carried out prior to gauge assembly), special care must be taken to avoid exposing the weld-on base to high temperatures for long periods of time as this may comprise the resistance of the gauge when in operation.

Operating limits / Conditions:

Process:	
Max. pressure:	rating class 300 (A105: 51 bar; AISI 316L : 49,6 bar) @ 38°C
Max. temperature:	300°C (max. temperature allowed by borosilicate glasses as per the DIN 7081 standard - see page 1.69)
On request:	rating class 600 (A105: 102 bar; AISI 316L : 99,3 bar) @ 38°C



Materials / Specifications

Weld-on base:
- standard: flat with a hole running along the whole visible length
- additional options: with radius (state the tank radius); with 2 holes (Ø: 15 mm) at the far ends of the visible length

Wetted parts:
- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request

Non-wetted parts:
- standard: galvanized carbon steel, AISI 316L stainless steel
- additional options: on request

Gaskets: (see page 1.71)
- standard: graphite
- additional options: PTFE; other extras on request

Glasses: (see page 1.69)
- reflex or transparent borosilicate glasses, thermally pre-stressed and extra hard as per the DIN 7081 standard

Spare parts:
Our spare parts are interchangeable with those of major international manufacturers.
For the full range of complete sets, turn to the spares section on page 1.69.

Accessories:
Mica or PCTFE protective shield (for transparent glass only), calibrated scale, non-frosting extension, minimum level arrow (see page 1.55 for details)

Certifications (on request):
- NACE MR0175
- Others on request

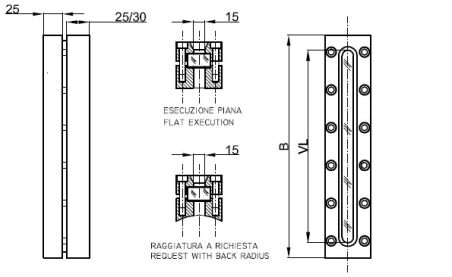
This kind of level gauge can only be tested once it has been welded on to the tank in question.
All DIESSE components are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.

DS DIESSE FLUID CONTROL

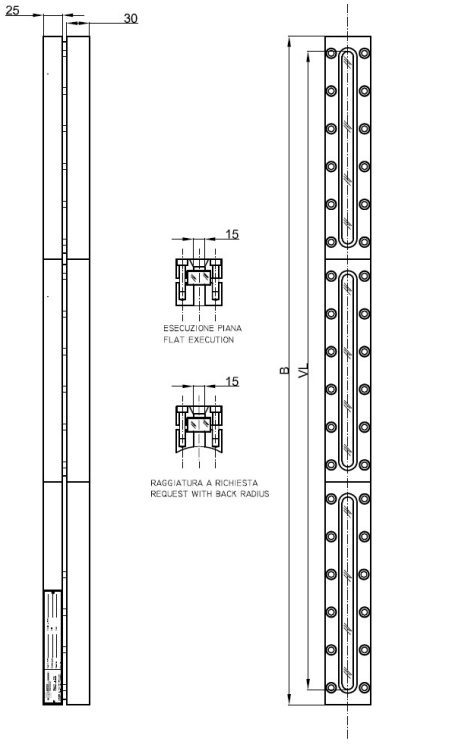
WELD-ON GLASS LEVEL GAUGE REFLEX and TRANSPARENT PN40 / Class 300

DS LG - RCW / TCW

Code: DS LG-RCW…-CS/CS **REFLEX**
Code: DS LG-TCW…-CS/CS **TRANSPARENT**

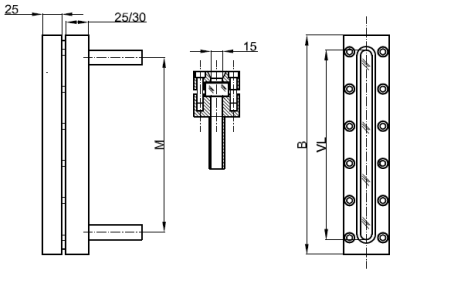


RCW/TCW



RCWM/TCWM

Code: DS LG-RCWSP…-CS/CS **REFLEX**
Code: DS LG-TCWSP…-CS/CS **TRANSPARENT**



RCWSP/TCWSP

Technical data

Service conditions
Max Pressure: PN40; Class 300 (A105: 51 bar @ 38°C; AISI 316L: 49,6 bar @ 38°C)
Option: PN100; Class 600 (A105: 102 bar @ 38°C; AISI 316L: 99,3 bar @ 38°C)
Max Temperature: 300°C (According to DIN 7081 for glasses, see page 1.69)

Total length
Standard: see below table
Option: On request intermediate lengths and over 1.080 mm

Process connections
Standard: Drilling on the whole visible length
Option: Two holes Ø 15 mm at the opposite ends of the visible length or two pipes welded at the centre-to-centre distance requested (See below drawing)

Execution of housing to be weld
Standard: flat
Option: On request with back radius

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Housing body:	ASTM A105	AISI 316L	AISI 316L
Cover:	ASTM A105	ASTM A105	AISI 316L
Bolts and nuts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Gaskets
Standard: graphite Option: PTFE

Glasses
Reflex and Transparent - Borosilicate glass, “extra hard” and thermally pre-stressed - According to DIN 7081
Standard: fitted with type B (See page 1.69)
Option: type A (See page 1.69)

Accessories
See from page 1.55

Weights
See below table

Tightening torque of screws
Standard: 25-30 Nm

Spare parts
See from page 1.69

Recommendation
For requested visible lengths over 320 mm, to avoid the tank structure weakness, it is recommended to weld on the tank more level gauges positioned on different axes

CODE	TYPE	BODY Length [mm]	VISIBLE Length [mm]	GLASS Length [mm]	WEIGHT Housing [Kg]
	x No. el.	B	VL	x No. elements	
11	1x1	130	**95**	115	2,5
12	2x1	155	**120**	140	3,0
13	3x1	180	**145**	165	3,4
14	4x1	205	**170**	190	3,9
15	5x1	235	**200**	220	4,7
16	6x1	265	**230**	250	5,1
17	7x1	295	**260**	280	5,6
18	8x1	335	**300**	320	6,0
19	9x1	360	**320**	340	6,9
24	4x2	410	**375**	190x2	7,8
25	5x2	470	**435**	220x2	9,4
26	6x2	530	**495**	250x2	10,2
27	7x2	590	**555**	280x2	11,2
28	8x2	670	**635**	320x2	12,0
29	9x2	720	**680**	340x2	13,8
36	6x3	795	**760**	250x3	15,3
37	7x3	885	**850**	280x3	16,8
38	8x3	1005	**970**	320x3	18,0
39	9x3	1080	**1040**	340x3	20,7

Tab. RCW/TCW

DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

level gauges
WITH GLASS TUBE

Level gauges with a glass tube are an inexpensive but valid option for checking the level of non-hazardous or non-reactive fluids in unpressurised tanks.

An external metal protection of the glass tube is recommended.

Available configurations:

Borosilicate glass tube. Diameter: 16 mm; thickness: 2.5 mm.

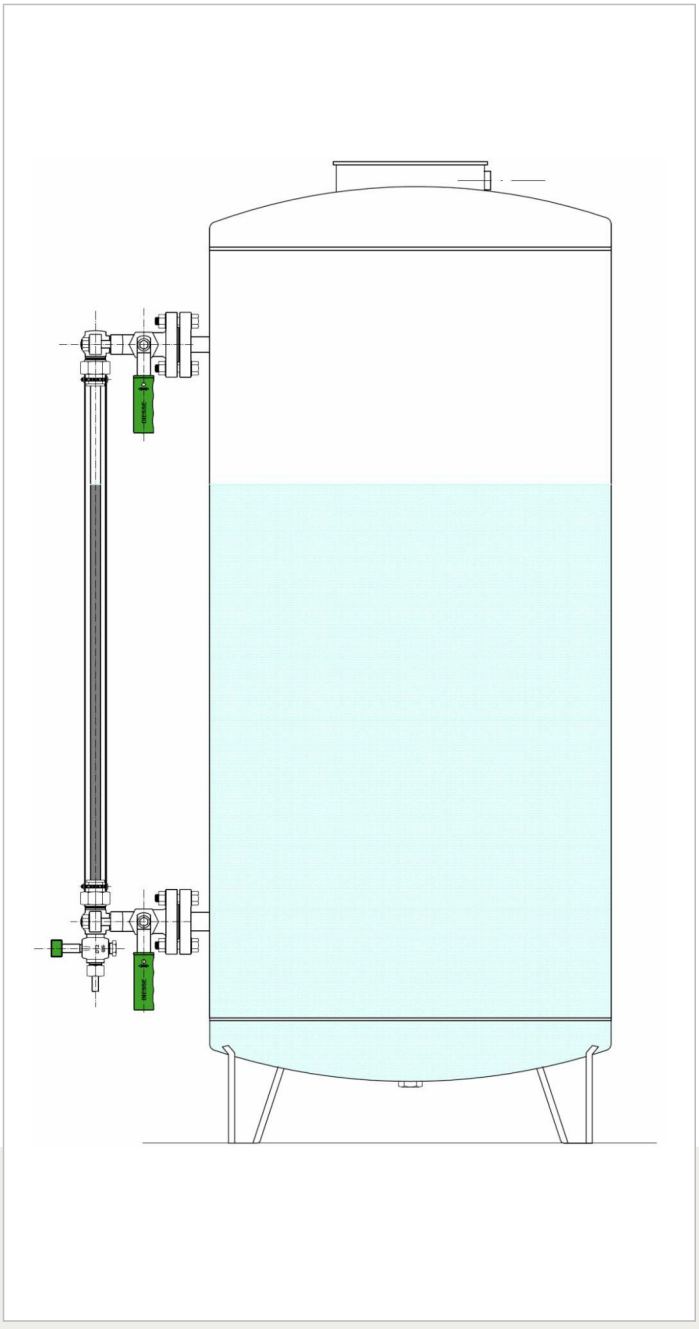
Centre-to-centre distance with a single tube: 3000 mm.
Visible length (without protection):
centre-to-centre distance - 95 mm.
Visible length (with protection):
centre-to-centre distance - 135 mm.
Spare glass tube: centre-to-centre distance - 30 mm.
Spare protection: centre-to-centre distance - 100 mm.

In the event of greater centre-to-centre distances, additional pipes can be connected up via middle terminals for glass tube

Operating limits / Conditions:
Process:
Max. pressure: 5 bar @ 38°C (the max. pressure also depends on the length and temperature)

Max. temperature: 120°C

The product is NOT suitable for use in the following instances:
- if it is likely to be exposed to vibrations (glass tube will break)
- if the installation is situated by a walkway (possibility of blows/impact)
- if exposed to steam (shortens glass tube life)



Materials / Specifications

Transparent tube: grade 3.3 borosilicate glass
Glass protection (optional): AISI 304 stainless steel
Wetted parts:
- standard: galvanized ASTM A105 or A105 LF2 carbon steel, ASTM A182 F316L stainless steel
- additional options: on request
Non-wetted parts:
- standard: galvanized carbon steel, AISI 316/316L stainless steel
- additional options: on request
Gaskets: (see page 1.72)
Cocks:
- standard: graphite/copper (ASTM A105), graphite/AISI 316 (A105 LF2 and ASTM A182 F316L)
- additional options: PTFE; other extras on request
Sealing gasket:
- standard: EPDM
- additional options: graphite or PTFE; other extras on request
Shut-off: (see page 1.49)
- standard: upper valve and lower valve (side/side)
- additional options: on request
Drain: (see page 1.50)
- standard: threaded valve
- additional options: on request
Vent: (see page 1.50)
- standard: blind
- additional options: threaded with plug; other extras on request

Tank connections:
Flanged:
- UNI standard: PN40 DN15 / DN20 / DN25
- ANSI standard: #150 DN ½" / ¾" / 1"
- additional options: on request
Threaded:
- BSP (GAS) standard: ½"-M / ¾"-M
- NPT standard: ½"-M / ¾"-M
Weld-on: from ½" to 1" BW or SW
Option: further connections type or direct connections to the process without shut-off cocks (see page 1.49 for more details)

Shut-off cocks, drain cock and vent cock:
- Cylindrical plug cocks

Spares:
Our spare parts are interchangeable with those of major international manufacturers.
For the full range of complete sets, turn to the spares section on page 1.69.

Accessories:
Stainless steel "U" protection, lower and/or upper safety ball, pusher for safety ball, calibrated, non-frosting extension, minimum level arrow, continuous reading, cocks handles lock (see page 1.55 for details)

Certifications (on request):
--

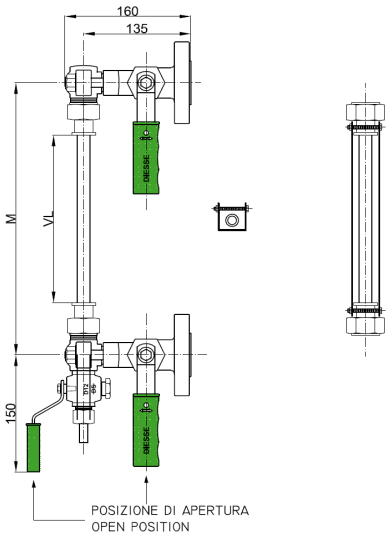
For this kind of gauge the pressure test can be performed only on the cocks (on request),glass tubes cannot be tested due to their fragility. All DIESSE components are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.

DS DIESSE FLUID CONTROL

LEVEL GAUGE WITH GLASS TUBE AND "U" SHAPED PROTECTION

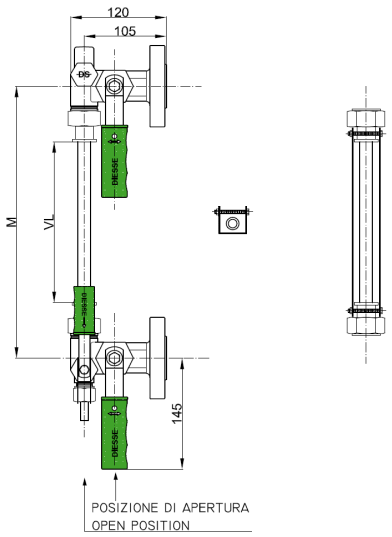
DS LG - TVR GR18 / MT18

Code: DS LG-TVR…-… /16/RF-GR18/…/…-M…-CS/CS



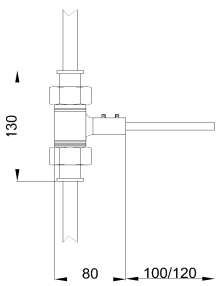
TVR

Code: DS LG TVR…-… /16/RF-MT18/…/…-M…-CS/CS



TVRMT

MIDDLE TERMINAL
CODE: MJT



Technical data

Service conditions
Max Pressure: 5 barg (Max. pressure also function of the length and the temperature)
Max Temperature: 120°C

View
Standard: adjustable on 360° in the installation phase (Rotating the "U" shaped protection)

Distance (Centre-to-centre)
On request
Max with a single glass tube 3.000 mm
Option: on request are available distances over 3.000 mm using the middle terminals to connect more glass tubes

Visible length [VL]

With shut-off cocks DS GR18

- **With the "U" shaped protection**
  Visible length [VL] = Centre-to-centre distance [M] - 135 mm (With extended stuffing box covers to fasten the "U" shaped protection)
- **Without protection**
  Visible length [VL] = Centre-to-centre distance [M] - 95 mm (With standard stuffing box covers)

With shut-off cocks DS MT18

- **With the "U" shaped protection**
  Visible length [VL] = Centre-to-centre distance [M] - 145 mm (With extended stuffing box covers to fasten the "U" shaped protection)
- **Without protection**
  Visible length [VL] = Centre-to-centre distance [M] - 105 mm (With standard stuffing box cover)

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Cocks body:	ASTM A105	AISI 316L	AISI 316L
Cocks trim:	AISI 303	AISI 316	AISI 316
Non-wetted parts:	Carbon steel galvanized	Carbon steel galvanized	AISI 316

Glass tube
Standard: borosilicate glass 3.3, Ø 16 mm, thickness 2,5 mm

Protection for glass tube (Option always recommended)
Standard: metal sheet "U" shaped in stainless steel AISI 304

Gaskets

Standard:	Cocks: graphite/copper	Glass sealing: EPDM
Option:	Cocks: graphite/AISI 316	Glass sealing: graphite
	Cocks: PTFE/AISI316	Glass sealing: PTFE

Shut-off cocks
DS GR18: cylindrical plug type - Straight type - Quick 90° closing
DS MT18: cylindrical plug type with monolithic body - Straight type - Quick 90° closing
Handling: lever operated with PP handle (Standard: right; Option: left)

Process connections:
Standard flanges: UNI PN16/40 DN15-20-25 ANSI #150/RF DN ½" - ¾" - 1"
Standard threaded unions: BSP-M ½" - ¾" NPT-M ½" - ¾"
Options: further connections types or direct connections to the process without cocks (See page 1.49)
Vent: Standard: blind Option: see page 1.50
Drain: Standard: cock DS D12 threaded ½" Option: see page 1.50

Accessories
See from page 1.55

Weights
Cocks DS GR18: Kg. 7,4 approx. (With flanges UNI DN20 PN40)
Cocks DS MT18: Kg. 6,1 approx. (With flanges UNI DN20 PN40)

Spare parts
Glass tube: Length = Centre-to-centre distance [M] - 30 mm
Protection: Length = Centre-to-centre distance [M] - 100 mm
Cocks DS GR18: see from page 1.72
(Drawing with components and parts list see page 1.66)
Cocks DS MT18: see from page 1.64
(Drawing with components and parts list see page 1.67)

Utilization

The product is NOT suitable for use in the following instances:
- ❑ if it is likely to be exposed to vibrations (Glass tube will break)
- ❑ if the installation is situated by a walkway (Possibility of blows/impact)
- ❑ if exposed to steam (Shortens glass tube life)

DS DIESSE
FLUID CONTROL

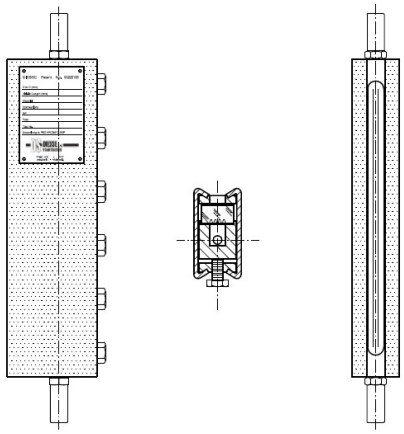
Product origin
Design & Manufacturing
ITALY

housings and valves

HOUSING WITH GRINDED PIPES

HOUSING DS RBR

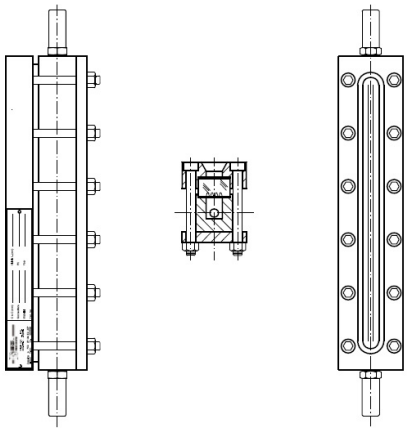
See technical data at page 1.7



Code: DS RBR ...
(See details at page 1.61)

HOUSING DS RCR

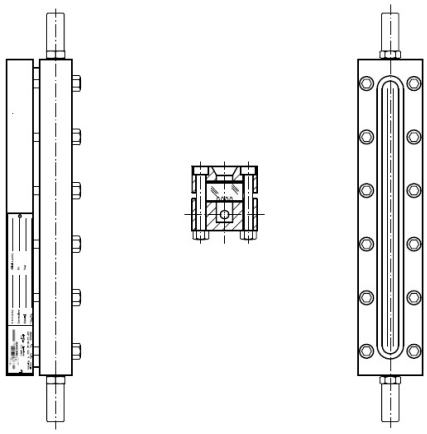
See technical data at page 1.9



Code: DS RCR ...
(See details at page 1.62)

HOUSING DS RDR

See technical data at page 1.10

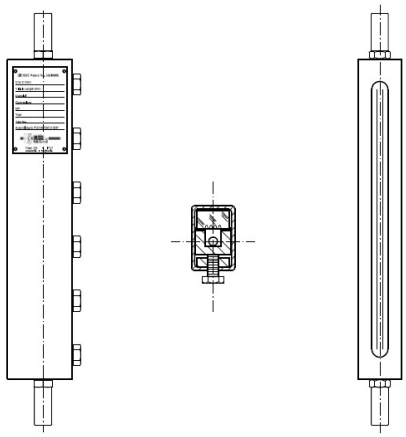


Code: DS RDR ...
(See details at page 1.62)

HOUSING WITH GRINDED PIPES

HOUSING DS RTR

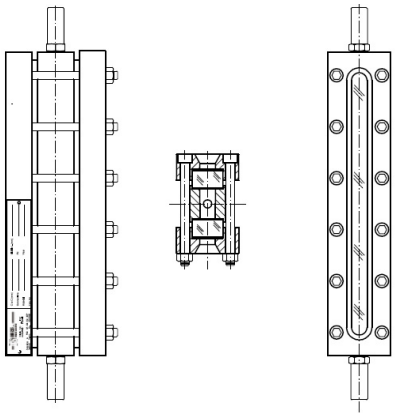
See technical data at page 1.17



Code: DS RTR ...
(See details at page 1.61)

HOUSING DS TCR

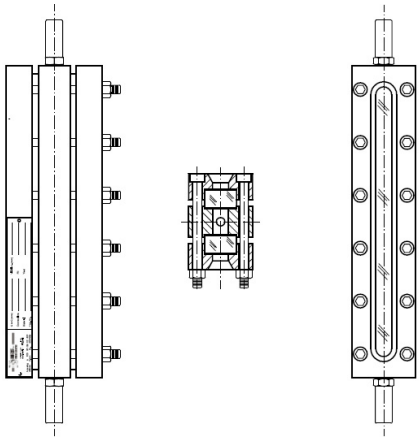
See technical data at page 1.25



Code: DS TCR ...
(See details at page 1.64)

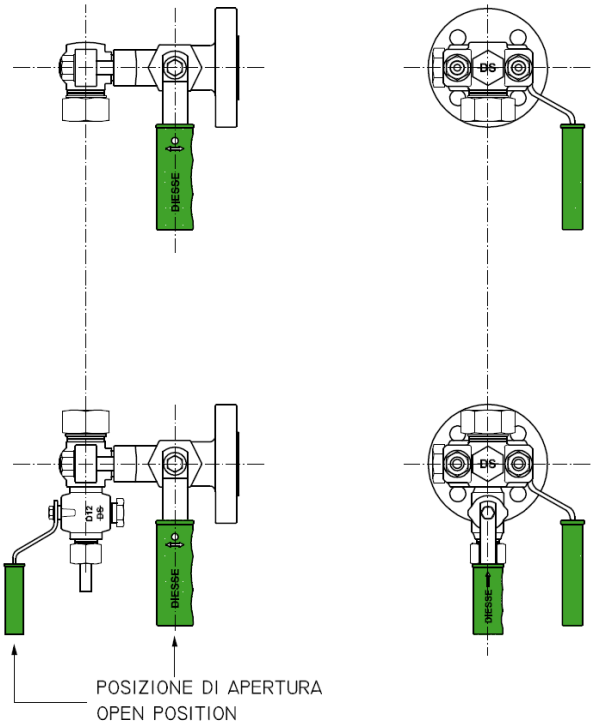
HOUSING DS TMR

See technical data at page 1.27



Code: DS TMR ...
(See details at page 1.64)

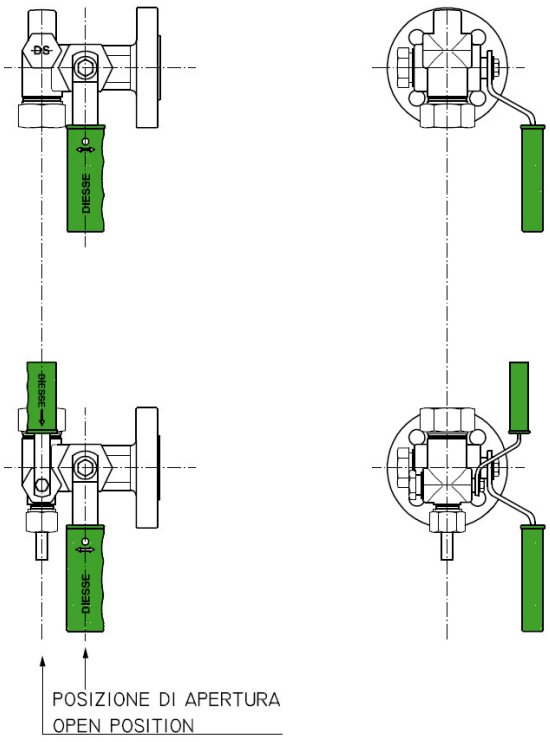
SHUT-OFF COCKS DS GR18



Code: DS GR18 …
(See details at page 1.66)

Executions on request:
LH [Left handling]
AHPD [In service vertical handles]

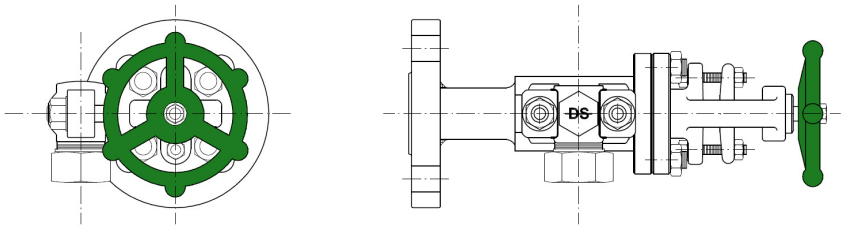
SHUT-OFF COCKS DS MT18



Code: DS MT18 …
(See details at page 1.67)

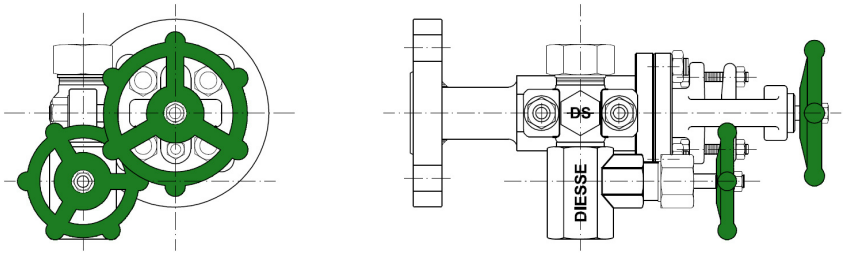
Execution on request:
AHPD [In service vertical handles]

SHUT-OFF VALVES DS SHV

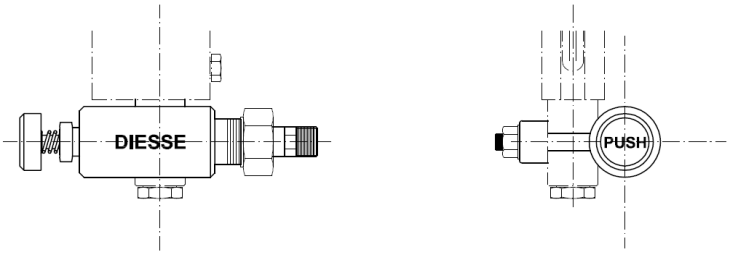


Code: DS SHV …
(See details at page 1.68)

Execution on request:
LSB [Valves on the left side]

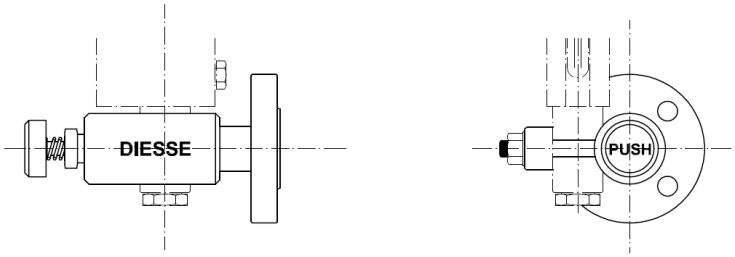


PUSH BUTTON VALVES DS NPV (SELF-CLOSING VALVES)



Code: DS NPV …
(See details at page 1.67)

Execution on request:
LSB [Valves on the left side]



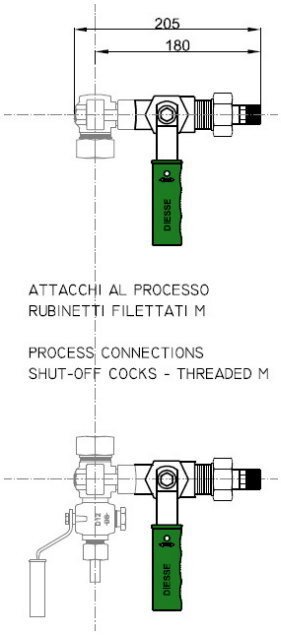
DS DIESSE
FLUID CONTROL

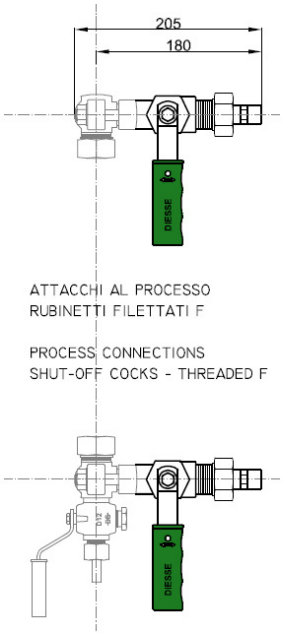
Product origin
Design & Manufacturing
ITALY

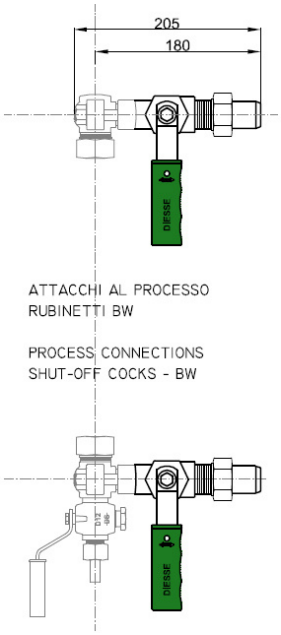
process connections

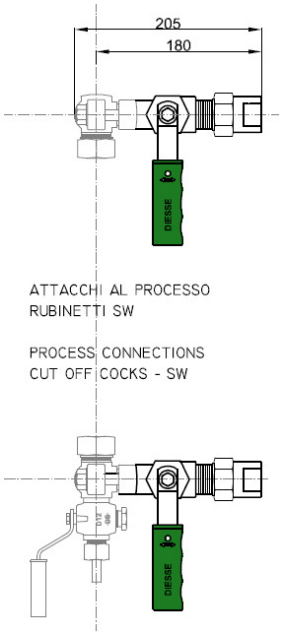
PROCESS CONNECTIONS - GLASS LEVEL GAUGES WITH GRINDED PIPES AND CYLINDRICAL PLUG COCKS

SHUT-OFF COCKS DS GR18

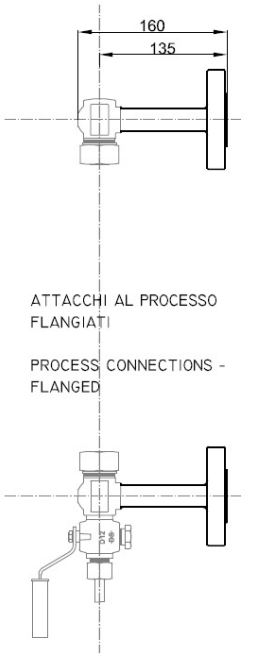


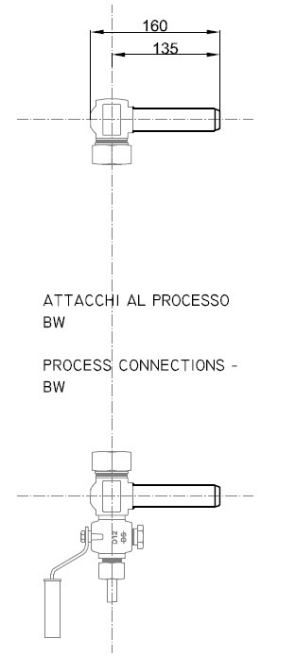


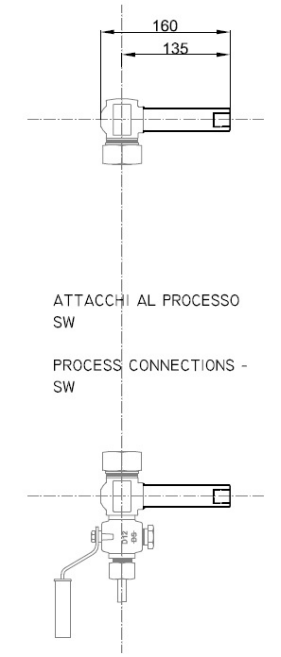


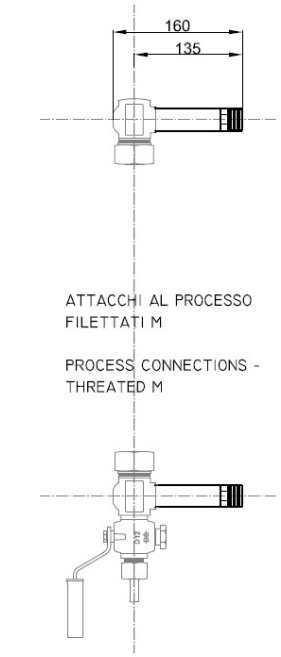


WITHOUT SHUT-OFF COCKS







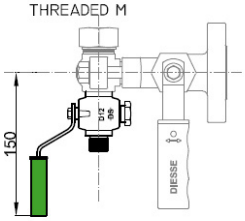


DRAIN AND VENT - GLASS LEVEL GAUGES WITH GRINDED PIPES AND CYLINDRICAL PLUG COCKS

DRAIN for shut-off cocks DS GR18

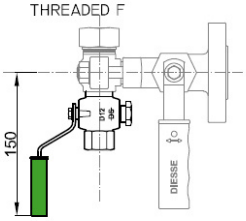
RUBINETTO DI SCARICO FILETTATO M

DRAIN COCK - THREADED M



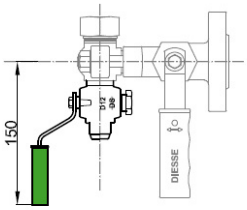
RUBINETTO DI SCARICO FILETTATO F

DRAIN COCK - THREADED F



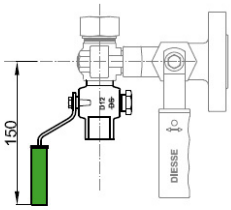
RUBINETTO DI SCARICO BW

DRAIN COCK - BW



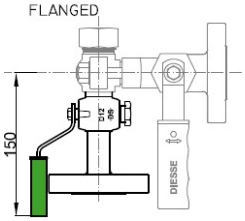
RUBINETTO DI SCARICO SW

DRAIN COCK - SW



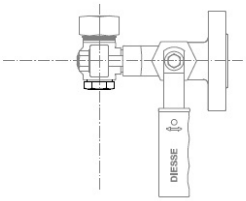
RUBINETTO DI SCARICO FLANGIATO

DRAIN COCK - FLANGED



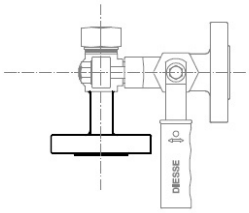
SCARICO CON TAPPO

DRAIN - PLUGGED



SCARICO FLANGIATO

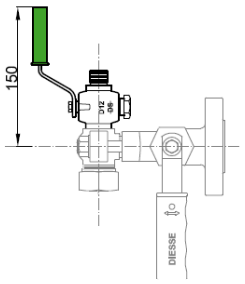
DRAIN - FLANGED



VENT for shut-off cocks DS GR18

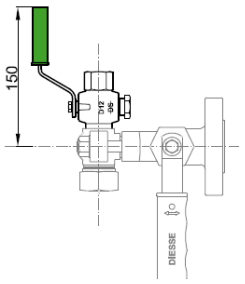
RUBINETTO DI SFIATO FILETTATO M

VENT COCK - THREADED M



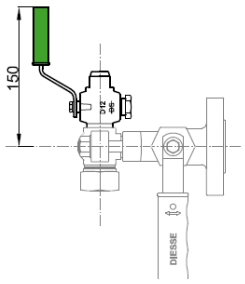
RUBINETTO DI SFIATO FILETTATO F

VENT COCK - THREADED F



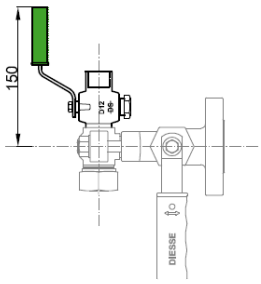
RUBINETTO DI SFIATO BW

VENT COCK - BW



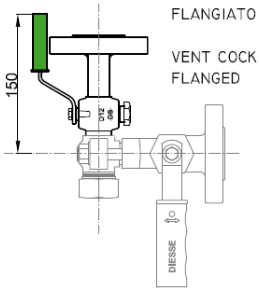
RUBINETTO DI SFIATO SW

VENT COCK - SW



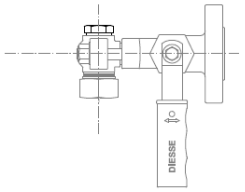
RUBINETTO DI SFIATO FLANGIATO

VENT COCK - FLANGED



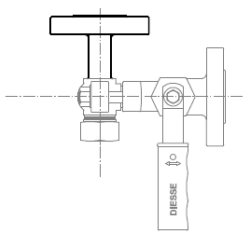
SFIATO CON TAPPO

VENT - PLUGGED

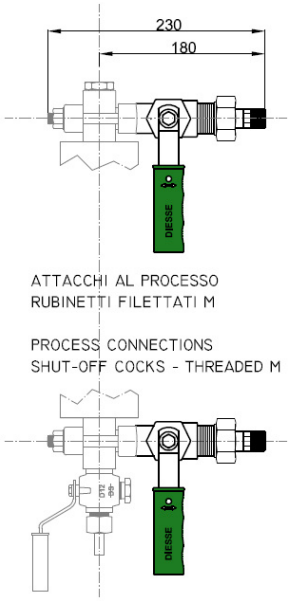


SFIATO FLANGIATO

VENT - FLANGED

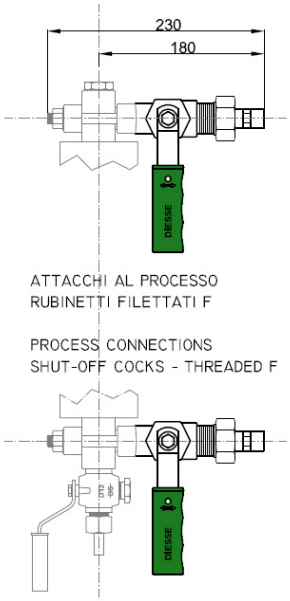


SHUT-OFF COCKS DS GR18



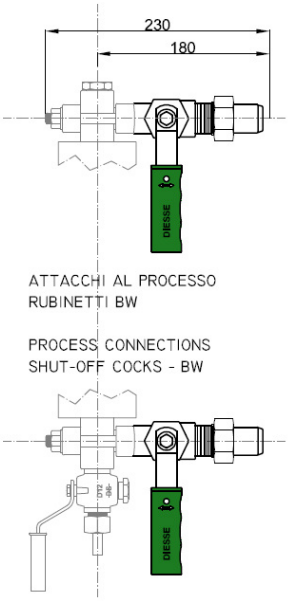
ATTACCHI AL PROCESSO
RUBINETTI FILETTATI M

PROCESS CONNECTIONS
SHUT-OFF COCKS - THREADED M



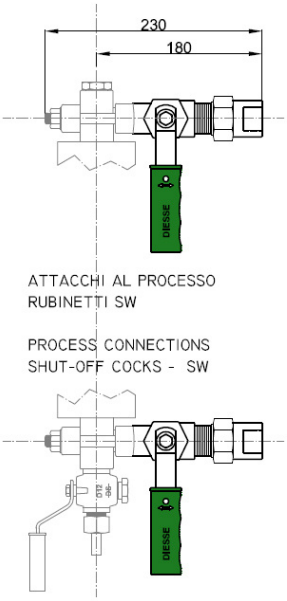
ATTACCHI AL PROCESSO
RUBINETTI FILETTATI F

PROCESS CONNECTIONS
SHUT-OFF COCKS - THREADED F



ATTACCHI AL PROCESSO
RUBINETTI BW

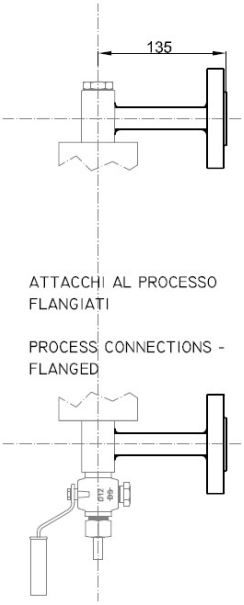
PROCESS CONNECTIONS
SHUT-OFF COCKS - BW



ATTACCHI AL PROCESSO
RUBINETTI SW

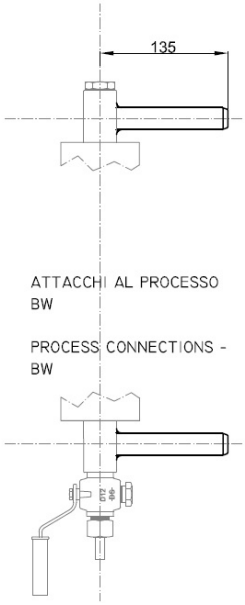
PROCESS CONNECTIONS
SHUT-OFF COCKS - SW

WITHOUT SHUT-OFF COCKS



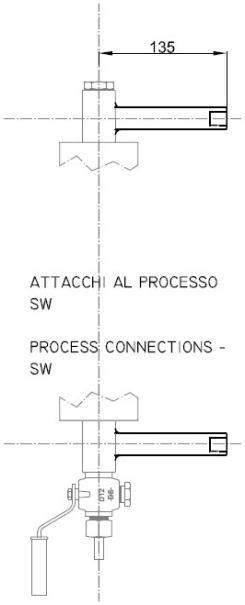
ATTACCHI AL PROCESSO
FLANGIATI

PROCESS CONNECTIONS -
FLANGED



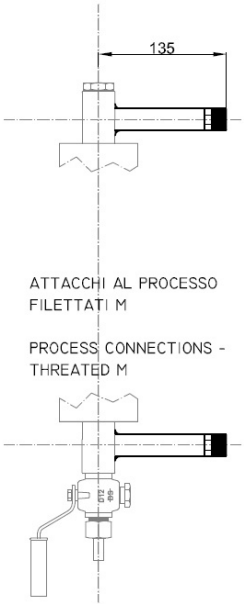
ATTACCHI AL PROCESSO
BW

PROCESS CONNECTIONS -
BW



ATTACCHI AL PROCESSO
SW

PROCESS CONNECTIONS -
SW



ATTACCHI AL PROCESSO
FILETTATI M

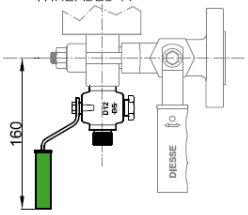
PROCESS CONNECTIONS -
THREATED M

DRAIN AND VENT - GLASS LEVEL GAUGES WITH FIXED DISTANCE BETWEEN CENTERS AND CYLINDRICAL PLUG COCKS

DRAIN for shut-off cocks DS GR18

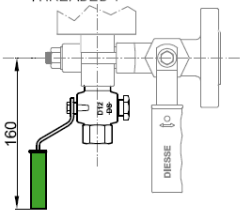
RUBINETTO DI SCARICO FILETTATO M

DRAIN COCK - THREADED M



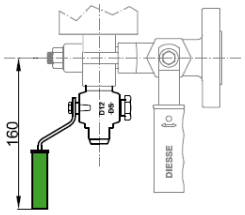
RUBINETTO DI SCARICO FILETTATO F

DRAIN COCK - THREADED F



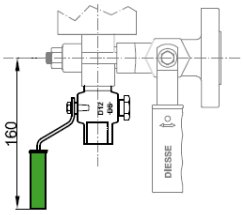
RUBINETTO DI SCARICO BW

DRAIN COCK - BW



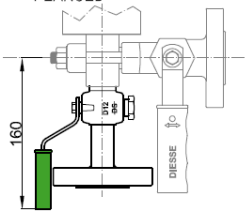
RUBINETTO DI SCARICO SW

DRAIN COCK - SW



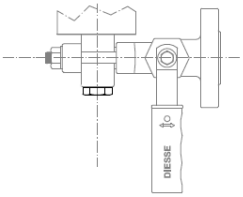
RUBINETTO DI SCARICO FLANGIATO

DRAIN COCK - FLANGED



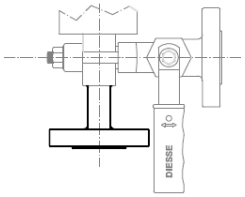
SCARICO CON TAPPO

DRAIN - PLUGGED



SCARICO FLANGIATO

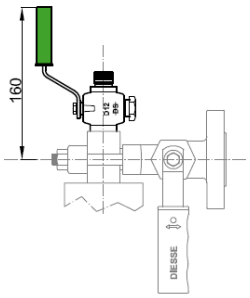
DRAIN - FLANGED



VENT for shut-off cocks DS GR18

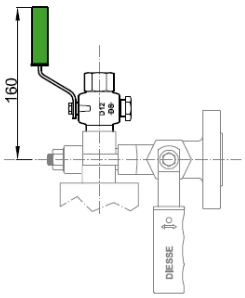
RUBINETTO DI SFIATO FILETTATO M

VENT COCK - THREADED M



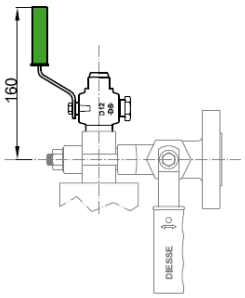
RUBINETTO DI SFIATO FILETTATO F

VENT COCK - THREADED F



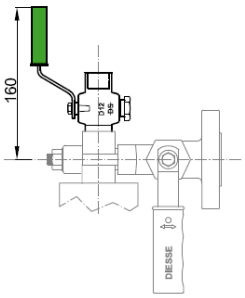
RUBINETTO DI SFIATO BW

VENT COCK - BW



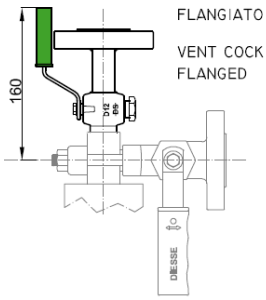
RUBINETTO DI SFIATO SW

VENT COCK - SW



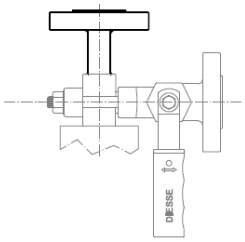
RUBINETTO DI SFIATO FLANGIATO

VENT COCK - FLANGED

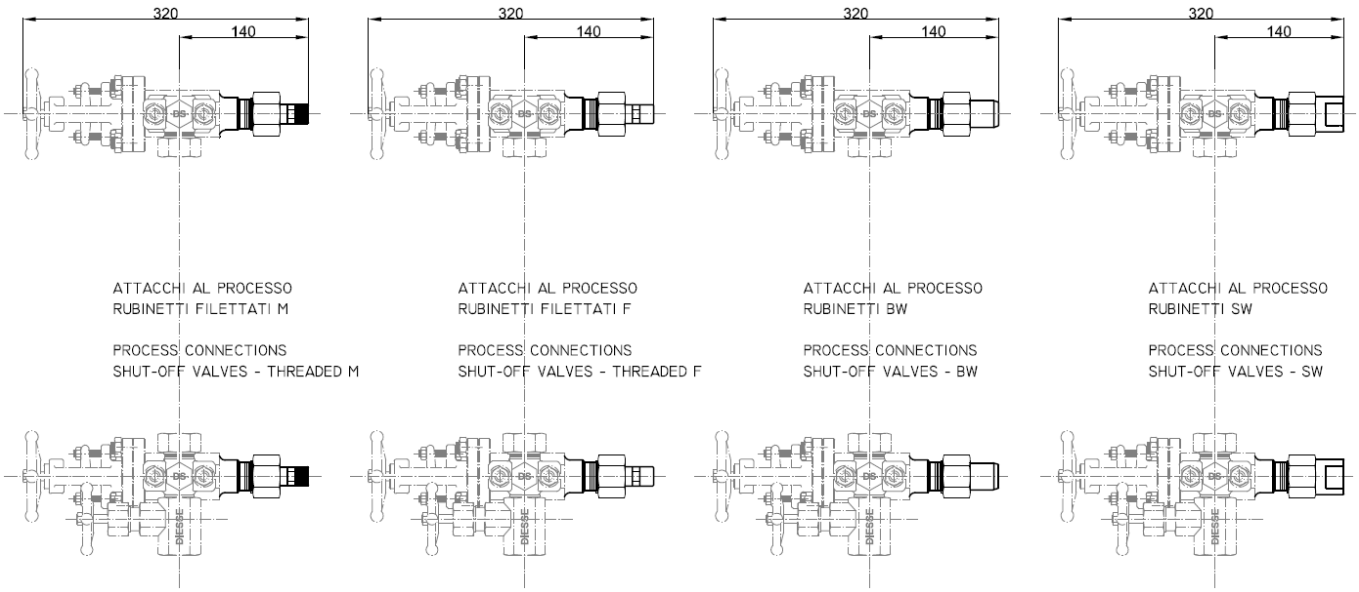


SFIATO FLANGIATO

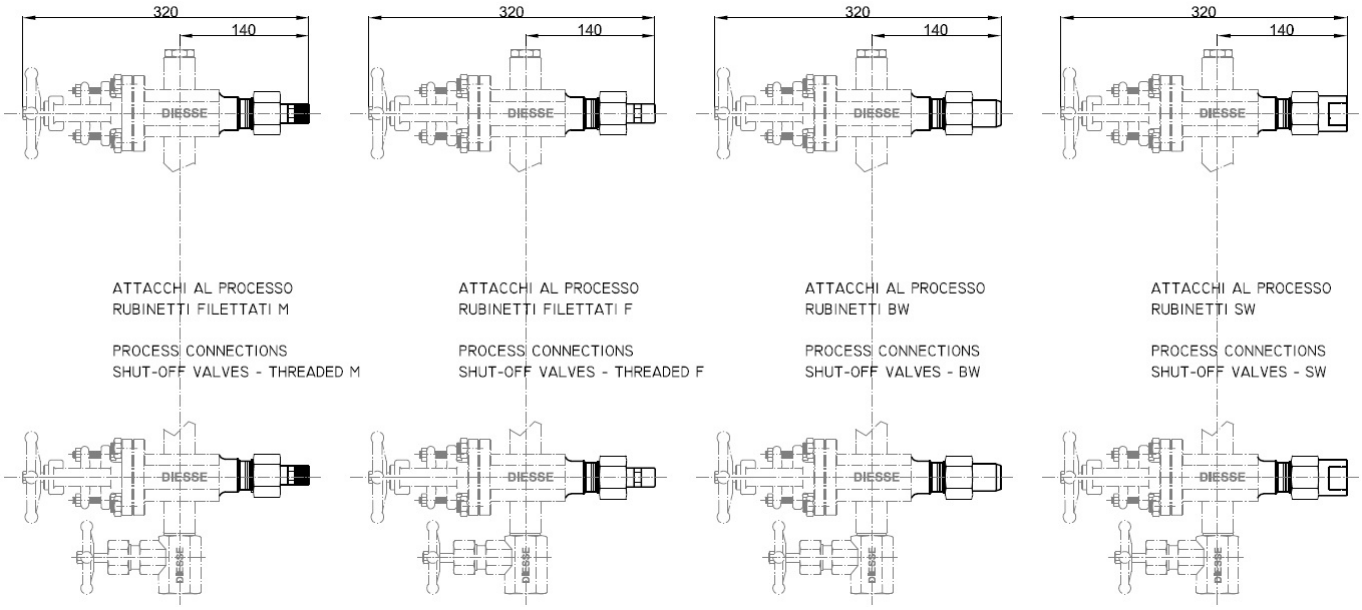
VENT - FLANGED



SHUT-OFF VALVES DS SHV for housings with grinded pipes



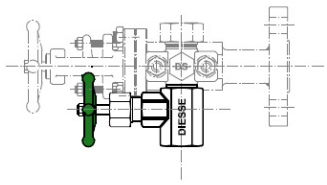
SHUT-OFF VALVES DS SHV for housings with fixed distance between centers



DRAIN for shut-off valves DS SHV for housings with grinded pipes

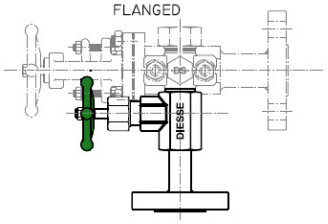
RUBINETTO DI SCARICO SW

DRAIN COCK - SW



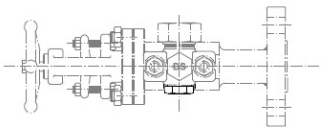
RUBINETTO DI SCARICO FLANGIATO

DRAIN COCK - FLANGED



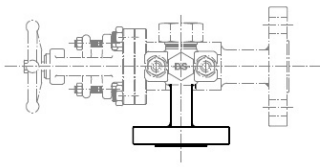
SCARICO CON TAPPO

DRAIN - PLUGGED



SCARICO FLANGIATO

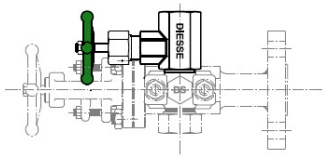
DRAIN - FLANGED



VENT for shut-off valves DS SHV for housings with grinded pipes

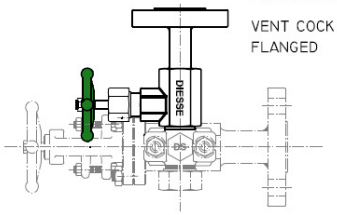
RUBINETTO DI SFIATO FILETTATO F O SW

VENT COCK - THREATED F OR - SW



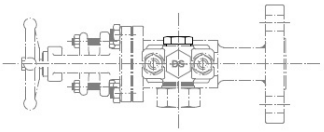
RUBINETTO DI SFIATO FLANGIATO

VENT COCK - FLANGED



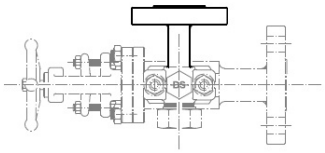
SFIATO CON TAPPO

VENT - PLUGGED



SFIATO FLANGIATO

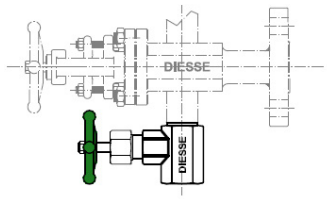
VENT - FLANGED



DRAIN for shut-off valves DS SHV for housings with fixed distance between centers

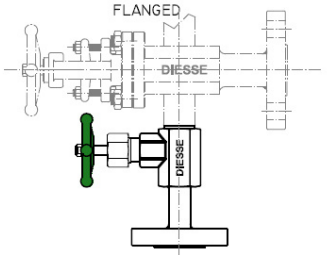
RUBINETTO DI SCARICO SW

DRAIN COCK - SW



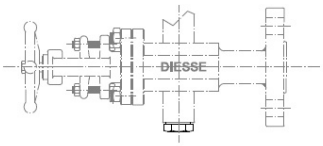
RUBINETTO DI SCARICO FLANGIATO

DRAIN COCK - FLANGED



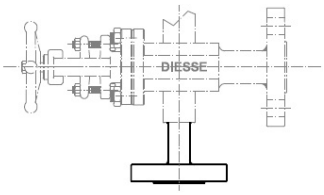
SCARICO CON TAPPO

DRAIN - PLUGGED



SCARICO FLANGIATO

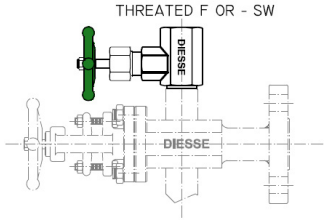
DRAIN - FLANGED



VENT for shut-off valves DS SHV for housings with fixed distance between centers

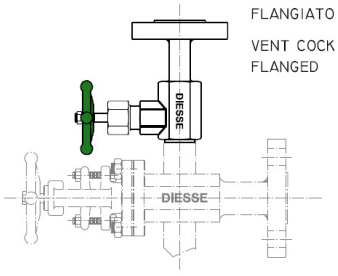
RUBINETTO DI SFIATO FILETTATO F O SW

VENT COCK - THREATED F OR - SW



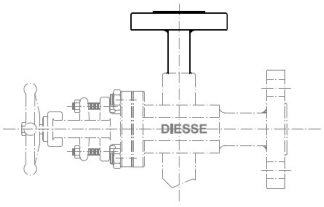
RUBINETTO DI SFIATO FLANGIATO

VENT COCK - FLANGED



SFIATO FLANGIATO

VENT - FLANGED



DS DIESSE
FLUID CONTROL

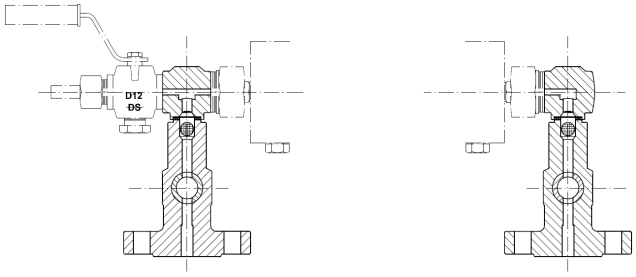
Product origin
Design & Manufacturing
ITALY

accessories for glass level gauges

SAFETY BALL

The DIESSE level gauges can be equipped with a safety ball lower and/or upper (in stainless steel 316) positioned inside the valves, which stops the fluid flow in case glass breakage occurs. The breakage is anyway improbable if the operations are carried out in the proper way.

Shut-off cocks DS GR 18

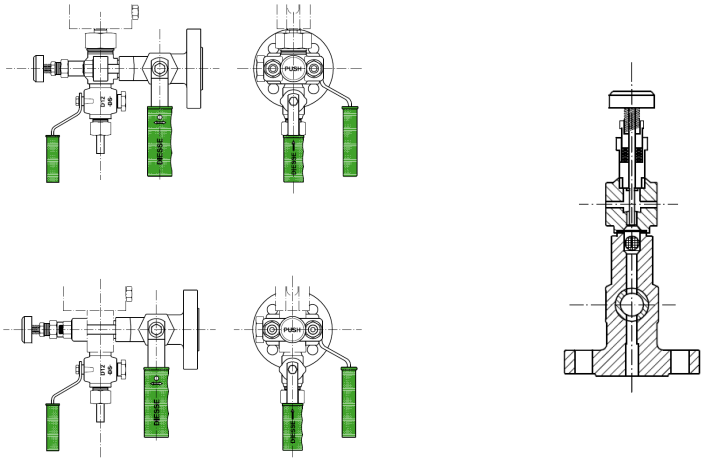


Code:
LC [Safety ball for lower shut-off cock]
UC [Safety ball for upper shut-off cock]

Shut-off valves DS SHV
The shut-off valves DS SHV are always equipped with safety balls.

PUSHER for safety ball

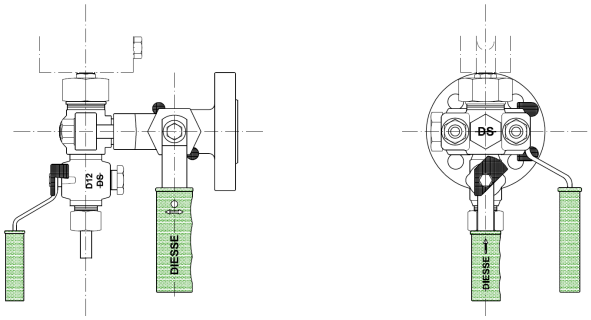
Shut-off cocks DS GR 18
To re-position the safety balls and enable the normal flow of the fluid, on request it's available a pusher in stainless steel.



Code:
LPH [Pusher for lower shut-off cock]
UPH [Pusher for upper shut-off cock]

Shut-off valves DS SHV
The pusher is not necessary for shut-off valves DS SHV because, when closing, the extension of the stem provides by itself for the repositioning of the safety ball.

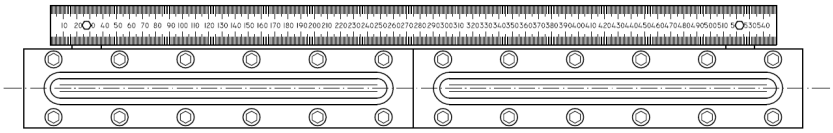
COCKS HANDLES LOCK (on request also lockable)



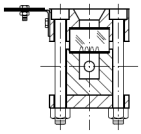
Code:
SMHD [Cocks handles lock (all)]
LU-SMHD [Shut-off handles lock]
D-SMHD [Drain handle lock]
V-SMHD [Vent handle lock]

CALIBRATED SCALE

The calibrated scale (millimeters) is in stainless steel, the values are engraved and black coloured.
The standard indication correspond to the centre-to-centre distance of the level gauge.
On request other materials and graduations can be supplied.

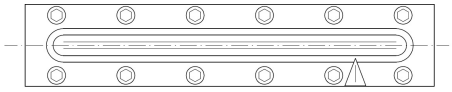


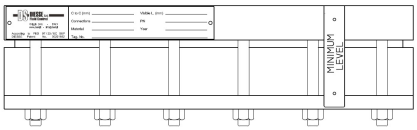
Code: VSG



MINIMUM LEVEL ARROW

To mark the minimum level of the fluid which must be maintained inside the tank, a minimum level arrow in stainless steel can be fixed on the level gauge. On request to enable its regulation along the full visible length it is possible to fix the arrow on a small rail.

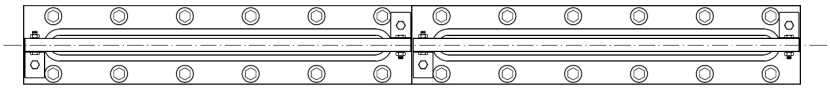


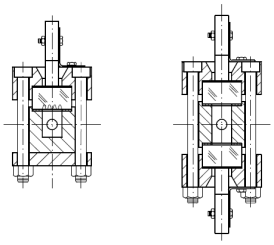


Code: MLA

NON-FROSTING EXTENSION

On request an acrylic transparent resin slab can be supplied to be positioned on the level gauge glass (both for reflex and transparent one) to avoid the frost formation on the external surface of the glass to facilitate the fluid level reading.
The non-frosting extension is recommended when the fluid reach a temperature < 0°C.

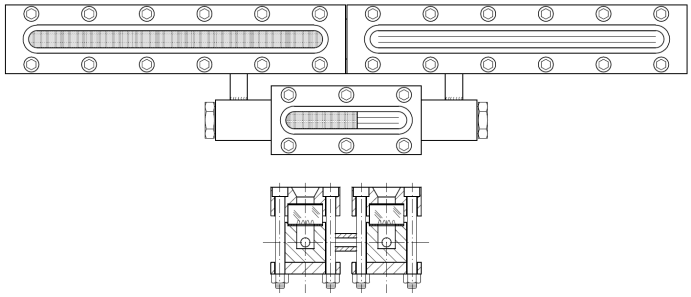




Code: NFE

CONTINUOUS READING

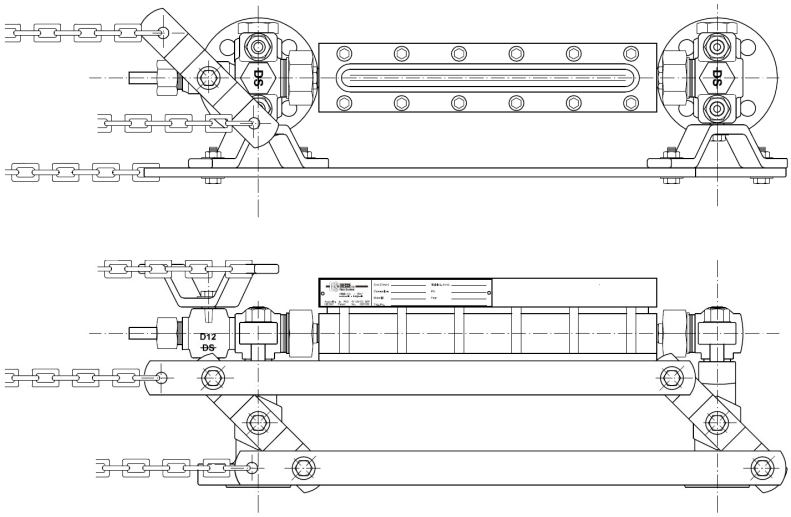
The execution of a multiple level gauge involves a discontinuity in reading due to short dark area as a result of the two elements joint.
If a continuous reading of the fluid level is necessary, a special type can be supplied.



Code: CR

REMOTE CONTROL

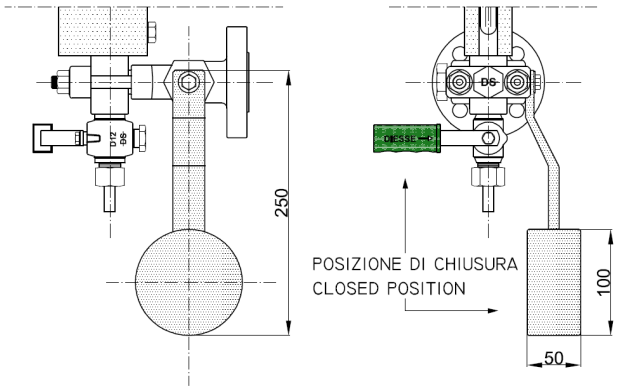
In case of level gauge installed in a high position which does not enable an easy shut-off cocks opening/closure, the handles can be equipped with a remote control device. Cable or chains are not supplied by the manufacturer.



Code: ELC

WEIGHT CLOSING for handle (SELF-CLOSING DEVICE)

This device is supplied to ensure that the shut-off cocks remain closed even in case of the operator absence.



Code:
LFC [Weight closing for lower handle]
UFC [Weight closing for upper handle]

ILLUMINATION LAMP (For transparent level gauges only)

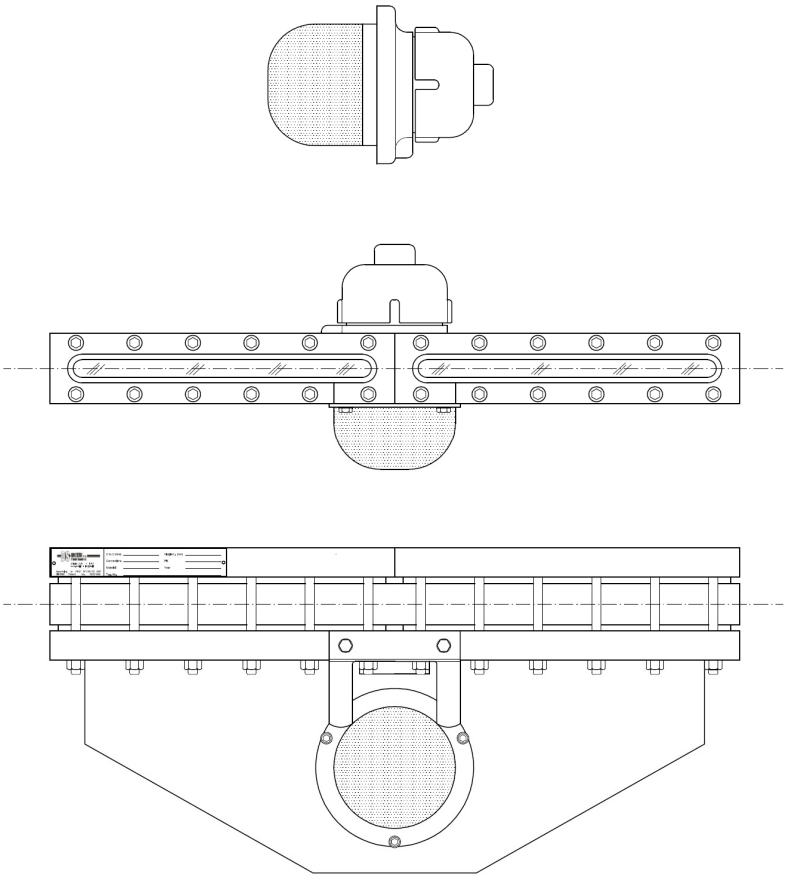
The visibility of the transparent level gauges can be improved by the installation of an illumination lamp positioned on the back side of the instrument. The lamp light is directed at the level gauge by a borosilicate or plexiglas diffuser.

Materials:

Body and cover:	aluminium with epoxy paint Option in stainless steel AISI 316
Transparent globe:	thermoresistant and impact resistant glass
Support for glass level gauge:	carbon steel galvanized Option in stainless steel AISI 316
Lamp:	LED lamp 10 W E27 for supply voltage 230 VAC, 50/60 Hz Option with LED lamp E27 24V DC

Technical data:

Supply voltage	12-24 V AC/DC	125 V AC	230 V AC
Rated current	90-130 mA	15 mA	20 mA
Working temperature	- 20°C + 60°C	- 20°C + 60°C	- 20°C + 60°C
Frequency	--	50 / 60 Hz	50 / 60 Hz
Average power consumption	2 W	1,6 W	4,5 W
Lamp power	6J	6J	6J
Service	Continuous	Continuous	Continuous
Cable entry	3/4" NPT-F	3/4" NPT-F	3/4" NPT-F
ATEX approval	INERIS 01 ATEX 0068X	INERIS 01 ATEX 0068X	INERIS 01 ATEX 0068X



Code: EVA50

ILLUMINATION LAMP with LED driver (For transparent level gauges only)

The visibility of the transparent level gauges can be improved by the installation of an illumination lamp positioned on the back side of the instrument.
All external components are made of stainless steel which provides excellent corrosion resistance.
The LED driver is completely encapsulated with epoxy resin, thus offering the highest IP protection and can be used in environments with high humidity.
The illumination lamp can be supplied with illumination lengths from 250 mm to 2500 mm at 50 mm intervals.

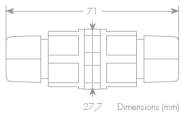
Code: LLSS

Voltage: 110-240 VAC
Effect: Max 12W
Available colors: white, yellow, red, green and blue
Operating temperature: -30°C to +60°C
Operation: > 50000 hours
Material: stainless steel
IP rating: IP 67

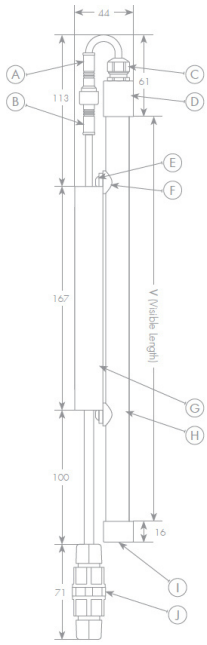
LED driver specifications

Output	DC Voltage Range	12 V
	Current accuracy	±0,5 V
	Rated current	1,25 A
	Rated power	15 W
Input	Voltage range	100-265 V
	Frequency range	47…63 Hz
	Power factor	PF ≥ 0,90 230V
	Full load efficiency	83
	Leakage current	< 0,25 mA / 220 VAC
Protection	Short circuit	Recovers automatically after fault condition is removed
	Over voltage	≤ 280 VAC
	Over temperature	100°C ± 10°C shut down o/p voltage, re-power on to recover
Environment	Working temperature	-30….+60°C
	Working humidity	20…95% RH, non condensing
	Temperature coefficient	± 0,03%/°C (0…50°C)
	Vibration	10…500 Hz, 5G 12 min
Safety	Safety standards	EN61347-2-13.IP67
	Withstand voltage	I/P-O/P: 3,75 KVAC
	Isolation resistance	I/P-O/P: 100 MOhm
	EMC emission	Compliance to EN55015, EN6100-3-2
	EMC immunity	Compliance to EN61000-4-2,3,4,5,6,8,11 EN61547

Inline connector specifications



Rated current: 20 A
IP rating: IP 67
Material: nylon
Fire-retardant rating: UL94V-01/16 20 A
Insulation resistance: > 2000 Ohm
Max cable OD: 9,5 mm



Materials

Position	Description	Material
A	Male cable connector - IP68	Nylon, general purpose
B	Female cable connector - IP68	Nylon, general purpose
C	Cable gland M12 x 1,5	Nickel-plated brass
D	Connection sleeve	Stainless steel 316
E	M4 x 5 mm screw	Stainless steel 316
F	Saddle washer	LDPE
G	12 V LED driver	Aluminium, 1060
H	LED tube casing	Stainless steel 304
I	LED tube cap	Stainless steel 316
J	Inline cable connector - IP67	Nylon, general purpose

ACCESSORIES FOR GLASS LEVEL GAUGES

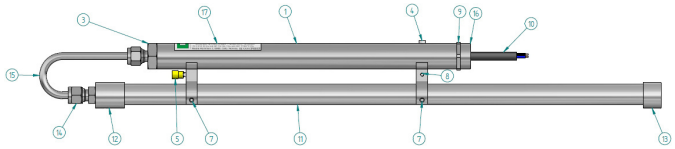
ILLUMINATION LAMP with LED driver (For transparent level gauges only) with Ex protection

The visibility of the transparent level gauges can be improved by the installation of an illumination lamp positioned on the back side of the instrument.
All external components are made of stainless steel which provides excellent corrosion resistance.
The LED driver is completely encapsulated with epoxy resin, thus offering the highest IP protection and can be used in environments with explosive atmosphere.
The illumination lamp can be supplied with illumination lengths from 250 mm to 2500 mm at 50 mm intervals.

Code: LLSP Ex

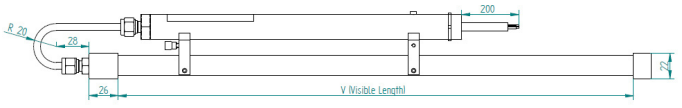
Voltage: 110-240 VAC
Effect: Max 5W
Available colors: white, yellow, red, green and blue
Operating temperature: -30°C to +50°C
Operation: > 50000 hours
Material: stainless steel S.S. 316
Ex protection:
- With flying lead: Ex mb IIC T4 Gb / Ex mb IIIC T135°C Db
- With optional Ex e JB: Ex eb mb IIC T4 Gb / Ex mb tb IIIC T135°C Db

IP rating: IP 66/67

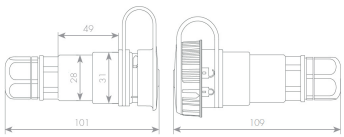


Materials

Position	Description	Material
1	LED driver tube	Stainless steel 316
3	M20 Compression fitting	Stainless steel 316
4	M3 x 6 mm screw	Stainless steel 316
5	Ring cable lug (4 to 6 mm^2)	Tin-plated brass, with nylon insulation
7	M4 x 5 mm set screw	Stainless steel 316
8	M3 tooth washer	Stainless steel 304
9	LED driver adapter	Stainless steel 316
10	Radox 125 cable 3x0,75 mm^2	--
11	Led tube casing	Stainless steel 316
12	LED tube adapter	Stainless steel 316
13	LED tube cap	Stainless steel 316
14	M12 compression fitting	Stainless steel 316
15	Connection tube 6 mm	Stainless steel 316
16	LED driver adaptor cap	Stainless steel 316

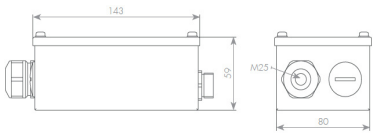


Inline connector specifications



Ex protection: Ex e IIC T6 Gb Ex tb IIIC T72°C Db
Rated current: 10 A
IP rating: IP 66/67
Material: plastic

Terminal box



Ex protection: Ex eb IIC T4 Gb Ex tb IIIC T135°C Db
IP rating: IP 66
Material: S.S. 316
Gasket: silicone rubber

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

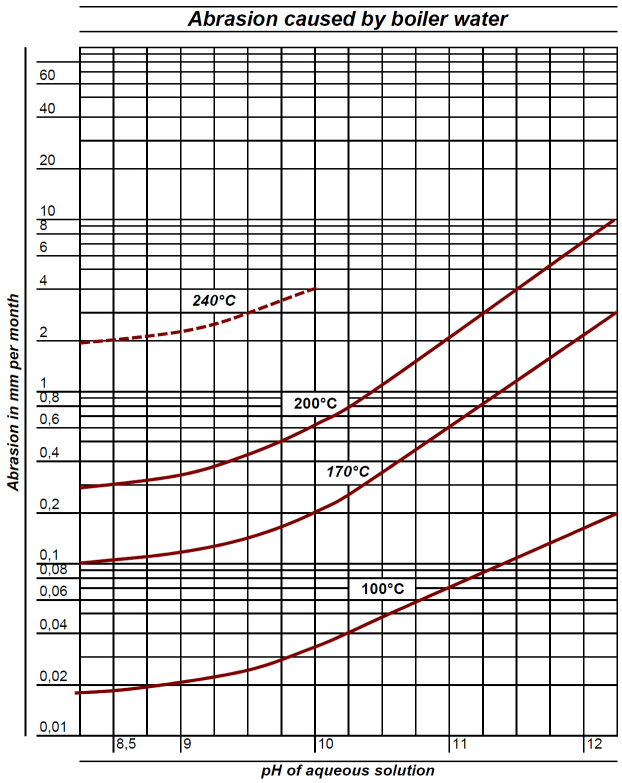
use with saturated steam

USE WITH SATURATED STEAM

The maximum operating conditions of the equipment must be carefully evaluated in case of use with saturated steam in order to decide the best type which avoids often maintenance operations/parts replacements.
Suggestions to be taken into consideration:

- **To avoid often tightening of the union nut for grinded pipes** (Pos. 15 of page 1.66)
  Should the operating conditions not exceed a maximum pressure value of 15 bar (197°C) it is recommended the purchase of a level gauge with grinded pipes even if they can be considered suitable for applications up to 20 bar (211°C).
  Higher values would dry the graphite sealing gasket of the upper pipe in a very short time and cause leakages which could damage the whole level gauge and the lower cock.

- **To avoid often glasses replacement**
  it is recommended to:
  - Utilize reflex level gauges with fixed distance execution if operating conditions do not exceed the value of 20 bar (211°C) taking into consideration the pH value of the water. Higher values would cause the glass breakage in a short time (See diagram "Abrasion caused by boiler water" regarding glass life).
  - Utilize transparent level gauges type DS LG - TCF or type DS LG - TMF with **mica shield** protection for operation conditions not exceeding the value of 32 bar (236°C).
  - Utilize transparent level gauges type DS LG - TPF with **mica shield** protection for operating conditions not exceeding the value of 50 bar (263°C).
  - Utilize transparent level gauges type DS LG - TXF with **mica shield** protection for operating conditions not exceeding the value of 70 bar (280°C).



Glass loss - shown here for unprotected borosilicate glasses.
The glasses life depends not only on the temperature but also on the water pH (higher pH values shorten glass life).

DURING THE FIRST HOURS OF INSTRUMENT USE and particularly in case of use with high temperature steam, should any leakage occur, gently tighten the stuffing box (Pos. 12 and 13 of page 1.66), the fitting screws and the nuts (for housing tightening starting in the middle and then work outwards on alternate sides).
The grease contained in the graphite gaskets is dissolved by the high temperatures, the gaskets dry and loose the sealing capacity that can be restored by this easy operation.

ANYWAY BOLTS AND NUTS CONDITIONS CHECKS SHOULD BE CARRIED OUT REGULARLY.

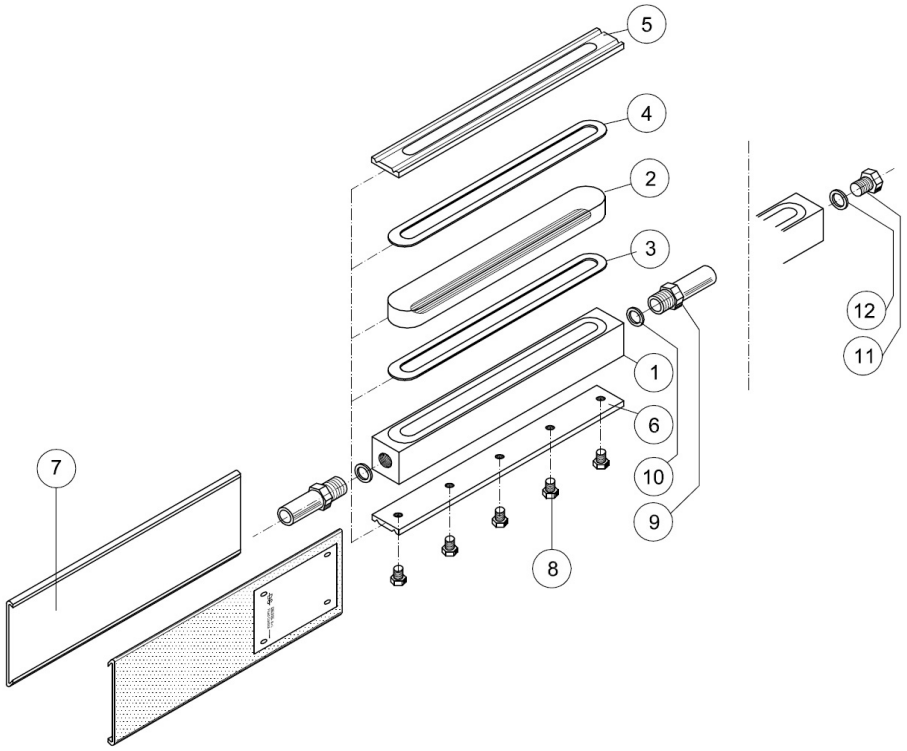
DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

components for glass level gauges

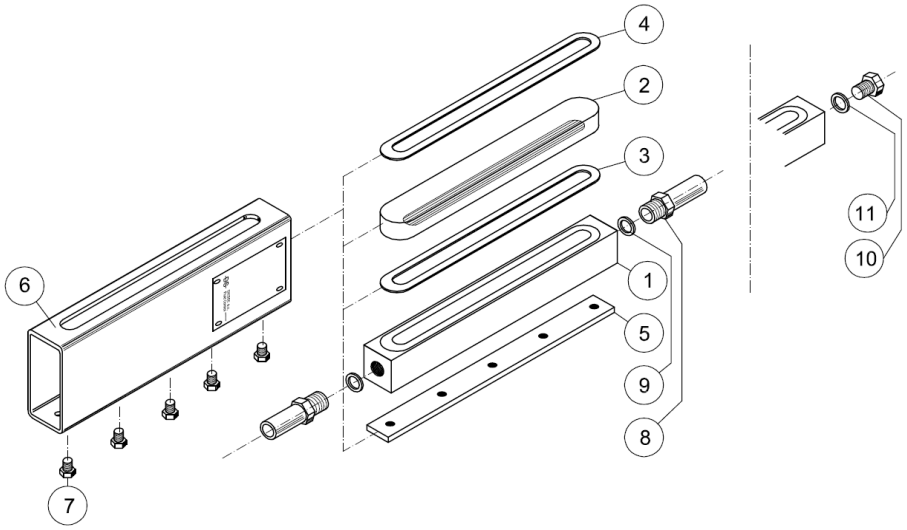
REFLEX HOUSINGS - COMPONENTS

HOUSING DS RBR / DS RBF



1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Frontal cover
6. Fixing plate
7. Lateral covers
8. Bolts
9. Grinded pipes (LG RBR)
10. Metal gaskets (LG RBR)
11. Vent plug (LG RBF)
12. Metal gasket (LG RBF)

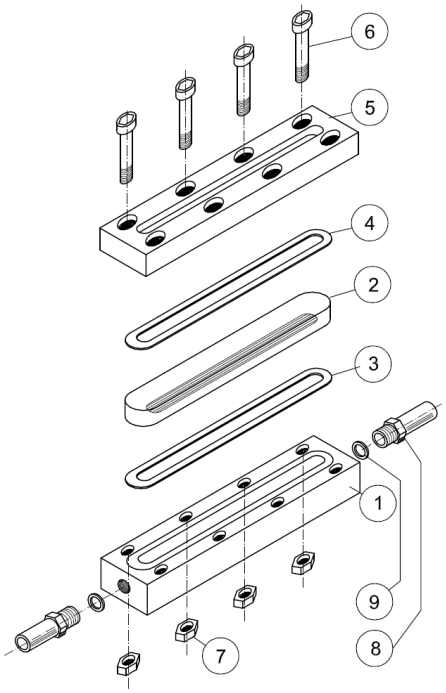
HOUSING DS RTR / DS RTF



1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Fixing plate
6. Tubular cover
7. Bolts
8. Grinded pipes (LG RTR)
9. Metal gaskets (LG RTR)
10. Vent plug (LG RTF)
11. Metal gasket (LG RTF)

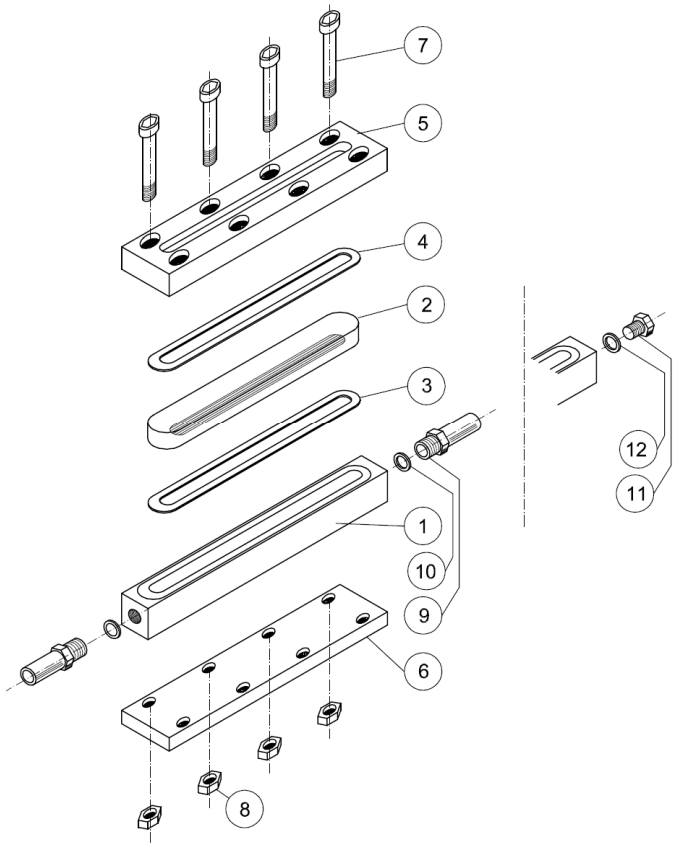
REFLEX HOUSINGS - COMPONENTS

HOUSING DS RDR



1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Cover
6. Bolts
7. Nuts
8. Grinded pipes
9. Metal gaskets

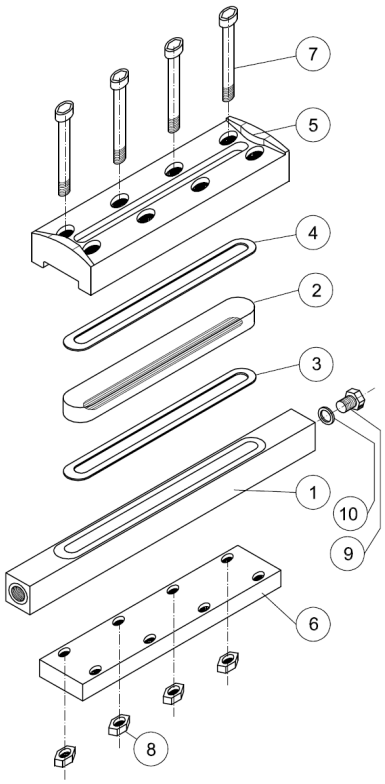
HOUSING DS RCR / DS RCF



1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Cover
6. Fixing plate
7. Bolts
8. Nuts
9. Grinded pipes (LG RCR)
10. Metal gaskets (LG RCR)
11. Vent plug (LG RCF)
12. Metal gasket (LG RCF)

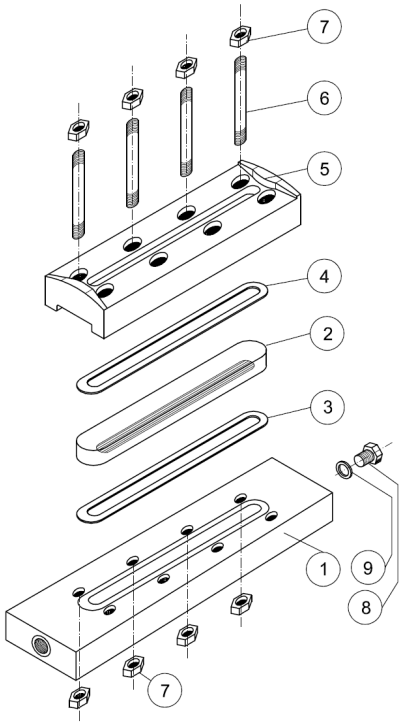
REFLEX HOUSINGS - COMPONENTS

HOUSING DS RPF



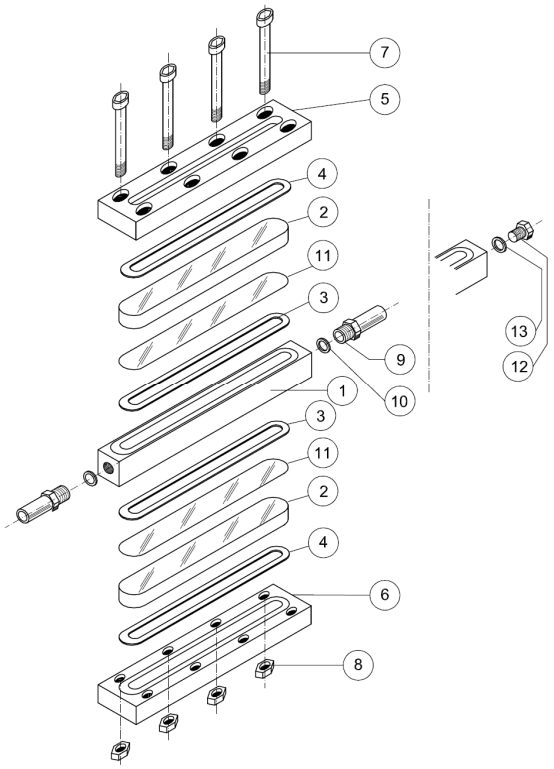
1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Cover
6. Fixing plate
7. Bolts
8. Nuts
9. Vent plug
10. Metal gasket

HOUSING DS RXF / DS REF



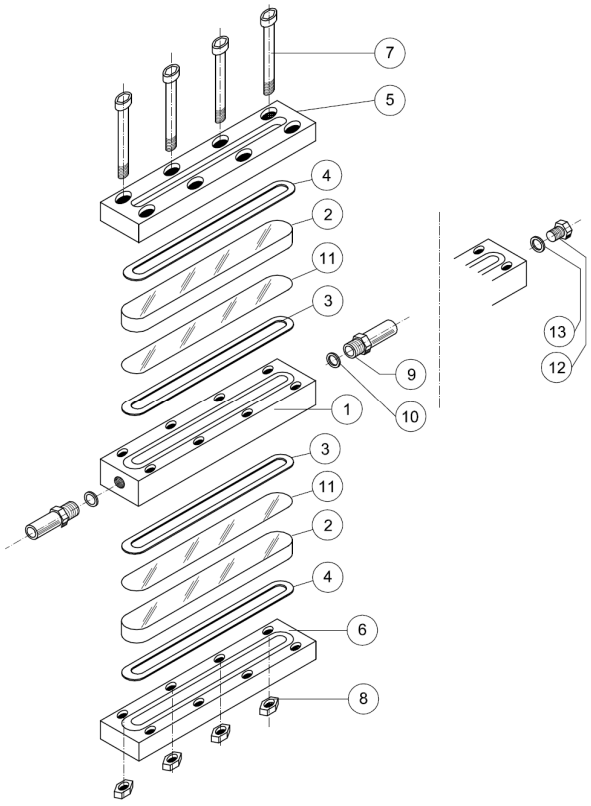
1. Level gauge body
2. Reflex glass DIN 7081
3. Sealing gasket
4. Cushion gasket
5. Cover
6. Bolts
7. Nuts
8. Vent plug
9. Metal gasket

HOUSING TYPE DS TCR / DS TCF



1. Level gauge body
2. Transparent glass DIN 7081
3. Sealing gaskets
4. Cushion gaskets
5. Frontal cover
6. Back cover
7. Bolts
8. Nuts
9. Grinded pipes (LG TCR)
10. Metal gaskets (LG TCR)
11. Mica shields (optional)
12. Vent plug (LG TCF)
13. Metal gasket (LG TCF)

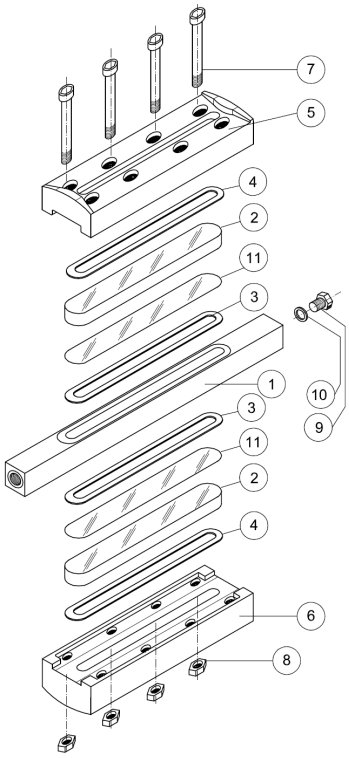
HOUSING DS TMR / DS TMF



1. Level gauge body
2. Transparent glass DIN 7081
3. Sealing gaskets
4. Cushion gaskets
5. Frontal cover
6. Back cover
7. Bolts
8. Nuts
9. Grinded pipes (LG TMR)
10. Metal gaskets (LG TMR)
11. Mica shields (optional)
12. Vent plug (LG TMF)
13. Metal gasket (LG TMF)

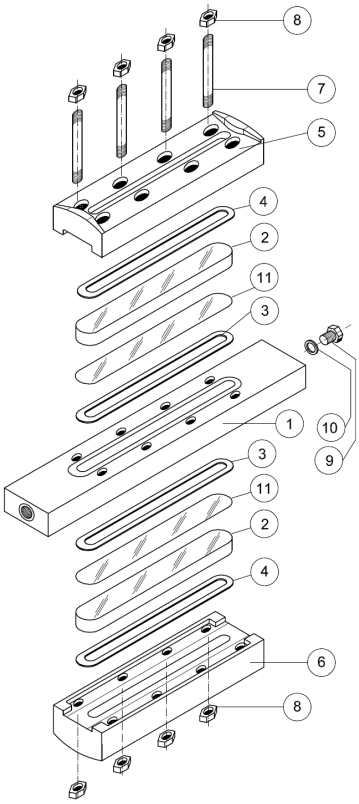
TRANSPARENT HOUSINGS - COMPONENTS

HOUSING DS TPF



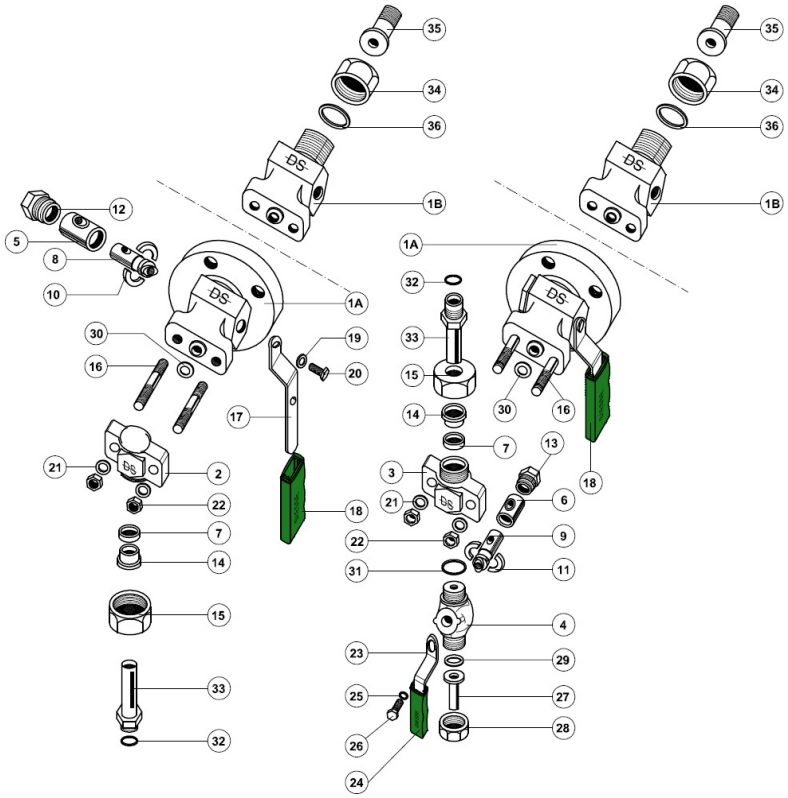
1. Level gauge body
2. Transparent glass DIN 7081
3. Sealing gaskets
4. Cushion gaskets
5. Frontal cover
6. Back cover
7. Bolts
8. Nuts
9. Vent plug
10. Metal gasket
11. Mica shields (optional)

HOUSING DS TXF / DS TEF

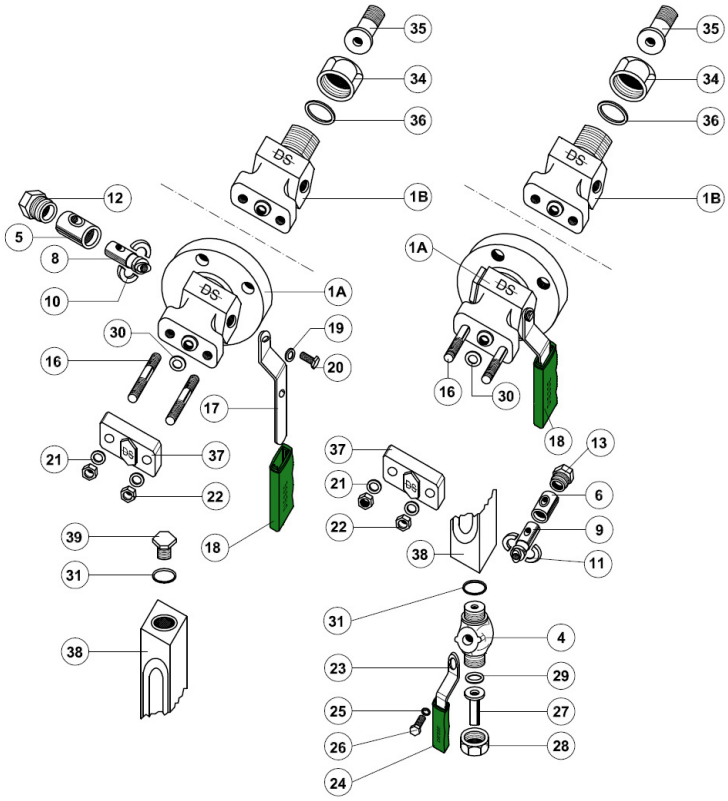


1. Level gauge body
2. Transparent glass DIN 7081
3. Sealing gaskets
4. Cushion gaskets
5. Frontal cover
6. Back cover
7. Bolts
8. Nuts
9. Vent plug
10. Metal gasket
11. Mica shields (optional)

SHUT-OFF COCKS DS GR 18 for housings with grinded pipes

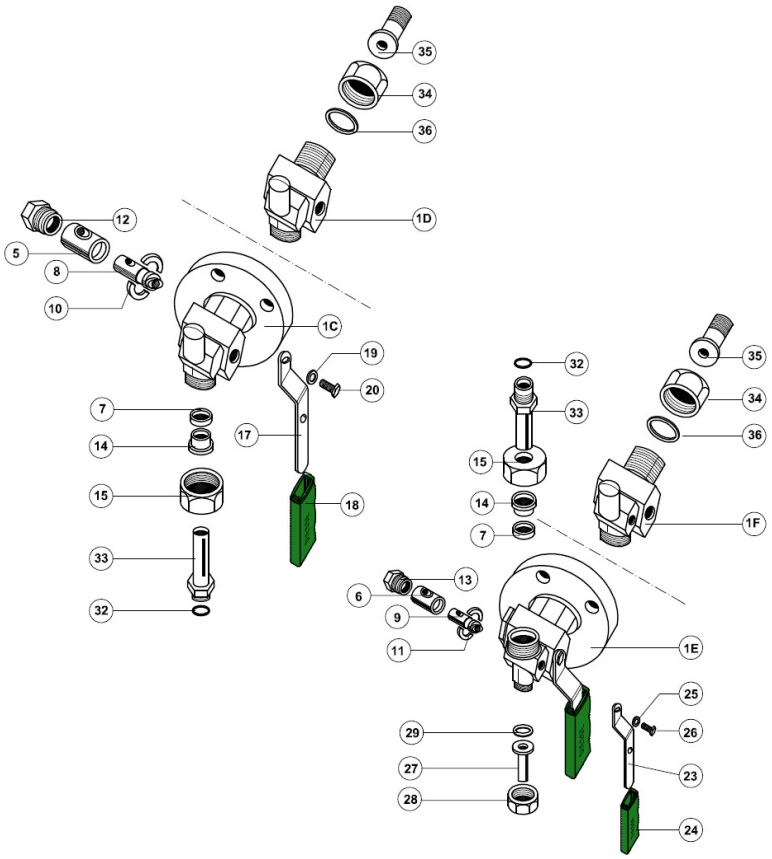


SHUT-OFF COCKS DS GR 18 for housings with fixed distance between centers



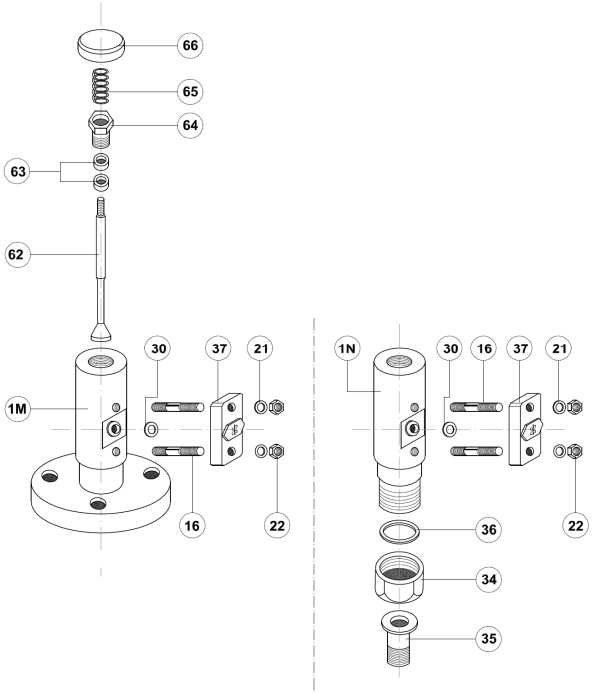
1A. Flanged shut-off cocks body
1B. Threaded shut-off cocks body
2. Upper support
3. Lower support
4. Drain cock body
5. Cases Ø 26 x 18 x 32 mm
6. Case Ø 18 x 12 x 23 mm
7. Packing rings Ø 23,5 x 16 x 10 mm
8. Cylindrical plugs Ø 18 mm
9. Cylindrical plug Ø 12 mm
10. Split rings Ø 26
11. Split ring Ø 18
12. Suffing boxes 7/8"G
13. Suffing box 1/2"G
14. Stuffing boxes Ø 26 x 17 x 11,5 mm
15. Union nuts 1"G for grinded pipes
16. Bolts
17. Handles
18. PP covers for handles
19. Washers M8
20. Bolts M8 x 12
21. Washers M12
22. Nuts M12
23. Drain handle
24. PP cover for drain handle
25. Washer M6
26. Bolt M6 x 10
27. Drain pipe
28. Union nut 1/2"G for drain pipe
29. Gasket Ø 18,3 x 9,2 x 1,5 mm
30. Gaskets Ø 23 x 14,5 x 2 mm
31. Gaskets Ø 27 x 21,5 x 1,5 mm
32. Gaskets Ø 14 x 9 x 1,5 mm
33. Grinded pipes Ø 16 mm
34. Union nuts 1"G for threaded connections
35. Threaded connections
36. Gaskets Ø 29,5 x 13 x 2 mm
37. Fixing brackets
38. Level gauge body
39. Plugs

SHUT-OFF COCKS DS MT 18 for housings with grinded pipes



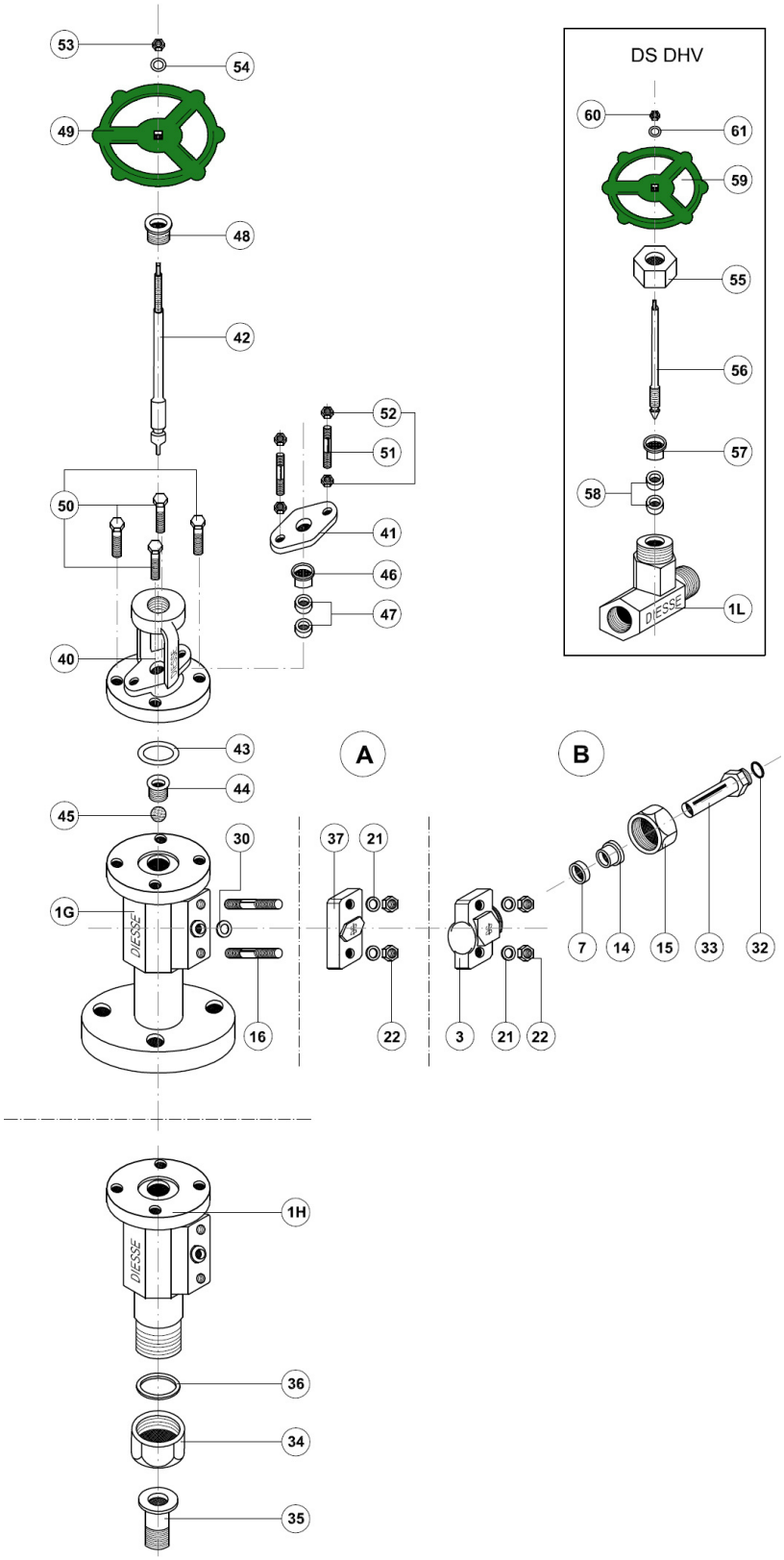
1C. Flanged upper monolithic body
1D. Threaded upper monolithic body
1E. Flanged lower monolithic body
1F. Threaded lower monolithic body
5. Cases Ø 26 x 18 x 32 mm
6. Case Ø 18 x 12 x 23 mm
7. Packing rings Ø 23,5 x 16 x 10 mm
8. Cylindrical plugs Ø 18 mm
9. Cylindrical plug Ø 12 mm
10. Split rings Ø 26
11. Split ring Ø 18
12. Stuffing boxes 7/8"G
13. Stuffing box 1/2"G
14. Stuffing boxes Ø 26 x 17 x 11,5 mm
15. Union nuts 1"G for grinded pipes
17. Handles
18. PP covers for handles
19. Washers M8
20. Bolts M8 x 12
23. Drain handle
24. PP cover for drain handle
25. Washer M6
26. Bolt M6 x 10
27. Drain pipe
28. Union nut 1/2"G for drain pipe
29. Gasket Ø 18,3 x 9,2 x 1,5 mm
32. Gaskets Ø 14 x 9 x 1,5 mm
33. Grinded pipes Ø 16 mm
34. Union nuts 1"G for threaded connections
35. Threaded connections
36. Gaskets Ø 29,5 x 13 x 2 mm

PUSH-BUTTON VALVE DS NPV



1M. Flanged shut-off valve body
1N. Threaded shut-off valve body
16. Bolts M12
21. Washers M12
22. Nuts M12
30. Gaskets Ø 23 x 14,5 x 2 mm
34. Union nuts 1"G for threaded connections
35. Threaded connections
36. Gaskets Ø 29,5 x 13 x 2 mm
37. Fixing brackets
62. Stem
63. Gaskets Ø 18,5 x 10 x 8 mm
64. Stuffing box
65. Spring
66. Button

SHUT-OFF VALVES DS SHV



1G. Flanged shut-off valves body
1H. Threaded shut-off valves body
3. Support
7. Packing rings Ø 23,5 x 16 x 10 mm
14. Stuffing boxes Ø 26 x 17 x 11,5 mm
15. Union nuts 1"G for grinded pipes
16. Bolts M12
21. Washers M12
22. Nuts M12
30. Gaskets Ø 23 x 14,5 x 2 mm
32. Gaskets Ø 14 x 9 x 1,5 mm
33. Grinded pipes Ø 16 mm
34. Union nuts 1"G for threaded connections
35. Threaded connections
36. Gaskets Ø 29,5 x 13 x 2 mm
37. Fixing brackets
40. Bonnet
41. Stuffing box bracket
42. Stem
43. Gaskets Ø 47x32x3,5 mm
44. Seat
45. Safety ball
46. Stuffing boxes Ø 22x13,5x14 mm
47. Gaskets Ø 20 x 12,7 x 9 mm
48. Bush for stem
49. Handwheel
50. Bolts M10 x 25
51. Bolts M8 x 48
52. Nuts M8
53. Nuts M8
54. Washers M8

1L. Drain and/or vent valve body DS DHV
55. Gland nut 3/4"G
56. Stem
57. Stuffing box Ø 18x13x10,5 mm
58. Gaskets Ø 18,5 x 10 x 8 mm
59. Handwheel
60. Nut M7
61. Washer M7

Connections to the housing body

A Execution with fixed distance between centers
B Execution with grinded pipes

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

spare parts for glass level gauges

SPARE PARTS FOR GLASS LEVEL GAUGES

GLASSES reflex type and transparent type

The level gauges can be supplied with two different types of glasses: reflex or transparent. Both in borosilicate, they are manufactured according to the high quality standards and grant the highest resistance to the chemical agents and thermal shock.

Standards references:

- DIN 7081
- BS 3463
- JIS B 8211
- MIL - G - 16356 D

Physical characteristics:

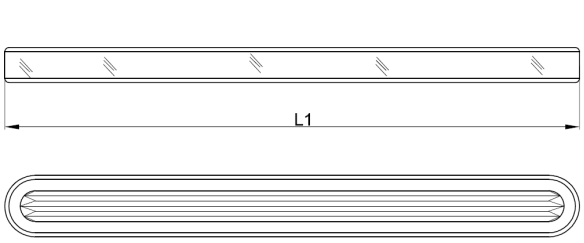
Coefficient of thermal expansion α 20°C; 300°C: 4,1 x 10^{-6}/K
Density ρ at 25°C: 2,3 g/cm^3
Young's modulus E: 67 x 10^3 N/mm^2
Poisson's ratio μ: 0,20
Refractive index nd (λ = 587,6 nm): 1,482
Abbe number v_d: 64,5
Internal transmittance at 550 nm: 98,9% at 10 mm thickness

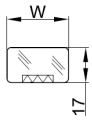
Temperature:

Thermal shock resistance ΔT: 265 K
Transformation temperature Tg: 545°C
Max. permissible temperature: 300°C
Saturated steam applications: see page 1.59

Chemical characteristic	Hydrolytic resistance	Acid resistance	Alkaline resistance
Test according to	DIN ISO 720 Class 1 (HGA1)	DIN ISO 1776	DIN ISO 695 (Identical to DIN 52322) Class A2
Max. abrasion according to DIN ISO	0,1	<100 μg Na_2O/dm^2	>75-175 mg/dm^2
Max. abrasion	0,050	<60 μg Na_2O/dm^2	>100 mg/dm^2

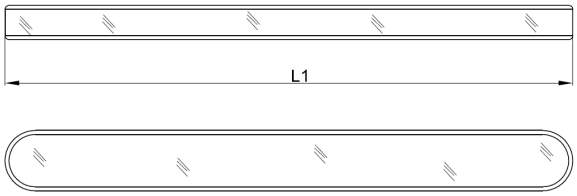
The **reflex glass** has a smooth surface (external side) and a prismatic one to be put in contact with the fluid to absorbe the light. Taking advantage of the optical laws of refraction, the fluid appears dark, while the surface in contact with the gas reflects the light appearing very clear.

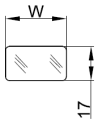




Code: BGR _ [Width: A o B] _ [Size: 1…9]

The **transparent glass** has two smooth surfaces and the reading is obtained by the different transparency between the fluids and their gas. A clearer reading can be obtained by installing an illumination lamp which is able to increase the contrast by a diffuser.





Code: BGT _ [Width: A o B] _ [Size: 1…9]

Available size

Both reflex and transparent glasses can be supplied in two different types:

- type A - width 30 mm
- type B - width 34 mm

SIZE	1	2	3	4	5	6	7	8	9
LEVEL GAUGE BODY LENGTH [mm]	130	155	180	205	235	265	295	335	360
GLASS LENGTH L1 [mm]	115	140	165	190	220	250	280	320	340
GLASS WIDTH W TYPE A [mm]	30	30	30	30	30	30	30	30	30
GLASS WIDTH W TYPE B [mm]	34	34	34	34	34	34	34	34	34
GLASS THICKNESS [mm]	17	17	17	17	17	17	17	17	17

SPARE PARTS FOR GLASS LEVEL GAUGES

The transparent glass can be protected by the corrosive action of particular fluids by a **MICA** shield or a **PCTFE** shield positioned between the glass and the fluid.

MICA SHIELDS to protect transparent glasses

The MICA shield protection is recommended in case of:
Steam with pressure > 20 bar (see below diagram) and fluids like caustic soda, citric acid….

Type of mica shield:
Transparent Ruby Muskovite mica shield, thickness 0,15 / 0,20 mm.

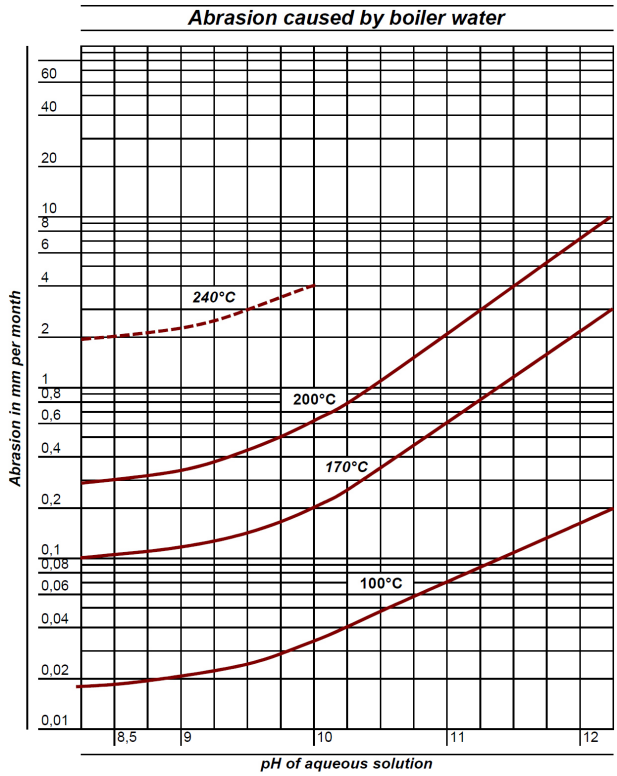
Code: RMMS _ [Width: A o B] _ [Size: 1…9]

Available size

The shields can be supplied in two different types depending from the glass they have to protect:

type A - width 30 mm
type B - width 34 mm

SIZE	1	2	3	4	5	6	7	8	9
LEVEL GAUGE BODY LENGTH [mm]	130	155	180	205	235	265	295	335	360
SHIELD LENGTH L1 [mm]	115	140	165	190	220	250	280	320	340
SHIELD WIDTH W TYPE A [mm]	30	30	30	30	30	30	30	30	30
SHIELD WIDTH W TYPE B [mm]	34	34	34	34	34	34	34	34	34



Abrasion - shown here for unprotected borosilicate glasses.
The glasses life depends not only on the temperature but also on the water pH (higher pH values shorten glass life).

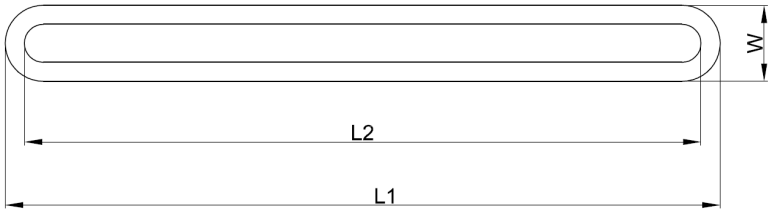
The **PCTFE** shield is strictly recommended with fluoridic acid.

SPARE PARTS FOR GLASS LEVEL GAUGES

GLASSES GASKETS

On request, the glass can be supplied also along with two gaskets.

- Standard sealing gasket: Graphite with reinforcement (S.S. 316 foil) — Option: PTFE
- Standard cushion gasket: Graphite with reinforcement (S.S. 316 foil) — Option: PTFE; Aramidic fiber (asbestos free)



Code:

JGG _ [Width: A o B] _ [Size: 1…9] (Graphite)

JGH _ [Width: A o B] _ [Size: 1…9] (Graphite Hochdruck)

JGP _ [Width: A o B] _ [Size: 1…9] (PTFE)

CGA _ [Width: A o B] _ [Size: 1…9] (Aramidic fiber)

SIZE	1	2	3	4	5	6	7	8	9
LEVEL GAUGE BODY LENGTH [mm]	130	155	180	205	235	265	295	335	360
GASKET LENGTH L1 [mm]	115	140	165	190	220	250	280	320	340
VISIBLE LENGTH L2 [mm]	95	120	145	170	200	230	260	300	320
GASKET WIDTH W TYPE A [mm]	30	30	30	30	30	30	30	30	30
GASKET WIDTH W TYPE B [mm]	34	34	34	34	34	34	34	34	34

INSTRUCTIONS FOR THE REMOVAL AND REPLACEMENT OF GLASSES AND GASKETS

Assumptions:

- The glass and gaskets replacement requires such specific devices and tools that the operation by personnel not specifically trained to do so is not advised
- The level gauge is designed so that dismounting is possible solely by means of specific tools in order to avoid any involuntary opening of its parts

If the buyer decides to proceed with its own personnel and tools for maintenance operations, such as the replacement of the glass and/or the gaskets, it is **IMPORTANT**:

- that two people with good technical knowledge of maintenance are envisioned
- the customer contact the manufacturer to decide the proper parts and get instructions
- to carefully read the instructions reported in the use and maintenance manual provided with the instrument
- the operators wear appropriate individual personal protective means and all necessary precautions must be taken to avoid accidents

Before starting any maintenance operation, it is important to wait until the temperature of the equipment reaches the room temperature

Before level gauge dismounting be sure that the instrument is not under pressure:

1) Unscrew the tightening bolts and nuts and be sure that when it is opened no parts fall
2) Remove all gaskets residues from the housing. Use **non-abrasive** products and in any case products that are could incise the glass housing (any incision will affect the glass sealing)
3) Carefully clean all components by non-abrasive products

Mounting:

1) Insert the sealing gasket in the housing, put the glass over (if it's a reflex type the prismatic surface must be in contact with the fluid) and then the cushion gasket; in case of a transparent type, if foreseen, insert the mica shields (or the one in PCTFE) between the sealing gaskets and the glass (it must perfectly adhere to the glass surface in contact with the fluid)
2) Position the cover avoiding any movement of glass and gasket, even slightly
3) Proceed by tightening the fitting screws in the cross sequence shown on the instruction provided with the glass. The tightening torque is mentioned on every products data sheet

Before restarting the equipment:

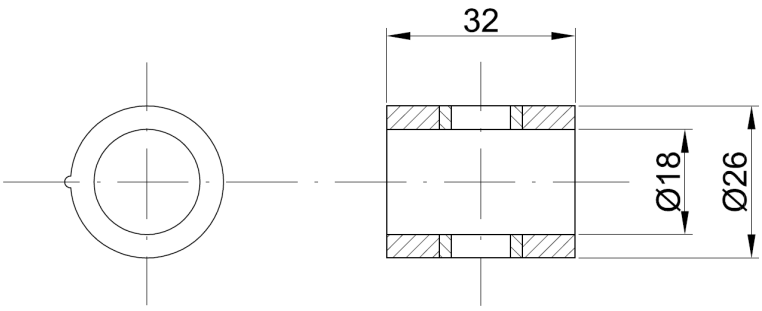
- Leave the shut-off valves closed in order to avoid dangerous "head butts" to the glasses and their seal
- If small leakage of fluid are noted, gently tighten the stuffing box, the screws and sealing nuts

GASKETS for cylindrical plug cocks

Two holes case for cock DS D18 or for shut-off cocks DS GR18 and DS MT18

Each shut-off cocks needs two cases (cylindrical gaskets)

Standard material: Graphite with stainless steel 316 rings on valve bore
Option: PTFE with stainless steel 316 rings on valve bore

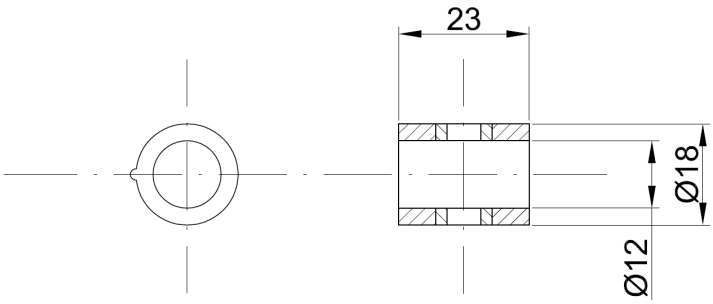


Code: BB18G (Graphite)
BB18GL (Graphite layer)
BB18P (PTFE)

Two holes case for cock DS D12 or for drain cock of the shut-off cocks DS GR18 and DS MT18

Each shut-off cocks has a drain cock as standard

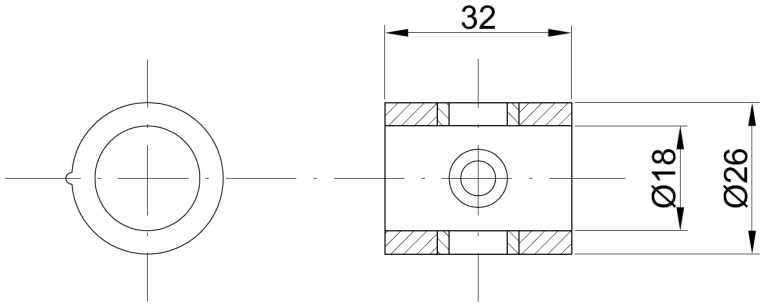
Standard material: Graphite with stainless steel 316 rings on valve bore
Option: PTFE with stainless steel 316 rings on valve bore



Code: BB12G (Graphite)
BB12GL (Graphite layer)
BB12P (PTFE)

Three holes case for manometer setting valve DS PM18 three way with flange for inspection manometer

Standard material: Graphite with stainless steel 316 rings on valve bore
Option: On request



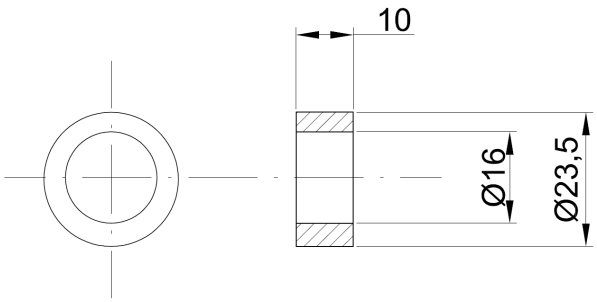
Code: DD18 (Graphite)

SPARE PARTS FOR GLASS LEVEL GAUGES

Gasket for grinded pipes

Each shut-off cocks (DS GR18 and DS MT18) needs two packing rings to ensure the sealing of the housing pipes

Standard material: Graphite
Option: PTFE (chevron type); EPDM (only for glass tube)

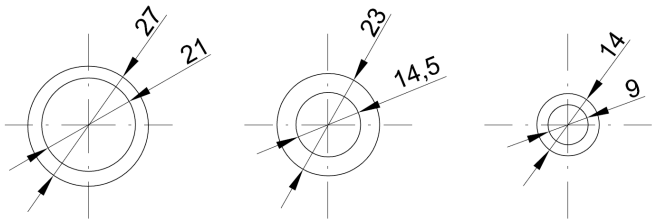


Code: AA16G (Graphite)
AA16P (PTFE)
AA16E (EPDM)

Metal gaskets

Each shut-off cocks (DS GR18 and DS MT18) needs several metallic gaskets (see the set quantity mentioned below):

Standard material: Copper
Option: Stainless steel 316



Code: GM23CU (Copper)
GM27CU (Copper)
GM14CU (Copper)

GM23SS (Stainless steel 316)
GM27SS (Stainless steel 316)
GM14SS (Stainless steel 316)

SPARE PARTS SET FOR HOUSING

Each reflex housing needs a glass for every element (see the data sheets); in case of transparent level gauge, the glasses are two for every element. Each glass needs two gaskets (a sealing gasket and a cushion gasket).

- Reflex glass: 1 x No. elements of the level gauge
- Transparent glass: **2** x No. elements of the level gauge
- Gaskets: **2** x No. glasses

SET OF SPARE PARTS FOR SHUT-OFF COCKS DS GR18 AND DS MT18

Each shut-off cocks (DS GR18 and DS MT18) needs a gaskets set composed by:

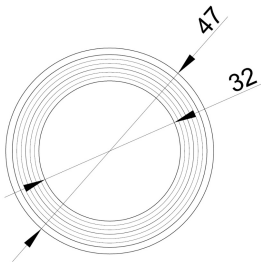
- No. 2 cases BB18…
- No. 1 case BB12…
- No. 2 packing ring AA16…
- No. 1 gasket DTG18.3… Pos. 29 Page 1.66 (Only for drain cock with drain pipe)
- No. 2 gaskets DTG29.5… Pos. 36 Page 1.66 (Only for shut-off cocks with threaded connections)
- No. 2 gaskets GM23… (Not necessary for DS MT18)
- No. 1 gasket GM27… (Not necessary for DS MT18)
- No. 2 gaskets GM14…

GASKETS for globe valves DS SHV

Gasket between body and bonnet

Each shut-off valves DS SHV needs two gaskets.

Standard material: Graphite / AISI 316L
Option: PTFE

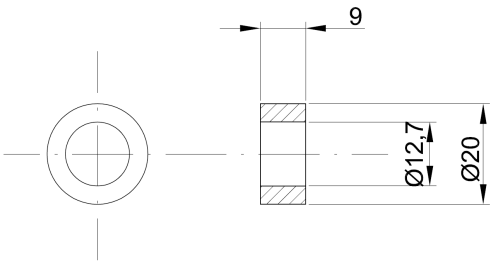


Code: GSM47G (Graphite)
GSM47P (PTFE)

Gasket for stem

Each shut-off valves DS SHV needs four gaskets.

Standard material: Graphite
Option: PTFE (chevron type)



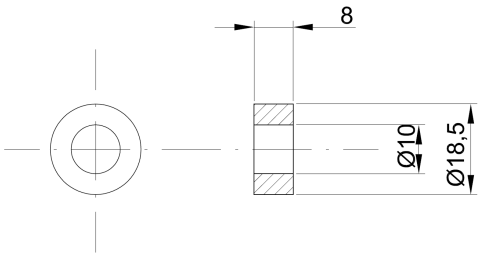
Code: AA20G (Graphite)
AA20P (PTFE)

GASKETS for push-button valves DS NPV and needle valves DS DHV

Gasket for stem

Both push-button valve DS NPV and needle valve DS DHV need two gaskets.

Standard material: Graphite
Option: PTFE (chevron type)



Code: AA18.5G (Graphite)
AA18.5P (PTFE)

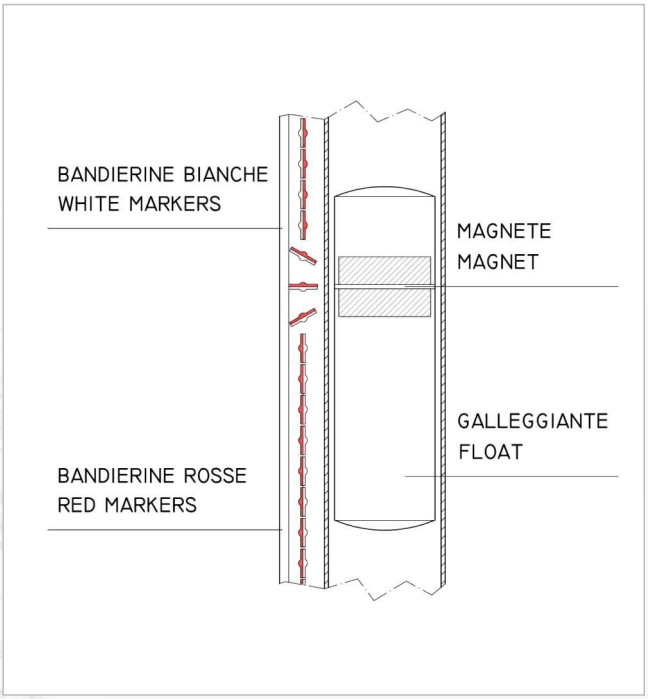
DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

MAGNETIC level gauges

Magnetic level gauge indicates the level of fluid inside a tank by using the magnetic properties of its elements.

A by-pass (which mainly consists of a tube longer than the fluid range) is connected to the tank containing the fluid whose level is to be measured.
A float containing a magnet moves up and down the main chamber, and its position determines the tank fluid level (the level is clearly indicated by red and white markers).
Variation in fluid level causes the float to move and the float magnet then makes the roller display (which also contains a magnet) rotate. Red markers are normally shown in the part of the tank holding the fluid and white markers in the part containing the gas/steam.



Magnetic level gauge with flanged connections, magnetic switches and level transmitter

Magnetic level gauge with flanged cut off cocks, drain cock and level transmitter

Magnetic level gauges are built exclusively according to the centre-to-centre distance specified by the customer.
The reading length usually matches the centre-to-centre distance.

The roller display reading point and the height of the level switches can be adjusted quickly and easily thanks to specially designed clamping brackets.
The simple mounting principle means that electronic accessories can be fitted to the gauge at a later stage.

The materials used to manufacture the gauges differ depending on their intended use.
Given that the level gauge works as a result of its magnetic properties, no ferromagnetic materials have been used in its construction.

The standard model features an AISI 316 L stainless steel main chamber and an AISI 316L stainless steel or Titanium Grade 2 float.

DIESSE also offers a wide range of optional accessories, including: shut-off valves, drain valves, vent valves, calibrated scale, bistable switches and level transmitters (described later on in the catalogue).

TO RECOMMEND THE MOST SUITABLE LEVEL GAUGE FOR A PARTICULAR PURPOSE, PLEASE PROVIDE THE FOLLOWING DATA WHEN ASKING FOR ADVICE OR A QUOTATION.

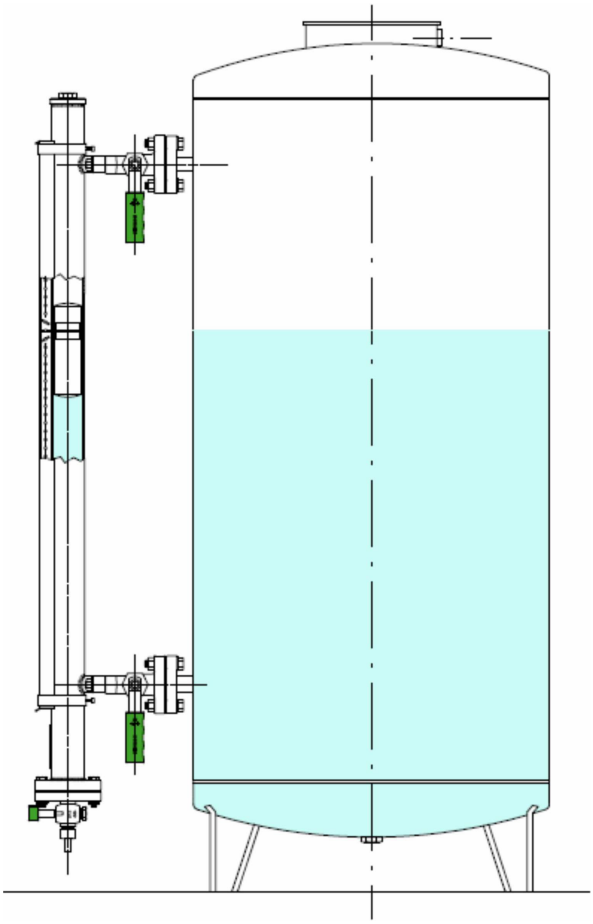
► essential data

- ► **CENTRE-TO-CENTRE DISTANCE (distance between process connections)**
- ► **TYPE OF CONNECTIONS (flanged-threaded-weld-on) and related STANDARDS (UNI-ANSI-DIN...)**
- POSITION OF PROCESS CONNECTIONS
- POSITION OF THE VALVE HANDLING
- ► **TYPE OF FLUID**
- ► **SPECIFIC WEIGHT OF FLUID**
- ► **DESIGN AND MAXIMUM OPERATING PRESSURES**
- ► **DESIGN AND MAXIMUM OPERATING TEMPERATURES**
- ANY ADDITIONAL ACCESSORIES

Magnetic level gauges are suitable for a wide range of applications and are a perfect alternative to glass level gauges if the latter cannot be used safely.

They are particularly recommended:

- in cases where a particularly accurate fluid level reading is not necessary
- in cases where the maximum pressure and temperature values exceed those listed in the technical specifications of the glasses
- if remote readings have to be taken (e.g. if the level gauge is positioned above or a considerable distance away from the observer's position)
- if continuous readings using a remote gauge situated some distance away from the system are necessary
- if one or more signals (i.e. alarm signals) are required to indicate various tank liquid levels
- if the centre-to-centre distance exceeds 3 metres



DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

MAGNETIC level gauges

DIESSE magnetic level gauges are manufactured and certified in accordance with the strictest international standards.

CE

Consorzio Europeo Certificazione

CERTIFICATO

Controlli ufficiali delle attrezzature effettuati a intervalli casuali

in accordo alla Direttiva 2014/68/UE
Certificato No.: 16/101-VF15335
Categoria: II

Nome e Indirizzo del Fabbricante: DIESSE Srl Fluid Control
Via dell'Artigianato 10/12,
21040 Origgio (VA)

A seguito degli accertamenti effettuati, il Fabbricante è autorizzato ad apporre, in corrispondenza della Marcatura CE, il numero identificativo sottoriportato su ciascuna attrezzatura a pressione prodotta:

CE 1131

Procedura in accordo alla Direttiva 2014/68/UE: Controllo interno della produzione unito a controlli ufficiali delle attrezzature effettuati a intervalli casuali (Modulo A2)

Rapporto di Audit No: 16/101-RA001 del 13/09/2016

Descrizione delle attrezzature a pressione: Indicatore di livello magnetico DS-MG DS-BP
Dis. MGNDSBP01_Rev.3 ; MGNDSBP01_Rev.3
N.F. 46616

Verifica eseguita su

Luogo di produzione: c/o DIESSE Srl Fluid Control
Via dell'Artigianato 10/12,
21040 Origgio (VA)

Validità: 12/09/19

Legnano, 13 settembre 2016

CONSORZIO EUROPEO CERTIFICAZIONE
L'ORGANO DELIBERANTE

Il Direttore Tecnico (A. FUGAZZI)

Il Direttore Generale (L. FIMOSSI)

ACCREDIA

CEC - CONSORZIO EUROPEO CERTIFICAZIONE S.C.A.R.L.
Sede Legale e Uffici: Via Piacenza, 46- 26025 LEGNANO (MI) Italy - tel. (+39) 0331 - 442266- fax (+39) 0331- 440054

IIS - Founding Member of

IIS CERT

IIS - Founding Member of

Certificato numero: 279
Certificate number

Si certifica che la Società
We hereby certify that the Company

DIESSE SRL FLUID CONTROL

Unità operativa / *Branch*
VIA DELL'ARTIGIANATO 10/12 - 21040 ORIGGIO (VA)

applica un Sistema di Gestione per la Qualità conforme ai requisiti della norma
operates a Quality Management System fulfiling the requirements of

UNI EN ISO 9001 : 2015
ISO 9001 : 2015

campo di applicazione / *field of application* :
Progettazione e produzione di indicatordi livello, rubinetterie industriali e strumentazione industriale e fornitura di prodotti affini.
Design and production of level markers, industrial taps and industrial instrumentation and supply of related products.
Settori EA / *EA Sectors* 19 - 17

		L' Organo Deliberante	Il Direttore Tecnico IIS CERT
Prima emissione / *First issue*	19/11/2007	Dott. Ing. Paolo Piccito	Dott. Ing. Stefano Monni
Emissione corrente / *Current issue*	18/12/2017		
Data di scadenza / *Expiry date*	09/10/2019		

ACCREDIA

SGQ n° 021A PRS n° 021C
PRD n° 021B SGA n° 033D
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreement

Il presente certificato è soggetto al rispetto delle condizioni stabilite nel regolamento IIS CERT QAS 017 R.
This certificate complies with the terms established by IIS CERT document QAS 017 R.

IIS CERT Srl Lungobisagno Istria 29 R - 16141 GENOVA - www.iiscert.it
Corporate Governance Istituto Italiano della Saldatura

Aside from the type of fluid in the tank, the choice of level gauge mainly depends on the operating and design temperature/pressure values. These must always be clearly specified when asking for a quote or placing an order.

Magnetic level gauges differ in terms of their pressure ratings under operating conditions: low, medium and high.

Materials / Specifications:

The different versions available are as follows**:**

Main Chamber:
- Standard: Stainless steel AISI 316L Ø 60.3 mm, thickness 2 mm or 2.7 mm

Float:

- Standard: Stainless steel AISI 316L or Titanium Grade 2 Ø 50 mm

Rollers / Housing:
- Standard: brass rollers with red and white expoxy paint / anodised aluminum housing, glass cover
- Options: stainless steel rollers red and white / anodised aluminum or stainless steel housing, polycarbonate or glass cover

Process connections position:
- Standard: side/side
- Additional Options: side/bottom; top/side; top/bottom

Process connections type:
- Standard: with flanges, threaded tubes and butt weld tubes
- Additional Options: shut-off cocks (side/side) on request

Drain:
- Standard: threaded 1/2" with plug
- Additional Options: threaded cock; other extras on request

Vent:
- Standard: threaded 1/2" with plug
- Additional Options: threaded cock; other extras on request

Gaskets:
- Standard: graphite/AISI 316
- Options: PTFE/AISI 316, other extras on request

Accessories:

Magnetic switch, Level transmitter, Calibrated scale, Shut-off cocks, Drain cock, Vent cock, Cocks handles lock (see from page 2.13)

Certifications (on request):

- Marine Approval
- Others on request

All DIESSE products are individually checked and tested in accordance with company quality procedures and the industry regulations currently in effect.
Certificates can be issued on request.

MAGNETIC LEVEL GAUGES

Code

1 Basic Type

DS MG	DIESSE Magnetic level gauge

2 Level Gauge Model

Pos. 1: Level Gauge type

DS BP	Stainless steel AISI 316L (Low / Medium pressure)
DS MP	Stainless steel AISI 316L (High Pressure)

3 Process connections

Pos. 1: Nominal dimension	Pos. 2: Nominal pressure	Pos. 3: Type / Finish	Pos. 4: Position	
			Standard	Side / Side
			/SB	Side / Bottom
			/TS	Top / Side
			/TB	Top / Bottom

4 Distance Centre-to-centre

M…	Distance between connections centres in mm

5 Materials

Pos. 1: Main chamber		Pos. 2: Connections / Bottom flanges / Flat top with plug	
SS	Stainless steel AISI 316L	SS	Stainless steel AISI 316L

Pos. 3: Roller display - Housing / Rollers		Pos. 4: Float		Pos. 5: Gaskets	
DAB	Aluminium housing / brass with epoxy paint rollers	SS	Stainless steel AISI 316L	Standard:	Graphite/AISI 316
BMDAA	Aluminium housing / stainless steel rollers	TG2	Titanium Grade 2	PF	PTFE/AISI 316
BMDSS	Stainless steel housing / stainless steel rollers	TG2R	Titanium Grade 2 with reinforcements		

6 Accessories

EBS (Type)	Magnetic switch	LTM	Level transmitter	VSG	Calibrated scale
GR18	Cylindrical plug shut-off cocks	D12	Cylindrical plug drain cock	D12S	Cylindrical plug vent cock
SHV	Shut-off globe valves	DHV	Drain globe valve	DHVS	Vent globe valve
CB	Support bracket	SSHD	Cocks handles lock		
LFC	Weight closing for lower handle	UFC	Weight closing for upper handle	LUFC	Weight closing for all handles (lower + upper)

7 Approvals

SHP…	Marine

Code	1	2	3	4	5	6
e.g.	DS MG	- DSBP	- 20/16/RF	- M 1000	- SS/SS/DAB/SS	- GR18 / D12 / VSG

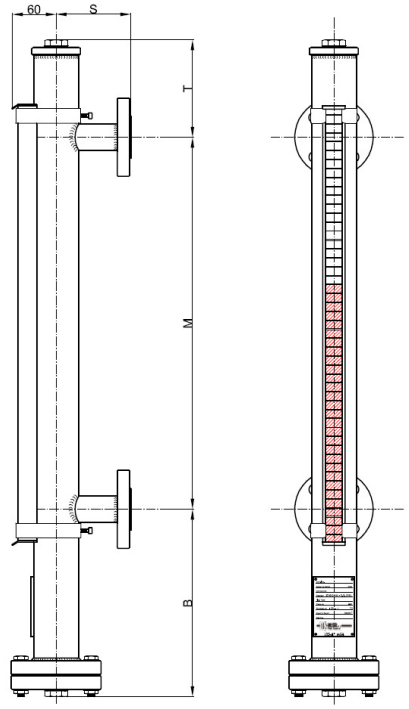
DS DIESSE FLUID CONTROL

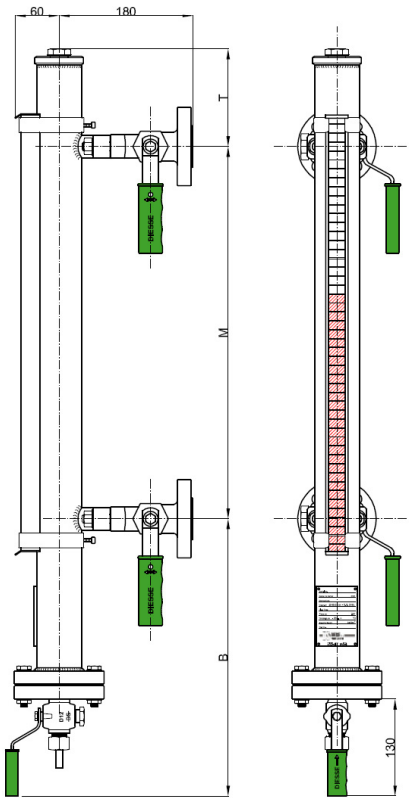
MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP

Code: DS MG - DSBP - … /16/RF - M…- SS/SS/…/SS





Technical data

Service conditions
Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2 mm)
Float:	Stainless steel 316L (Ø 50 mm) Titanium Grade 2 (Ø 50 mm)
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN16/40 DN15-20-25	ANSI #150/RF DN ½“ - ¾“ - 1“
Standard threaded pipes:	BSP-M ½” - ¾” - 1” BSP-F ½” - ¾” - 1”	NPT-M ½” - ¾” - 1” NPT-F ½” - ¾” - 1”
Standard butt weld pipes:	BW ½” - ¾” - 1”	SW ½” - ¾” - 1”

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN16)
Cocks DS GR18: Kg. 6,2 approx. (With flanges UNI DN20 PN40)
Valves DS SHV: Kg. 10,6 approx. (With flanges UNI DN20 PN40)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

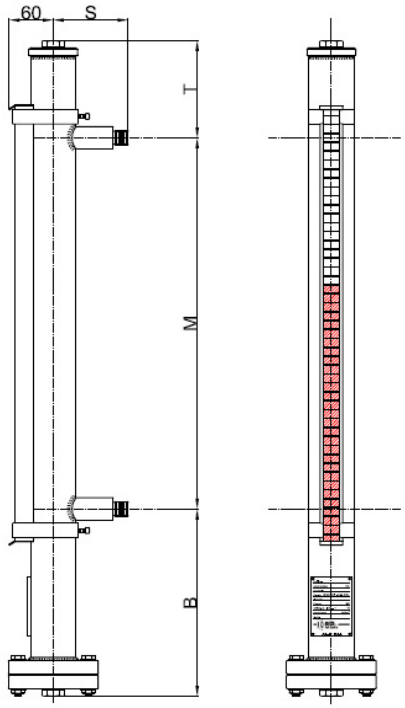
DS DIESSE FLUID CONTROL

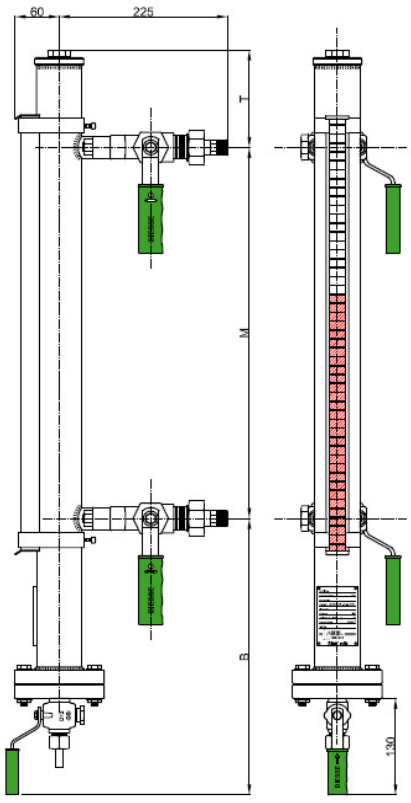
MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP

Code: DS MG - DSBP - 1/2" GAS-M - M…- SS/SS/…/SS





Technical data

Service conditions
Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2 mm)
Float:	Stainless steel 316L (Ø 50 mm) Titanium Grade 2 (Ø 50 mm)
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN16/40 DN15-20-25	ANSI #150/RF DN ½" - ¾" - 1"
Standard threaded pipes:	BSP-M ½" - ¾" - 1"	NPT-M ½" - ¾" - 1"
	BSP-F ½" - ¾" - 1"	NPT-F ½" - ¾" - 1"
Standard butt weld pipes:	BW ½" - ¾" - 1"	SW ½" - ¾" - 1"

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 10,0 approx. (with centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18: Kg. 3,8 approx. (with threads 1/2" BSP-M)
Valves DS SHV: Kg. 8,8 approx. (with threads 1/2" BSP-M)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

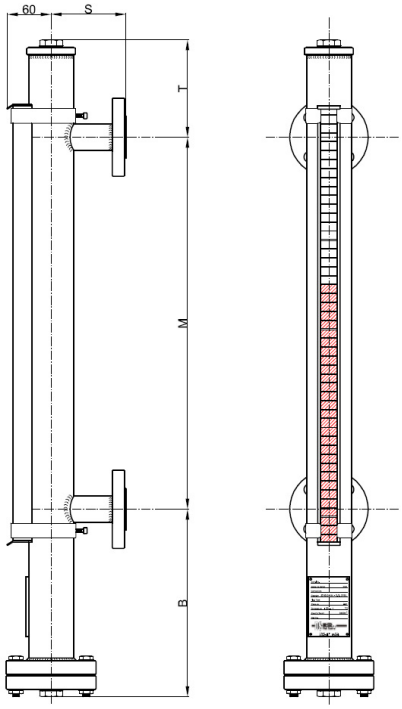
DS DIESSE FLUID CONTROL

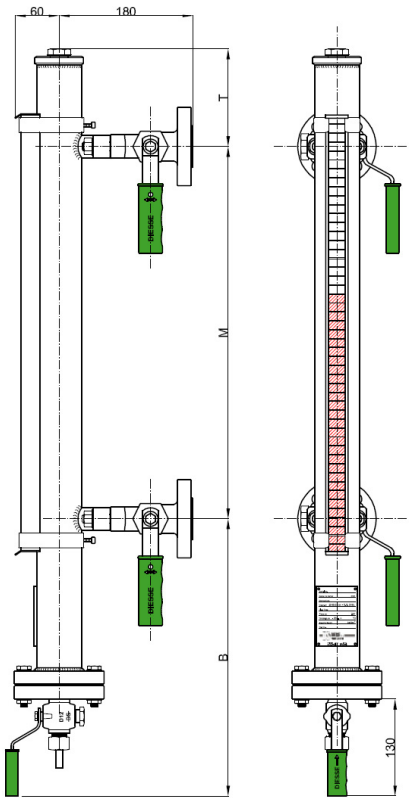
MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP

Code: DS MG - DSMP - … /40/RF - M…- SS/SS/…/SS





Technical data

Service conditions
Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2,77 mm)
Float:	Titanium Grade 2 (Ø 50 mm) with reinforcements
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN40 DN15-20-25	ANSI #300/RF DN ½“ - ¾“ - 1“
Standard threaded pipes:	BSP-M ½” - ¾” - 1”	NPT-M ½” - ¾” - 1”
	BSP-F ½” - ¾” - 1”	NPT-F ½” - ¾” - 1”
Standard butt weld pipes:	BW ½” - ¾” - 1”	SW ½” - ¾” - 1”

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN40)
Cocks DS GR18: Kg. 6,2 approx. (With flanges UNI DN20 PN40)
Valves DS SHV: Kg. 10,6 approx. (With flanges UNI DN20 PN40)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

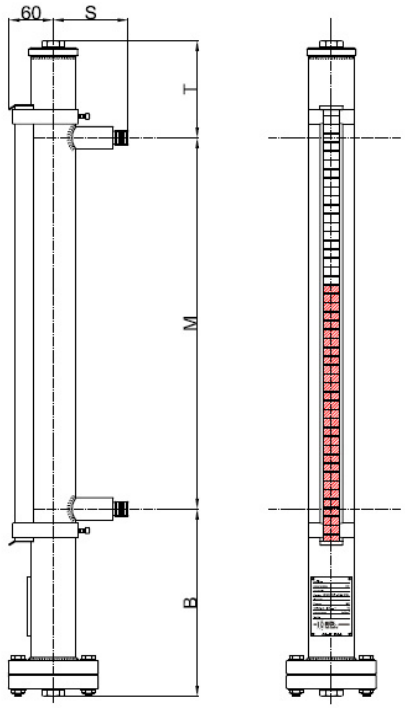
DS DIESSE FLUID CONTROL

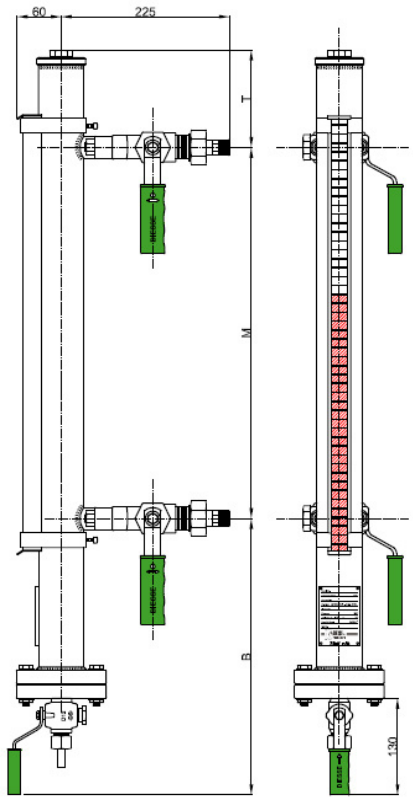
MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP

Code: DS MG - DSBP - 1/2" GAS-M - M…- SS/SS/…/SS





Technical data

Service conditions
Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2,77 mm)
Float:	Titanium Grade 2 (Ø 50 mm) with reinforcements
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN40 DN15-20-25	ANSI #300/RF DN ½" - ¾" - 1"
Standard threaded pipes:	BSP-M ½" - ¾" - 1"	NPT-M ½" - ¾" - 1"
	BSP-F ½" - ¾" - 1"	NPT-F ½" - ¾" - 1"
Standard butt weld pipes:	BW ½" - ¾" - 1"	SW ½" - ¾" - 1"

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Valves DS SHV: globe type - Opening/Closing by handwheel

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 10,0 approx. (with centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18: Kg. 3,8 approx. (with threads 1/2" BSP-M)
Valves DS SHV: Kg. 8,8 approx. (with threads 1/2" BSP-M)

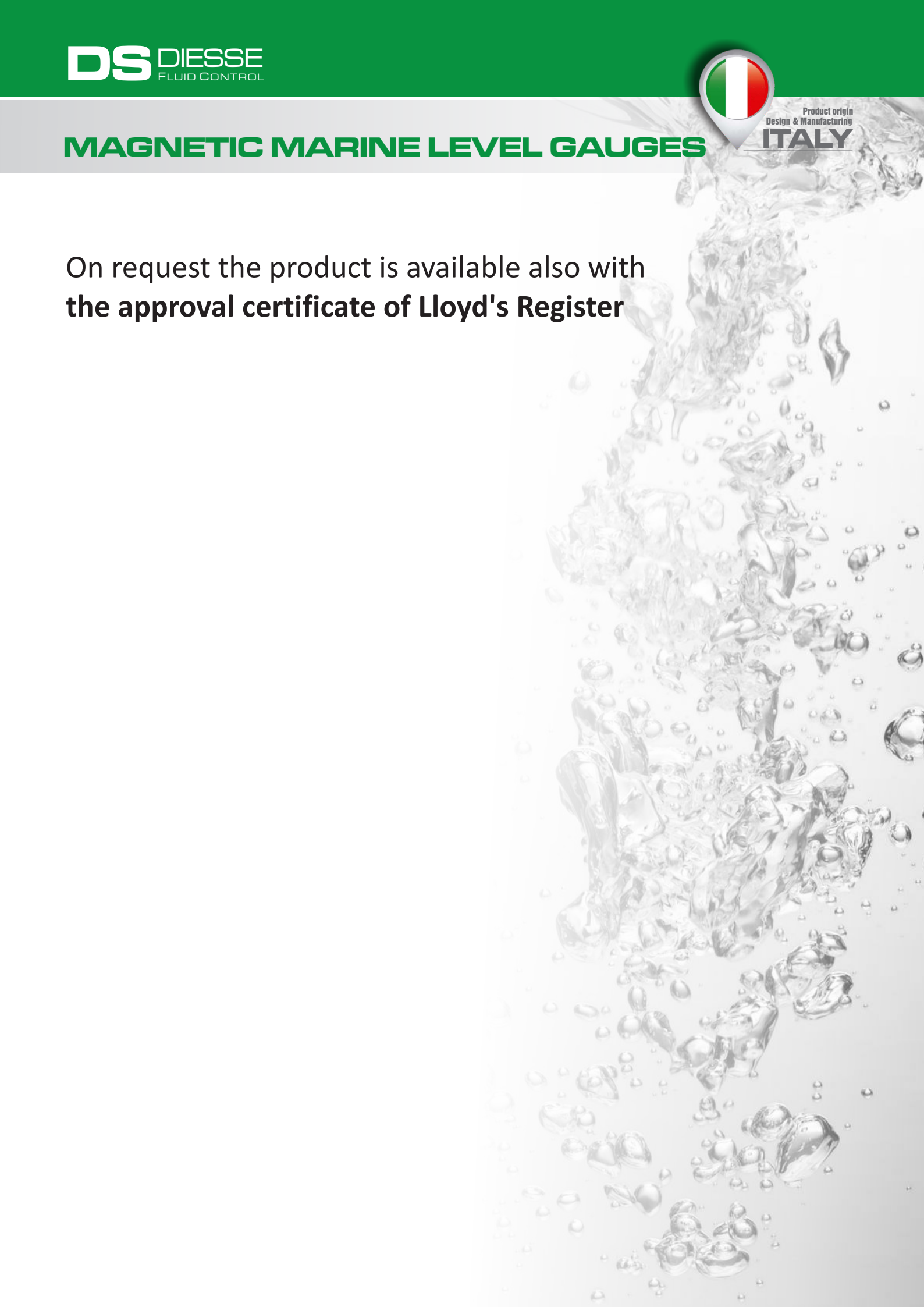
Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

MAGNETIC MARINE LEVEL GAUGES

On request the product is available also with
the approval certificate of Lloyd's Register



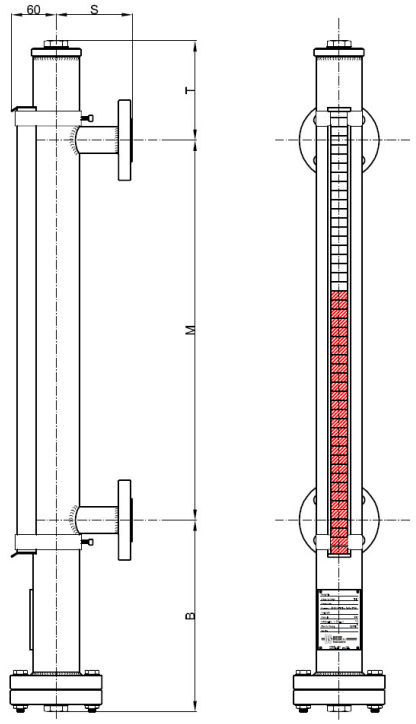
DS DIESSE FLUID CONTROL

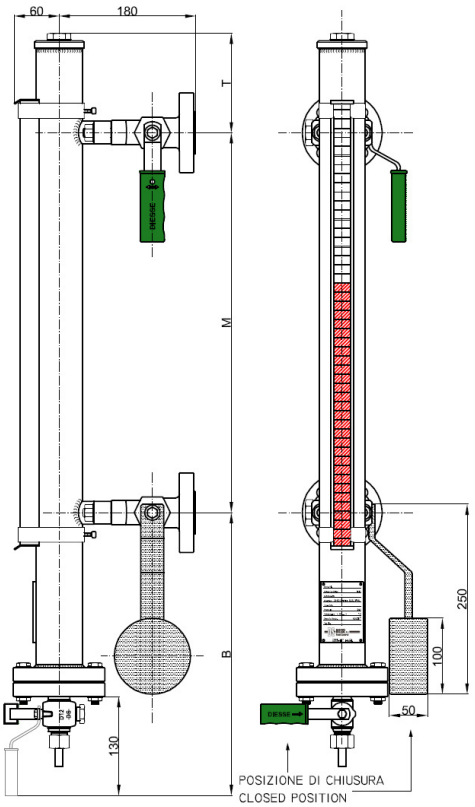
MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP - SHP

Code: DS MG - DSBP - … /16/RF - M…- SS/SS/…/SS - SHP





Technical data

Service conditions
Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2 mm)
Float:	Stainless steel 316L (Ø 50 mm) Titanium Grade 2 (Ø 50 mm)
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN16/40 DN15-20-25	ANSI #150/RF DN ½“ - ¾“ - 1“
Standard threaded pipes:	BSP-M ½” - ¾” - 1”	NPT-M ½” - ¾” - 1”
	BSP-F ½” - ¾” - 1”	NPT-F ½” - ¾” - 1”
Standard butt weld pipes:	BW ½” - ¾” - 1”	SW ½” - ¾” - 1”

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN16)
Cocks DS GR18 with weight closing for lower handle: Kg. 9,6 approx. (With flanges DN20 PN40)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

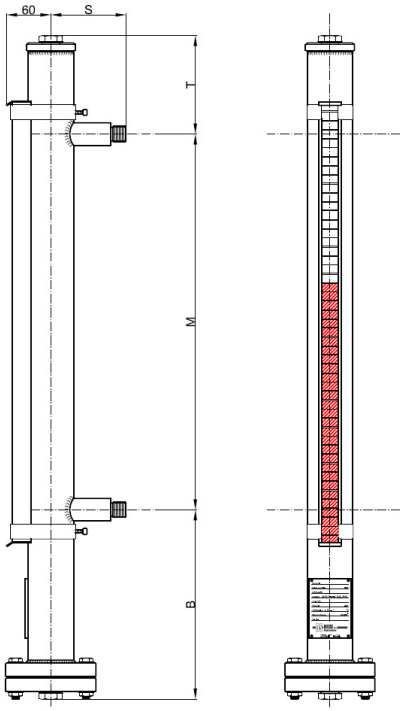
DS DIESSE FLUID CONTROL

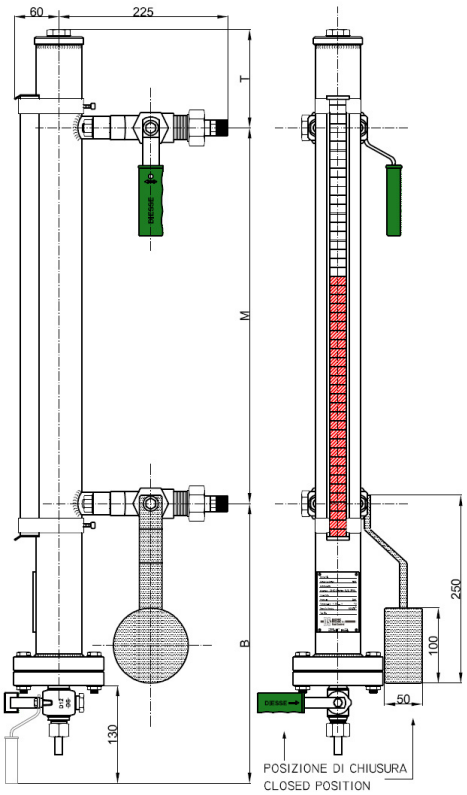
MAGNETIC LEVEL GAUGE

PN16 and PN25 / Class 150

DS MG - DS BP - SHP

Code: DS MG - DSBP - 1/2" GAS-M - M…-SS/SS/…/SS-SHP





Technical data

Service conditions
Pressure: PN16 / PN25 / Class 150
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2 mm)
Float:	Stainless steel 316L (Ø 50 mm) Titanium Grade 2 (Ø 50 mm)
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN16/40 DN15-20-25	ANSI #150/RF DN ½" - ¾" - 1"
Standard threaded pipes:	BSP-M ½" - ¾" - 1"	NPT-M ½" - ¾" - 1"
	BSP-F ½" - ¾" - 1"	NPT-F ½" - ¾" - 1"
Standard butt weld pipes:	BW ½" - ¾" - 1"	SW ½" - ¾" - 1"

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½" with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 10,0 approx. (With centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18 with weight closing for lower handle: Kg. 7,2 approx. (With threads 1/2" BSP-M)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

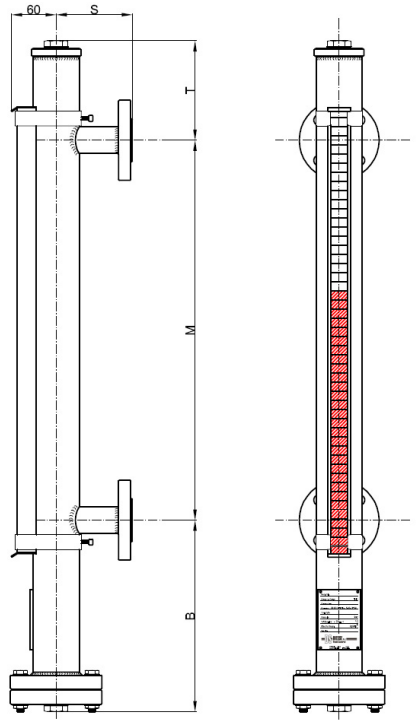
DS DIESSE FLUID CONTROL

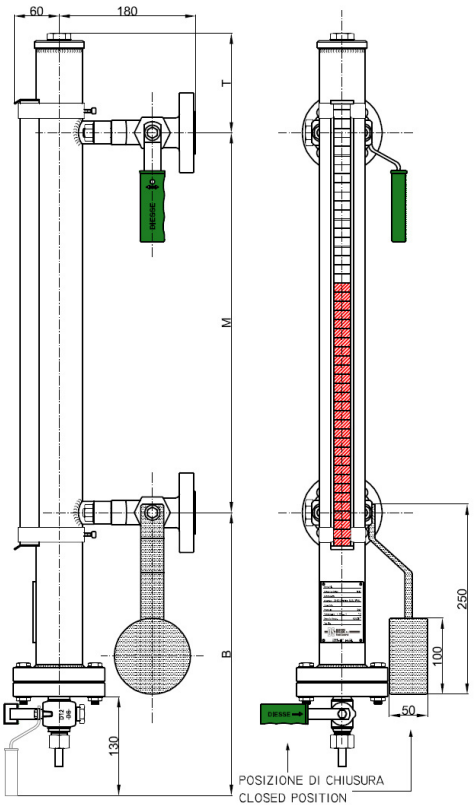
MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP - SHP

Code: DS MG - DSMP - … /40/RF - M…- SS/SS/…/SS - SHP





Technical data

Service conditions
Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2,77 mm)
Float:	Titanium Grade 2 (Ø 50 mm) with reinforcements
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN40 DN15-20-25	ANSI #300/RF DN ½“ - ¾“ - 1“
Standard threaded pipes:	BSP-M ½” - ¾” - 1” BSP-F ½” - ¾” - 1”	NPT-M ½” - ¾” - 1” NPT-F ½” - ¾” - 1”
Standard butt weld pipes:	BW ½” - ¾” - 1”	SW ½” - ¾” - 1”

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 12,0 approx. (With centre-to-centre 1.000 mm and flanges DN20 PN40)
Cocks DS GR18 with weight closing for lower handle: Kg. 9,6 approx. (With flanges DN20 PN40)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

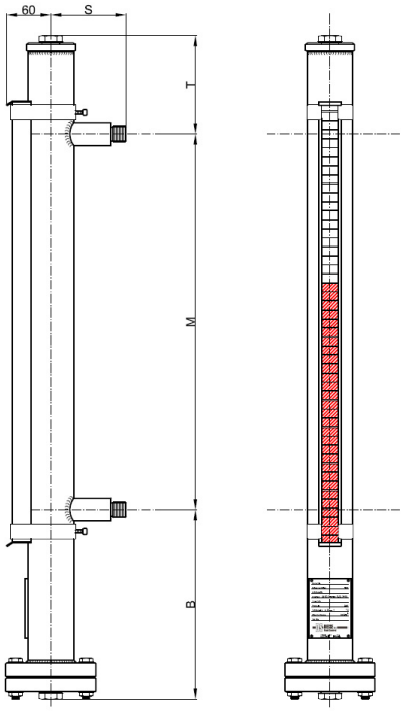
DS DIESSE FLUID CONTROL

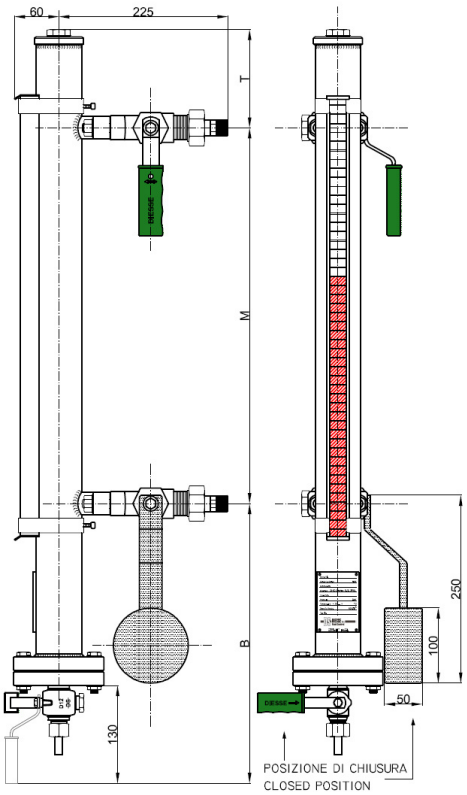
MAGNETIC LEVEL GAUGE

PN40 / Class 300

DS MG - DS MP - SHP

Code: DS MG - DSBP - 1/2" GAS-M - M…-SS/SS/…/SS-SHP





Technical data

Service conditions
Pressure: PN40 / Class 300
Temperature: up to 300°C
Specific weight: ≥ 0,6 g/cm^3

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (Execution in several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2,77 mm)
Float:	Titanium Grade 2 (Ø 50 mm) with reinforcements
Process connections:	Stainless steel 316L (flanged, threaded pipes, butt weld pipes) With shut-off cocks in carbon steel ASTM A105 or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover Stainless steel red and white, anodised aluminium housing, glass cover (Execution for high temperature)

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Process connections

Standard flanges:	UNI PN40 DN15-20-25	ANSI #300/RF DN ½“ - ¾“ - 1“
Standard threaded pipes:	BSP-M ½” - ¾” - 1” BSP-F ½” - ¾” - 1”	NPT-M ½” - ¾” - 1” NPT-F ½” - ¾” - 1”
Standard butt weld pipes:	BW ½” - ¾” - 1”	SW ½” - ¾” - 1”

Options: further connections type or connections with cocks (See details at page 2.13 and 2.14)

Vent: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Drain: Standard: threaded ½” with plug Options: On request, with flange or with cock (See details at page 2.13 and page 2.14)

Process connections with shut-off cocks: (See details at page 2.13 and page 2.14)
Cocks DS GR18: cylindrical plug type - Straight type - Quick 90° closing
Lower cock with weight closing accessory for self closing

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request
S = 100 mm (Standard); Option: on request

Accessories

Shut-off cocks	(See details from page 2.13)
Drain cock	(See details from page 2.13)
Vent cock	(See details from page 2.13)
Calibrated scale	(See details from page 2.14)
Magnetic switches	(See details from page 2.15)
Level transmitter	(See details from page 2.29)

Weights
Magnetic level gauge: Kg. 10,0 approx. (With centre-to-centre 1.000 mm and threads 1/2" BSP-M)
Cocks DS GR18 with weight closing for lower handle: Kg. 7,2 approx. (With threads 1/2" BSP-M)

Spare parts
For routine maintenance are not necessary spare parts.
For cocks and valves see from page 1.72 of the catalogue relative to the glass level gauges.

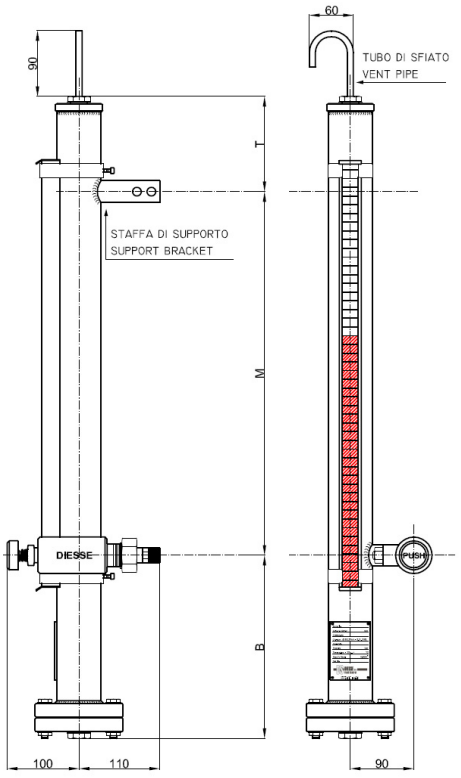
DS DIESSE FLUID CONTROL

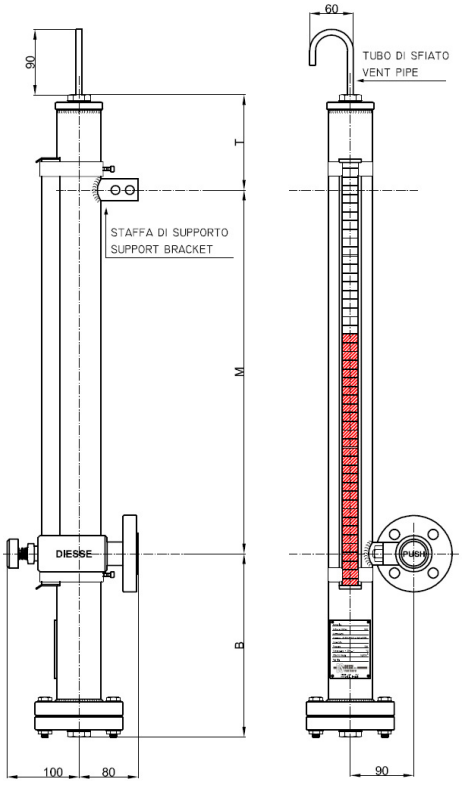
MAGNETIC LEVEL GAUGE

PN16

DS MG - DS BP - NPV - SHP

Code: DS MG-DSBP-… /16/RF-M…- SS/SS/…/SS-NPV- SHP





Technical data

Service conditions
Pressure: PN16
Temperature: up to 150°C
Specific weight: ≥ 0,6 g/cm^3

Application
Fluid storage tanks also aboard of ships

View
Standard: adjustable on 360° in the installation phase

Distance M (Centre-to-centre)
On request, distances up to 5.600 mm in one sole piece (Fixed distance, not adjustable)
Option: On request distances over 5.600 mm (In several pieces)

Materials (Standard)

Main chamber:	Stainless steel 316L (Ø 60,3 x 2 mm)
Float:	Stainless steel 316L (Ø 50 mm) Titanium Grade 2 (Ø 50 mm)
Process connections:	Self closing valve DS NPV, push button type in carbon steel ASTM A105 galvanized or stainless steel 316L
Rollers:	Brass with red and white epoxy paint, anodised aluminium housing, glass cover

Options: roller display housing with stainless steel cover

Gaskets
Standard: graphite/AISI 316 Options: PTFE/AISI 316

Self-closing Valve
DS NPV: self-closing, push button type
Handling: opening by push button (Standard: valve on the right side; On request on the left side)
Process connection:

Standard flange:	UNI PN16 DN15-20-25	ANSI #150/RF DN ½“ - ¾“ - 1“
Standard threaded union:	BSP-M ½” - ¾”	NPT-M ½” - ¾”

Option: further connection types

Vent:	Standard: threaded ½” with vent pipe	Option: on request (see details at page 1.52)
Drain:	Standard: threaded ½” with plug	Option: on request (see details at page 1.52)

Dimensions
B = Distance depending on the specific weight of the fluid
T = 130 mm (Standard); Option: on request

Accessories

Shut-off cocks	(see details from page 2.13)
Drain cock	(see details from page 2.13)
Vent cock	(see details from page 2.13)
Calibrated scale	(see details from page 2.14)
Magnetic switches	(see details from page 2.15)
Level transmitter	(see details from page 2.29)

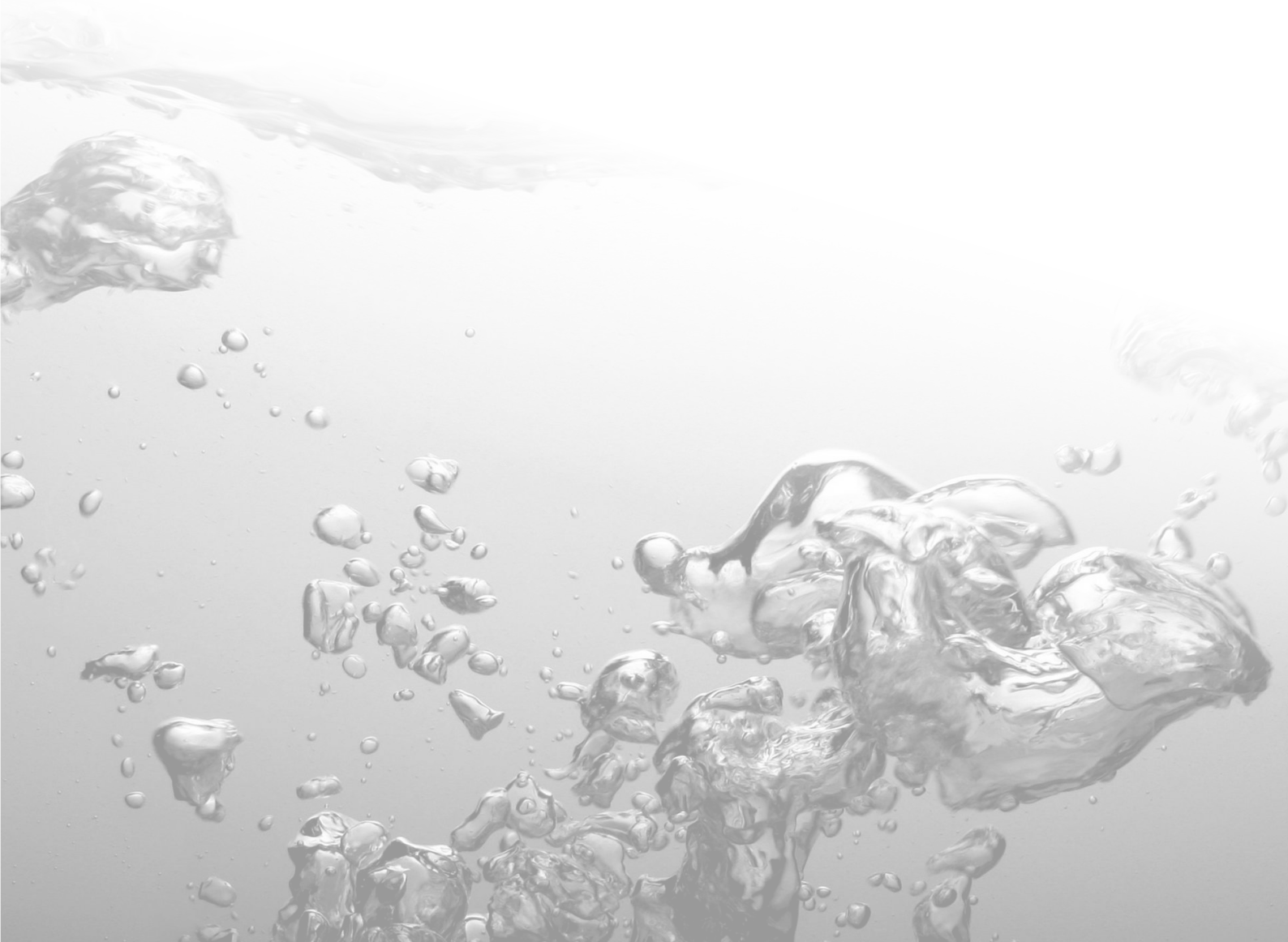
Weights
Magnetic level gauge: Kg. 13,5 approx. (with centre-to-centre 1.000 mm and valve DS NPV flanged DN20 PN16

Spare parts
For routine maintenance are not necessary spare parts.
For valve DS NPV: see from page 1.74 (drawing with components and parts list see page 1.67) of the catalogue relative to the glass level gauges.

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

accessories for magnetic level gauges

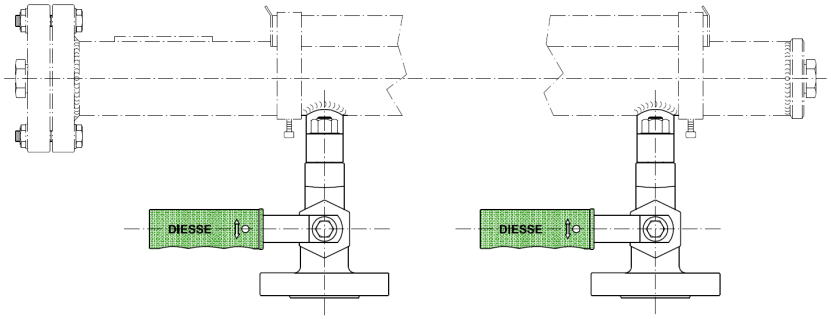


ACCESSORIES FOR MAGNETIC LEVEL GAUGES

The DIESSE magnetic level gauges can be equipped with shut-off cocks, drain cock and vent cock.
The shut-off cocks are connected to the main chamber by special T flanges with stainless steel AISI 316 gaskets.

SHUT OFF COCKS cylindrical plug type

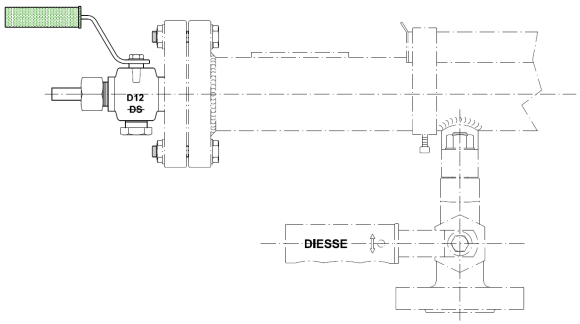
Handling: lever operated with PP handle - Quick 90° closing



Code: GR18

DRAIN COCK cylindrical plug type

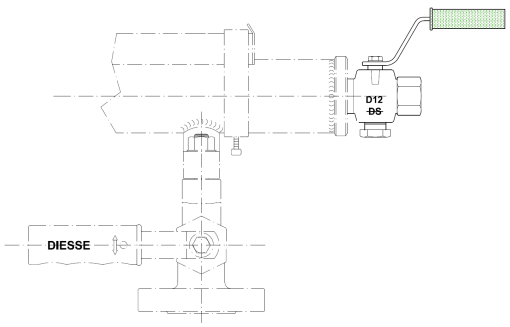
Handling: lever operated with PP handle - Quick 90° closing



Code: D12

VENT COCK cylindrical plug type

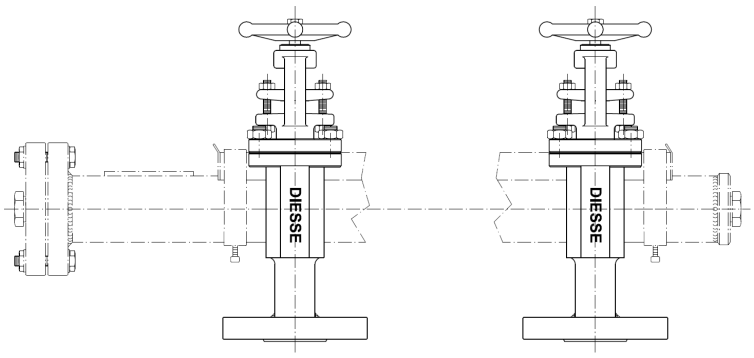
Handling: lever operated with PP handle - Quick 90° closing



Code: D12S

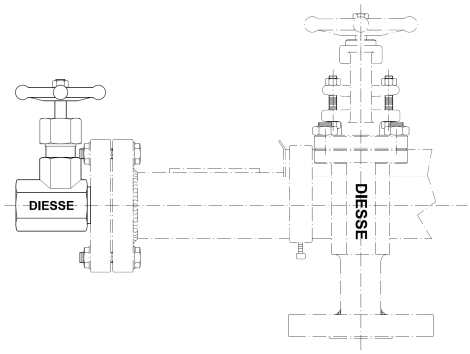
ACCESSORIES FOR MAGNETIC LEVEL GAUGES

SHUT OFF VALVES globe type



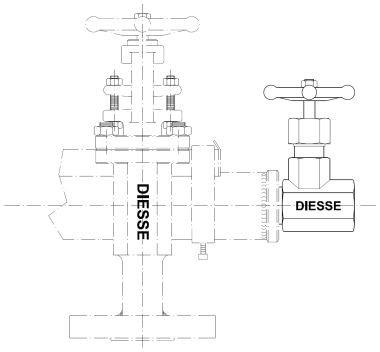
Code: SHV

DRAIN VALVE globe type



Code: DHV

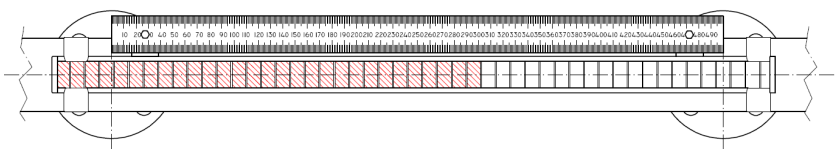
VENT VALVE globe type



Code: DHVS

CALIBRATED SCALE

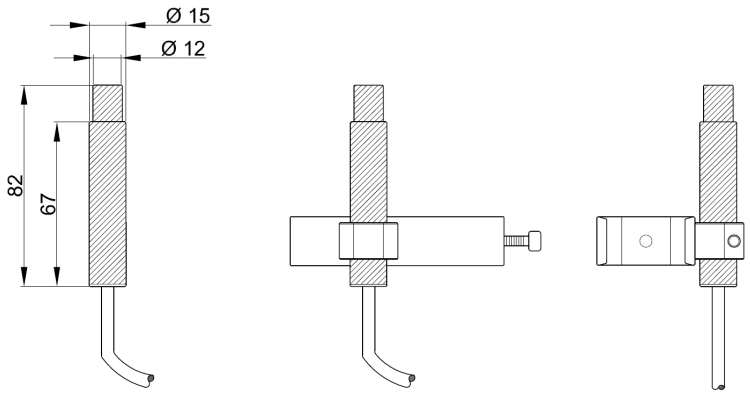
The calibrated scale (millimeters) is in stainless steel, the values are engraved and black coloured.
The standard indication correspond to the centre-to-centre distance of the level gauge.
On request other materials and graduations can be supplied.



Code: VSG

MAGNETIC SWITCH type TIM NSB 1240

Magnetic switches are used to monitor certain limits of the level.
The obtained binary signal can be forwarded to trigger alarms or other controls.

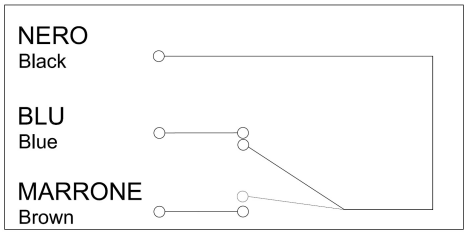


Code: TIM NSB 1240

Technical data:

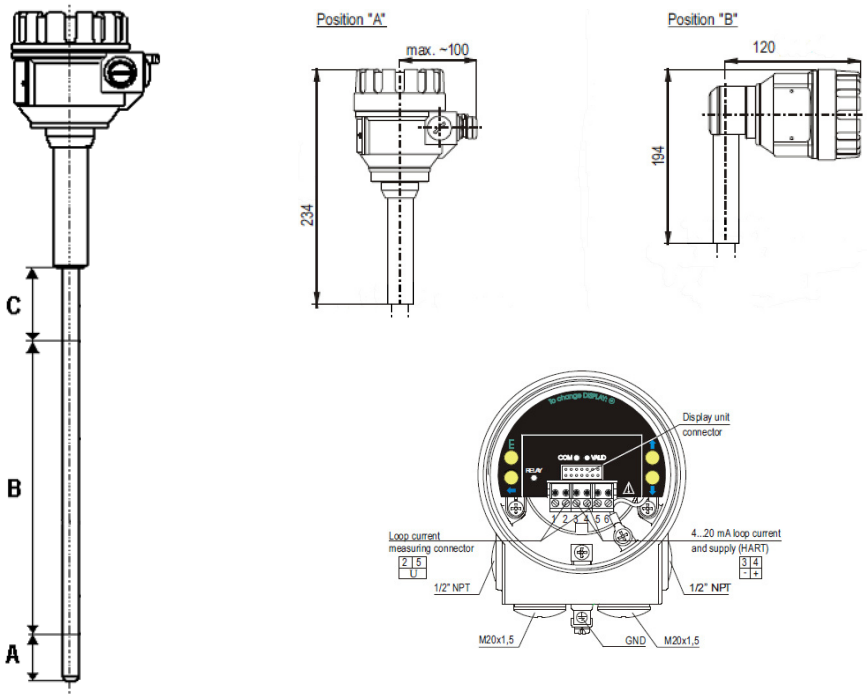
Code	TIM NSB 1240
Contact type	SPDT
Contact behaviour	Bistable
Working	Change-over
Contact material	Fe/Ni with Rodio
Max. power rating	60 VA / 30 W
Max. current rating	0,8 A
Max. voltage rating	220 V
Life time	100 million of controls
Operating frequency	250 imp/s
Repeatability precision	0,1 mm
Impact resistance	30 g / 11 ms
Vibrations resistance	0,35 mm 10-55Hz
Working temperature	-30°C / +160°C
Housing protection	IP 67
Housing material	LAESTRA (SPS) G40
Connection cable	Silicone 3 x 0,75 mmq; Length 3 m Nominal voltage 300 / 500 V Test voltage 2 KV According to table 5 of Standards CEI 20-29

Connection diagram:



ACCESSORIES FOR MAGNETIC LEVEL GAUGES

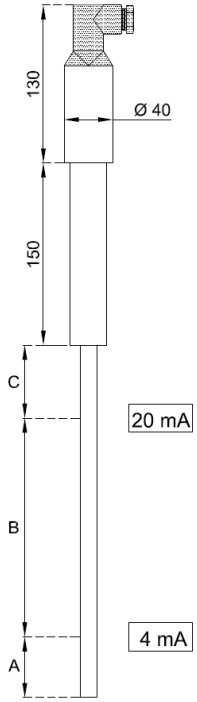
LEVEL TRANSMITTER



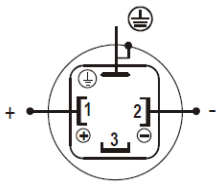
Technical data:

Code	DS LTM-MTU-5- …
Contact type	Magnetostrictive
Measured process value	Liquid level, distance, volume
Housing material	Paint coated aluminium
Tube material	Stainless steel 316 Ti
Measure A	50 mm (Standard) Other measures on request
Measure C	120 mm (Standard) 140 mm (High temperature)
Ambient temperature	-40 … 70°C, with display -25 … 70°C On request: execution for high temperature with thermal insulation
Output	Analogue: 4 ... 20 mA (Limit values: 3,9 … 20,5 mA) On request: with SAP 300 graphic display
Damping time	Adjustable 0 s … 99 s
Error indication	22 mA oppure 3,8 mA or “holding”
Output load	Rt = (Ut-12,5V) / 0,02 A, Ut = Power supply voltage
Power supply	12,5 V - 36 V DC, 2 wires
Electrical protection	Class III
Ingress protection	IP 67
Electric connection	2x M20x1,5 plastic cable glands for 6 … 12 mm + 2x NPT ½” internal thread for cable protective pipe terminal block for 0,5 … 1,5 mm2 (AWG 20 … AWG 15)
Resolution	1 mm
Nonlinearity	± 2 mm or ± 0,02%
Hysteresis	< ± 1 mm
Temperature error	0,04 mm / 10°C (between -25°C … 50°C)
Current output data	Resolution: 2 µA, Accuracy: 10 µA, Temperature error: 200 ppm/°C
Accessories	SAP-300 Plug-in display module

LEVEL TRANSMITTER



Connection diagram:



Technical data:

Code	**DS LTM-MIU-X- …**
Contact type	Magnetostrictive
Measured process value	Liquid level, distance, volume
Tube material	Stainless steel 316 Ti
Measure A	50 mm (Standard) Other measures on request
Measure C	60 mm (Standard) 130 mm (High temperature)
Ambient temperature	-40 … 70°C On request: execution for high temperature with thermal insulation
Output	Analogue: 4 ... 20 mA (Limit values: 3,9 … 20,5 mA) Digital communication: HART® (minimum loop resistance: 250 Ω)
Error indication	Output signal = 22 mA or 3,8 mA
Output load	Rt = (Ut-12,5V) / 0,02 A, Ut = Power supply voltage
Power supply	12,5 V - 36 V, 2 wires
Electrical protection	Class III
Ingress protection	IP 65
Electric connection	Electrical connector DIN 43650
Resolution (on HART® trasmitted value)	1 mm
Nonlinearity (on HART® trasmitted value)	± 2 mm or ± 0,085% F.S. whichever is greater
Hysteresis	± 0,25 mm
Temperature error	0,04 mm / 10°C (between -25°C … 50°C)
Current output data	Resolution: 0,4 µA, Accuracy: 33 µA, Temperature error: 6 ppm/°C

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

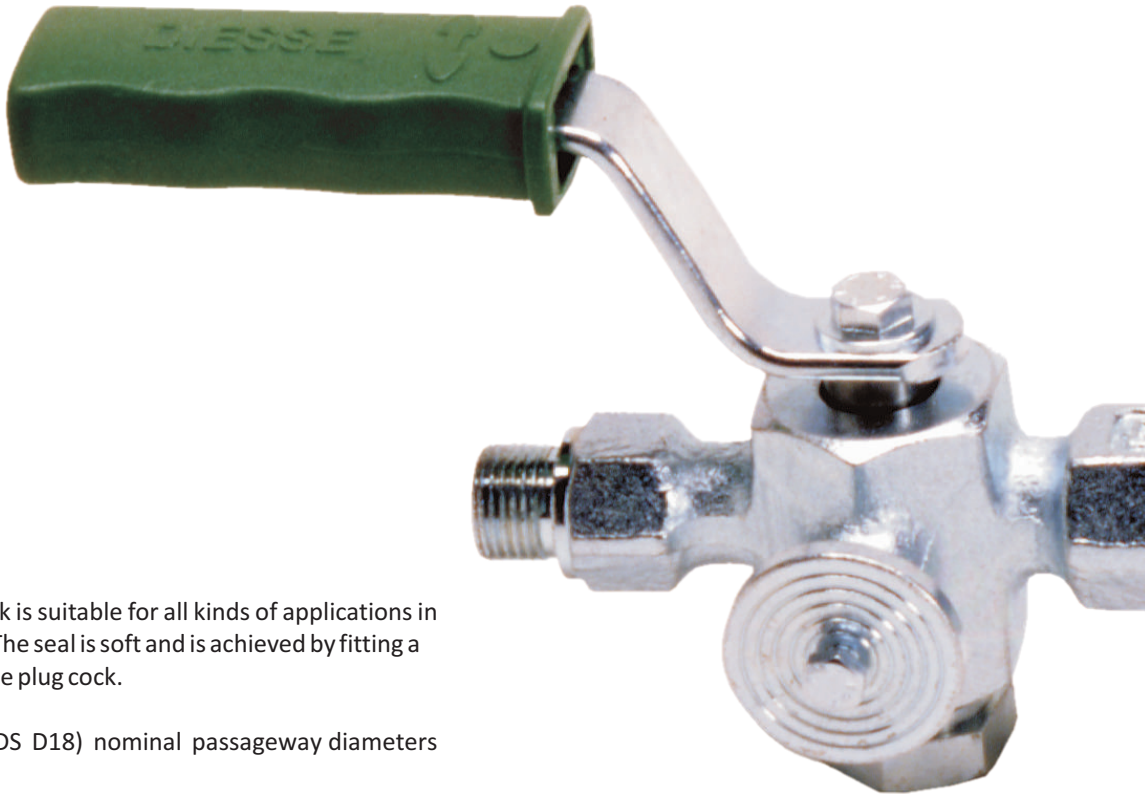
cylindrical plug cocks

- **TYPE DS D12**
- **TYPE DS D18**
- **TYPE DS PM18**

Two ways cylindrical plug cock type DS D12

Two ways cylindrical plug cock type DS D18

Three way cylindrical plug manometer setting valve with control flange type DS PM18



The DIESSE cylindrical plug cock is suitable for all kinds of applications in a number of different sectors. The seal is soft and is achieved by fitting a case between the vessel and the plug cock.

6 mm (DS D12) and 8 mm (DS D18) nominal passageway diameters are available.

The DIESSE manometer setting valve is a three way cylindrical plug cock with control flange (DS PM18) is soft sealing and the ideal product for securely fitting a manometer.

The cock has a flanged connection for this purpose, which must be screwed in so that no loss occurs as a result of incorrect operation (when a control manometer is not connected).

Code

1 Type

DS D12	Two way cylindrical plug cock with 6 mm bore
DS D18	Two way cylindrical plug cock with 8 mm bore
DS PM18	Three way cylindrical plug manometer setting valve with control flange

2 Process connections

Pos. 1: Nominal size	**Pos. 2: Finitura filetto**	**Pos. 3: Pressione nominale**
1/4” or 3/8” or 1/2"	BSP (GAS) or NPT	PN40 or PN160

3 Materials

Pos. 1: Wetted parts		**Pos. 2: Non-wetted parts**		**Pos. 3: Gaskets**	
CS	Carbon steel ASTM A105 galvanized	CS	Carbon steel galvanized	Standard	Graphite
LF2	Carbon steel A105 LF2 galvanized	SS	Stainless steel AISI 316	PF	PTFE
SS	Stainless steel AISI 316L				

Code	**1**	**2**	**3**
E.g.	DS D12	1/2"/BSP/MM/40	CS/CS

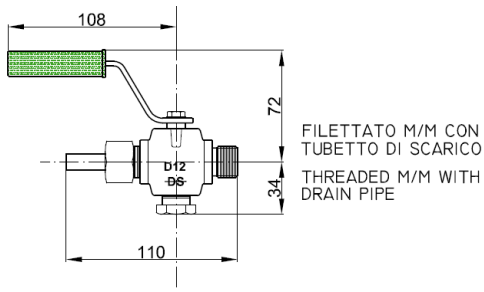
DS DIESSE FLUID CONTROL

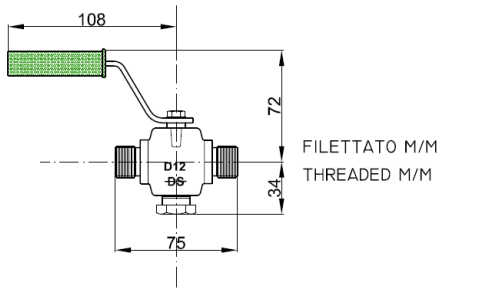
CYLINDRICAL PLUG COCK

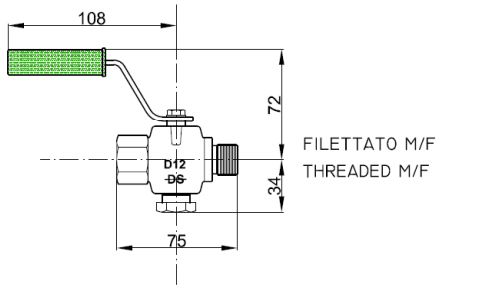
PN40 and PN160

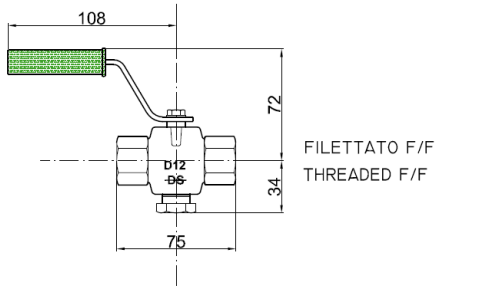
DS D12

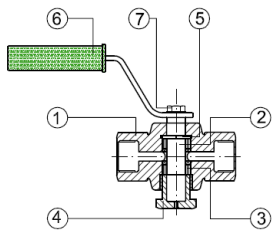
Code: DS D12 - …/…/…/40 - CS/CS











Technical data

Service conditions

Max Pressure: PN40 (Standard)
PN160 (On request) with high pressure sealing
Max Temperature: 300°C with graphite sealing
400°C (On request) with high temperature sealing

Description

The DIESSE cylindrical plug cock DS D12 is suitable for all kinds of applications in a number of different sectors.
The seal is soft and is achieved by fitting a case between the vessel and the plug cock.
It is also fitted as drain and/or vent cock on the glass level gauge gauges DS LG and on magnetic ones DS MG.

Handling

Quick 90° opening/closing

Materials (Standard)

Execution:	CS/CS	SS/CS	SS/SS
Body:	ASTM A105	AISI 316L	AISI 316L
Trim:	AISI 303	AISI 316	AISI 316
Stuffing box:	Carbon steel galvanized	Carbon steel galvanized	AISI 316
Handle:	Carbon steel galvanized	Carbon steel galvanized	AISI 316
Handle cover:	PP	PP	PP
Bolt and washer:	Carbon steel galvanized	Carbon steel galvanized	Stainless steel

Nominal passageway diameter

ND: 6 mm

Gasket

Standard: graphite case with passageway rings in stainless steel 316
Option: PTFE case with passageway rings in stainless steel 316

Process connections

Type:
F x F - threaded female / female
M x F - threaded male / female
M x M - threaded male / male (1/2" BSP: Standard execution with drain pipe)

Threaded connections type (Standard):
BSP (GAS) 1/4" - 3/8" - 1/2"
NPT 1/4" - 3/8" - 1/2"
Options: flanged connections types or welding type

Weight

Cock DS D12: Kg. 0,5 approx.

Spare parts

Case with 2 holes: see page 1.72

Operating instructions

When starting the installation or after the case (3) replacement, before opening the cock, wait until the instrument reaches the room temperature.
After the opening, should any leakage occur, softly tighten the stuffing box (4) several times until the leakage stop.

Instructions for the case removal and replacement

Assumptions:

- The replacement of the cock case requires such specific devices and tools that operations by personnel not specifically trained to do so is not advisable
- The cock has been designed so that dismounting is possible solely by means of specific tools in order to avoid the opening of its part by accident

In the case where the customer decides to proceed with his own personnel ant tools for maintenance operations, it is **IMPORTANT**:

- To envision a skill operator with good technical and maintenance knowledge
- To contact the manufacturer for the best way to proceed and the suitable spare parts
- To be sure that operators wear appropriate individual personal protective means, and all necessary precautions are be taken to avoid accidents

Before starting any operation wait until the instrument reach the room temperature.

Before disassembling be sure that the pipe is not under pressure.

1) Screw off the stuffing box (4) and the handle bolt (7)
2) Remove the handle (6)
3) To extract the cylindrical plug (2), by a soft extension (best a wooden one) gently beat on it several times paying attention that it does not fall off.
   Any scrape would compromise the cock sealing.
4) Clean the components with no-abrasive substances

Assembling:

1) Insert the cylindrical plug (2) into the case (3) until it blocks against the split ring (5)
2) Insert the case (3) in the cock body (1) utilising the guide
3) Fix the handle (6) and gently tighten the stuffing box (4)

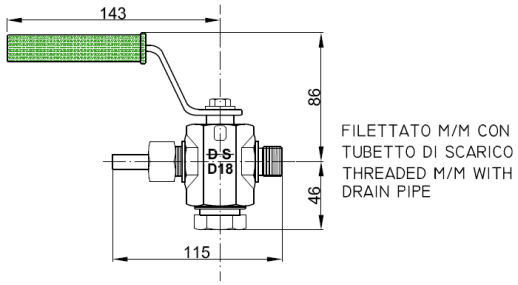
DS DIESSE FLUID CONTROL

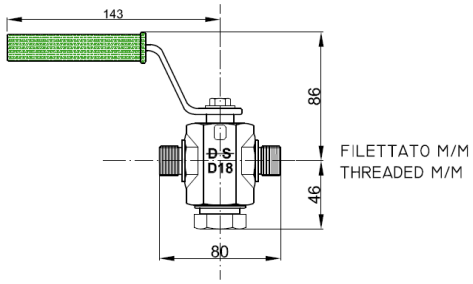
CYLINDRICAL PLUG COCK

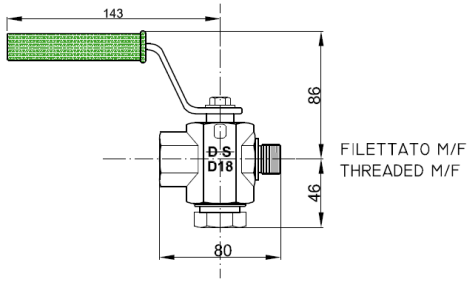
PN40 and PN160

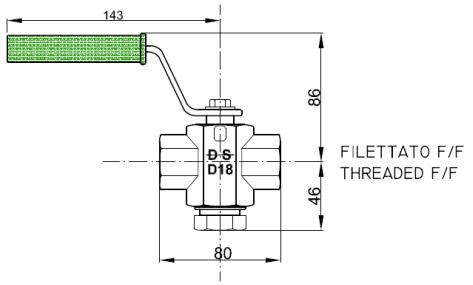
DS D18

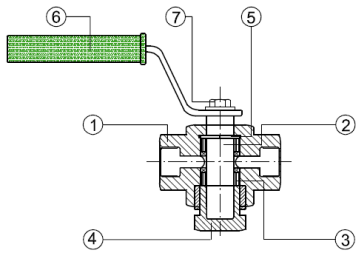
Code: DS D18 - .../.../.../40 - CS/CS











Technical data

Service conditions

Max Pressure: PN40 (Standard)
PN160 (On request) with high pressure sealing
Max Temperature: 300°C with graphite sealing
400°C (On request) with high temperature sealing

Description

The DIESSE cylindrical plug cock DS D18 is suitable for all kinds of applications in a number of different sectors.
The seal is soft and is achieved by fitting a case between the vessel and the plug cock.

Handling

Quick 90° opening/closing

Materials (Standard)

Execution:	CS/CS
Body:	ASTM A105
Trim:	AISI 303
Stuffing box:	Carbon steel galvanized
Handle:	Carbon steel galvanized
Handle cover:	PP
Bolt and washer:	Carbon steel galvanized

Option: different materials available

Nominal passageway diameter

ND: 8 mm

Gasket

Standard: graphite case with passageway rings in stainless steel 316
Option: PTFE case with passageway rings in stainless steel 316

Process connections

Type:
F x F - threaded female / female
M x F - threaded male / female
M x M - threaded male / male (1/2" BSP: Standard execution with drain pipe)

Threaded connections type (Standard):

BSP (GAS)	1/2"
NPT	1/2"

Options: flanged connections types or welding type

Weight

Cock DS D18: Kg. 0,9 approx.

Spare parts

Case with 2 holes: see page 1.72

Operating instructions

When starting the installation or after the case (3) replacement, before opening the cock, wait until the instrument reaches the room temperature.
After the opening, should any leakage occur, softly tighten the stuffing box (4) several times until the leakage stop.

Instructions for the case removal and replacement

Assumptions:

- The replacement of the cock case requires such specific devices and tools that operations by personnel not specifically trained to do so is not advisable
- The cock has been designed so that dismounting is possible solely by means of specific tools in order to avoid the opening of its part by accident

In the case where the customer decides to proceed with his own personnel ant tools for maintenance operations, it is **IMPORTANT**:

- To envision a skill operator with good technical and maintenance knowledge
- To contact the manufacturer for the best way to proceed and the suitable spare parts
- To be sure that operators wear appropriate individual personal protective means, and all necessary precautions are be taken to avoid accidents

Before starting any operation wait until the instrument reach the room temperature.

Before disassembling be sure that the pipe is not under pressure.

1) Screw off the stuffing box (4) and the handle bolt (7)
2) Remove the handle (6)
3) To extract the cylindrical plug (2), by a soft extension (best a wooden one) gently beat on it several times paying attention that it does not fall off.
   Any scrape would compromise the cock sealing.
4) Clean the components with no-abrasive substances

Assembling:

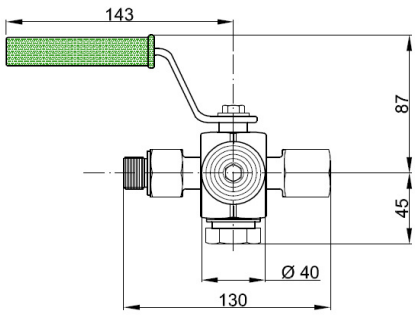
1) Insert the cylindrical plug (2) into the case (3) until it blocks against the split ring (5)
2) Insert the case (3) in the cock body (1) utilising the guide
3) Fix the handle (6) and gently tighten the stuffing box (4)

DS DIESSE FLUID CONTROL

CYLINDRICAL PLUG MANOMETER SETTING VALVE PN40

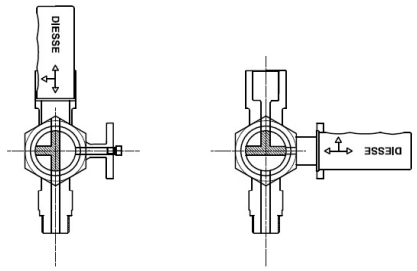
DS PM18

Code: DS PM18 - …/…/…/40 - CS/CS



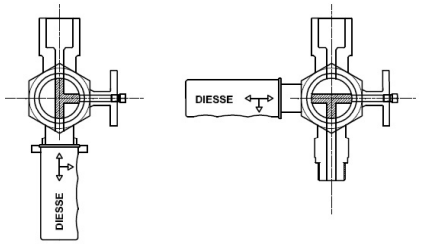
POSIZIONE OPERATIVA
WORKING POSITION

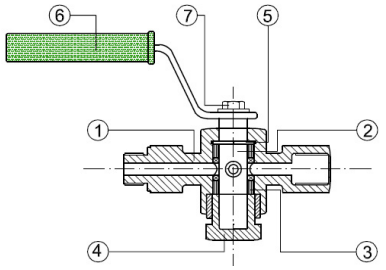
POSIZIONE DI CHIUSURA
SHUT-OFF POSITION



POSIZIONE DI PROVA
TEST POSITION

POSIZIONE DI SFIATO
VENT POSITION





Technical data

Service conditions
Max Pressure: PN40
Max Temperature: 300°C

Description
The DIESSE manometer setting valve DS PM18 is a cylindrical plug cock with control flange.
It is suitable for the manometers installation.
It has a little flange provided with a screw that avoids losses when a control manometer is not connected.
The seal is soft and is achieved by fitting a case between the vessel and the plug cock.

Handling
Quick 90° opening/closing

Materials (Standard)

Execution:	CS/CS
Body:	ASTM A105
Trim:	AISI 303
Stuffing box:	Carbon steel galvanized
Handle:	Carbon steel galvanized
Handle cover:	PP
Bolt and washer:	Carbon steel galvanized

Option: different materials available

Nominal passageway diameter
ND: 8 mm

Nominal passageway diameter for control manometer
ND: 5 mm

Gasket
Standard: graphite case with passageway rings in stainless steel 316
Option: PTFE case with passageway rings in stainless steel 316

Process connections
Type:
M x F - threaded male / female

Threaded connections type (Standard):
BSP (GAS) 3/8" - 1/2"
Options: connections NPT threaded, welding type or flanged type

Weight
Cock DS PM18: Kg. 1,2 approx.

Spare parts
Case with 3 holes: see page 1.72

Operating instructions
When starting the installation or after the case (3) replacement, before opening the cock, wait until the instrument reaches the room temperature.
After the opening, should any leakage occur, softly tighten the stuffing box (4) several times until the leakage stop.

Instructions for the case removal and replacement

Assumptions:
- The replacement of the cock case requires such specific devices and tools that operations by personnel not specifically trained to do so is not advisable
- The cock has been designed so that dismounting is possible solely by means of specific tools in order to avoid the opening of its part by accident

In the case where the customer decides to proceed with his own personnel ant tools for maintenance operations, it is **IMPORTANT**:

- To envision a skill operator with good technical and maintenance knowledge
- To contact the manufacturer for the best way to proceed and the suitable spare parts
- To be sure that operators wear appropriate individual personal protective means, and all necessary precautions are be taken to avoid accidents

Before starting any operation wait until the instrument reach the room temperature.

Before disassembling be sure that the pipe is not under pressure.
1) Screw off the stuffing box (4) and the handle bolt (7)
2) Remove the handle (6)
3) To extract the cylindrical plug (2), by a soft extension (best a wooden one) gently beat on it several times paying attention that it does not fall off.
   Any scrape would compromise the cock sealing.
4) Clean the components with no-abrasive substances

Assembling:
1) Insert the cylindrical plug (2) into the case (3) until it blocks against the split ring (5)
2) Insert the case (3) in the cock body (1) utilising the guide
3) Fix the handle (6) and gently tighten the stuffing box (4)

DS DIESSE FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

blow down valves

- WITH LEVER
- WITH PNEUMATIC ACTUATOR

Blow down valve with lever and adjustment handwheel

Blow down valve with pneumatic actuator and safety handwheel

The main function of these valves is to drain mud in hydraulic circuits.

DIESSE blow down valves must be installed downstream of a shut-off globe valve suitable for the intended use of the system.

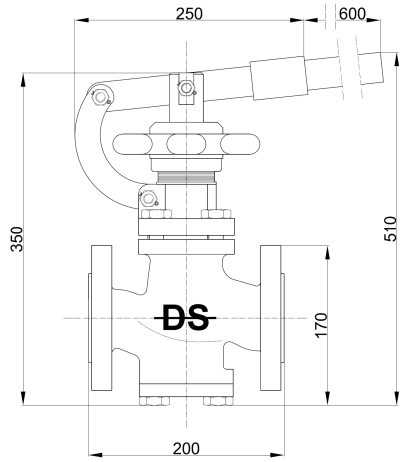
The seal is metal and, thanks to the tempered disc and stellited seat, the valve can be used with high temperature steam.

DS DIESSE FLUID CONTROL

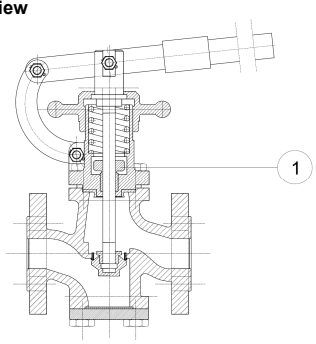
BLOW DOWN VALVE DN40 PN40

DS BDV

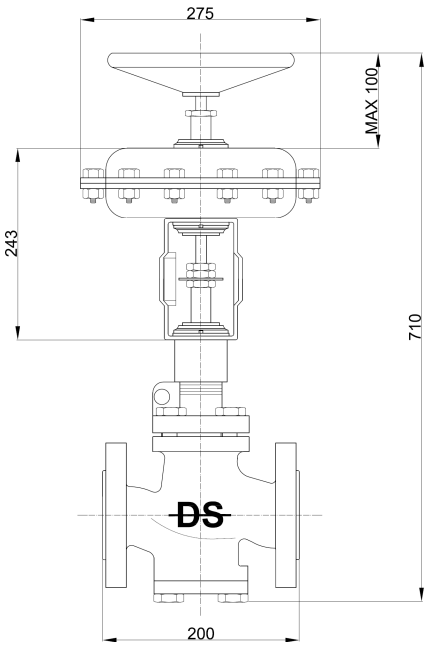
Code: DS BDV - 40/40 - WCB/CS



Sectional view



Code: DS BDVPA - 40/40 - WCB/CS



Technical data

Service conditions
Max pressure: PN40
Max temperature: 400°C

Description
The main function of these valves is to drain mud in hydraulic circuits.
DIESSE blow down valves must be installed downstream of a shut-off globe valve suitable for the intended use of the system. The seal is metal and, thanks to the tempered disc and stellited seat, the valve can be used with high temperature steam.
On request the valve can be supplied with a pneumatic actuator.

Handling
Quick on/off operation by lever or by pneumatic actuator

Materials (Standard)

Execution:	CS/CS
Body:	ASTM A216 WCB
Bonnet:	ASTM A216 WCB
Lower cover:	Carbon steel galvanized
Stem:	ASTM F6A
Plug:	ASTM F6A
Seat:	AISI 410A con riporto in stellite Grado 6
Packing:	Graphite

Flange-to-flange distance measure

L = 200 mm

Process connections
Standard flanges: UNI DN40 PN40
Option: on request it is possible to reduce the flanges' diameter (UNI or ANSI) maintaining the same body and flange-to-flange distance measure

Feeding pneumatic actuator
Air pressure: 35-40 psi

Weights
Valve DS BDV: Kg. 20,0 approx.
Valve DS BDVPA: Kg. 23,0 approx.

Operating instructions

Caution: the valve can reach high temperatures

- The opening and closing operation of the valve or the screws tightening requires such specific devices and tools that operation by personnel not specifically trained to do so is not advised.
- During the above mentioned operations, operators must wear appropriate individual personal protective means, and all necessary precautions must be taken to avoid accidents.
- The valve has been designed to be disassembled with special tools only, to avoid the opening of its part by accident.

The DIESSE blow down valve must be installed following the direction indicated by the arrow on the body.
We recommend to install the blow down valve downstream of a streamlined flow valve.
To reach the better result we recommend to open very quickly the valve so that the thicker mud on the floor can be removed from water. The manual type enables to block the lever on the preferred open position by means of an adjustment handwheel.

Should any leakage occur when the valve is off, please check that the adjustment handwheel is completely unscrewed.

As the closing spring is very powerful, in case a pneumatic actuator is installed, it is recommended to install a control valve on the air exit to check and slow the plug air emptying.

Should any leakage occur from the packing, slighly screw the gland (1) (1/4 turn at a time, until leakage stops) by means of a 5 mm metal rod.
When the stuffing box completes the adjustment, it is possible to insert a graphite braid to temporary restore the packing.
The packing replacement should be done by the Manufacturer because the spring ejection could cause injury to a no-skilled involved operator. The same is recommended for the plug and seat replacements.

It is also recommended, before any valve usage, to assure a careful cleaning of the equipment by checking the presence of welding residual or iron scraps. They could damage the plug and the seat reducing their tight. If any scrape is noted, please contact DIESSE to agree parts replacements.

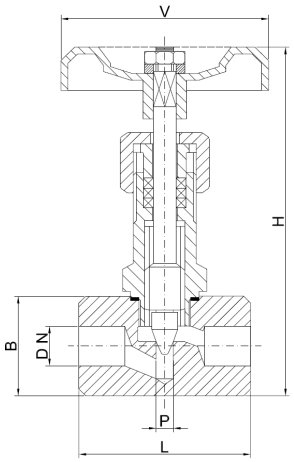
In the case of installation of the valve near the passage of personnel, it is advisable to signal the presence of the extension tube of the handle by painting of an intense colour, or unscrew it after each use.

DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

needle valves

NEEDLE VALVE Class 3000 psi (Light type)



Code:
Light type: DS NV 3000
Heavy type: DS NV HB 3000

Execution	CS	SS
Body	ASTM A105 galvanized	AISI 316L
Bonnet	ASTM A105 galvanized	AISI 316
Needle	AISI 316L	AISI 316L
Stem	AISI 316L	AISI 316L
Packing	PTFE	PTFE
Handwheel	Stamped steel	Stamped steel

DN	L	P	B	V	H	Weight
1/4"	60	5	30	70	115	0,6
3/8"	60	6	30	70	115	0,6
1/2"	60	6	30	70	115	0,6
3/4"	70	7,5	35	70	118	0,7
1"	75	9	40	80	136	1,0
1" ¼	90	11,5	50	125	165	1,2
1" ½	100	16	60	125	175	2,7
2"	120	19	70	125	185	4,1

Standard execution:
- Moving needle
- Threaded connections BSP (GAS) F/F or NPT F/F

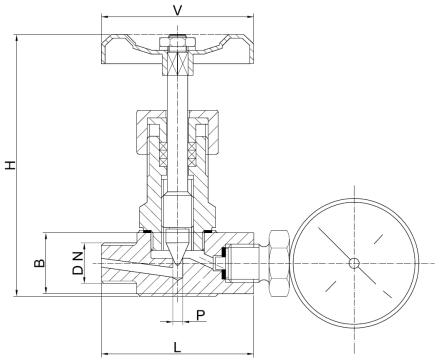
On request:
- Class 6000 psi
- Fixed needle
- Welding connections SW or BW
- Threaded connections BSP (GAS) M/M or NPT M/M
- Flanged connections UNI or ANSI
- Drain screw
- Calibrated opening index
- Bakelite handwheel or bar handwheel
- Graphite packing for high temperature

NEEDLE VALVE Class 3000 psi (Heavy type)

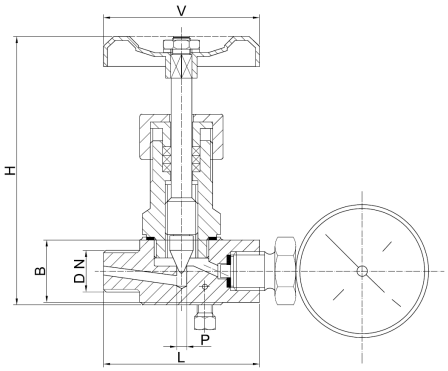
Execution	CS	SS
Body	ASTM A105 galvanized	AISI 316/L
Bonnet	ASTM A105 galvanized	AISI 316
Needle	F6 / AISI 410	AISI 316/L
Stem	F6 / AISI 410	AISI 316
Packing	PTFE	PTFE
Handwheel	Stamped steel	Stamped steel

DN	L	P	B	V	H	Weight
1/4"	61	5	30	70	115	0,6
3/8"	61	6	30	70	115	0,6
1/2"	70	8	35	70	118	0,8
3/4"	78	9	40	80	135	1,1
1"	90	11	50	100	170	2,0
1" ¼	100	15	60	100	180	2,5
1" ½	130	19	70	125	195	3,0
2"	140	22	80	150	210	3,5

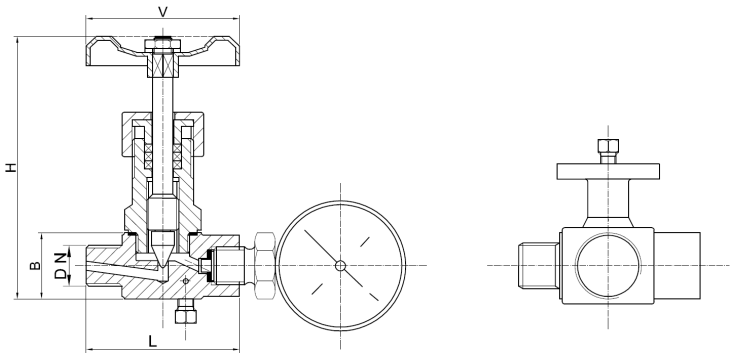
MANOMETER SETTING NEEDLE VALVE Class 3000 psi



Two way
Code: DS NV M2S 3000



Two way with zero setting screw
Code: DS NV M2P 3000



Three way with control flange and zero setting screw
Code: DS NV M3F 3000

Execution	CS	SS
Body	ASTM A105 galvanized	AISI 316L
Bonnet	ASTM A105 galvanized	AISI 316
Needle	AISI 316L	AISI 316L
Stem	AISI 316L	AISI 316L
Packing	PTFE	PTFE
Handwheel	Stamped steel	Stamped steel

DN	L	P	B	V	H	Weight
1/4"	60	3,5	30	70	115	0,6
3/8"	60	4	30	70	115	0,6
1/2"	60	4	30	70	115	0,6

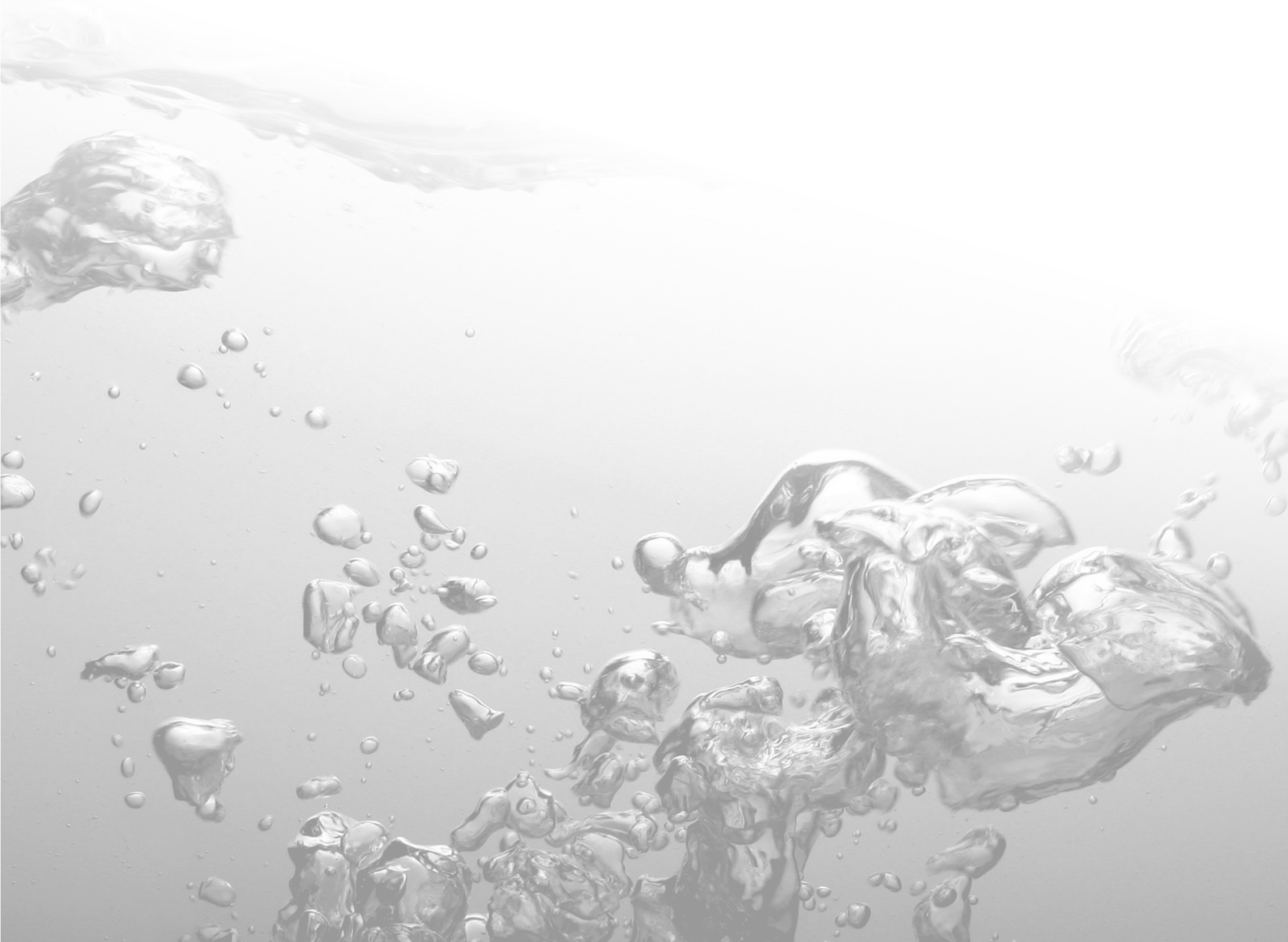
Standard execution:
- Moving needle
- Threaded connections BSP (GAS) M/F or NPT M/F

On request:
- Class 6000 psi
- Fixed needle
- Welding connections SW or BW
- Bakelite handwheel or bar handwheel
- Graphite packing for high temperature

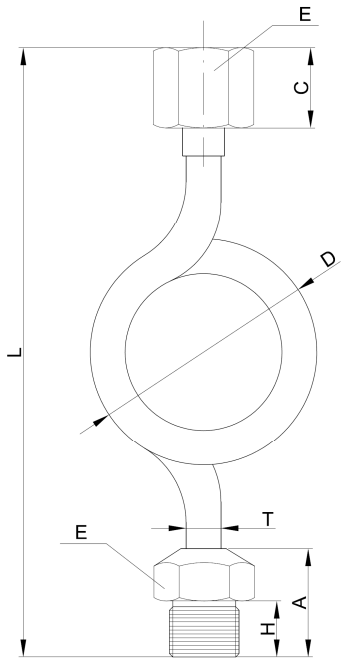
DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

coils



COIL with threaded connections male / female (revolving)



Code:
Chromed steel: DS TC CS
Stainless steel: DS TC SS
Copper: DS TC CU

Standard execution:
- Size: 1/4" - 3/8" - 1/2"
- 180° execution
- Material: chromed steel, stainless steel (AISI 304) and copper
- Threaded connections BSP (GAS) M/F
- Revolving female

On request:
- 90° execution
- Material: Stainless steel (AISI 316)

Chromed steel

DN	L	T	D	A	C	H	E
1/4"	140	6x8	60	20	14	12	17
3/8"	165	7x10	65	29	20	14	22
1/2"	180	7x10	65	33	23	16	24

Stainless steel (AISI 304)

DN	L	T	D	A	C	H	E
1/4"	155	5x7	60	23	17	12	17
3/8"	195	7x10	65	30	20	14	22
1/2"	195	7x10	65	34	24	16	24

Copper

DN	L	T	D	A	C	H	E
1/4"	150	6x8	70	24	14	12	17
3/8"	160	7x10	65	23	18	14	22
1/2"	170	7x10	65	30	19	16	26

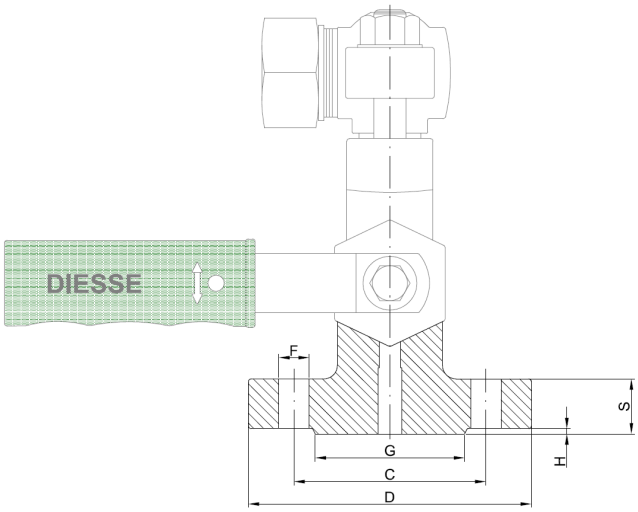
DS DIESSE
FLUID CONTROL

Product origin
Design & Manufacturing
ITALY

Flange dimensions

DIESSE
FLUID CONTROL

DIMENSIONI FLANGE / FLANGE DIMENSIONS



DIMENSIONI DI ACCOPPIAMENTO (IN MM) DELLE FLANGE PER PRESSIONI NOMINALI / CONNECTING DIMENSIONS (IN MM) OF FLANGES FOR NOMINAL PRESSURES

UNI PN 16							
Size	D	S	G	H	n°	F	C
DN 15	95	14	45	2	4	14	65
DN 20	105	16	58	2	4	14	75
DN 25	115	16	68	2	4	14	85
DN 32	140	16	78	2	4	18	100
DN 40	150	16	88	3	4	18	110
DN 50	165	18	102	3	4	18	125

UNI PN 25 - 40							
Size	D	S	G	H	n°	F	C
DN 15	95	16	45	2	4	14	65
DN 20	105	18	58	2	4	14	75
DN 25	115	18	68	2	4	14	85
DN 32	140	18	78	2	4	18	100
DN 40	150	18	88	3	4	18	110
DN 50	165	20	102	3	4	18	125

UNI PN 64							
Size	D	S	G	H	n°	F	C
DN 15	105	20	45	2	4	14	75
DN 20	130	22	58	2	4	18	90
DN 25	140	24	65	2	4	18	100
DN 32	155	24	75	2	4	22	110
DN 40	170	26	85	3	4	22	125
DN 50	180	26	95	3	4	22	135

UNI PN 100 - 160							
Size	D	S	G	H	n°	F	C
DN 15	105	20	45	2	4	14	75
DN 20	130	22	58	2	4	18	90
DN 25	140	24	65	2	4	18	100
DN 32	155	24	75	2	4	22	110
DN 40	170	26	85	3	4	22	125
DN 50	195	28	95	3	4	25	145

ANSI 150							
Size	D	S	G	H	n°	F	C
½"	89	11,1	34,9	1,6	4	16	60,3
¾"	98,5	12,7	42,9	1,6	4	16	69,9
1"	108	14,3	50,8	1,6	4	16	79,4
1 ¼"	117,5	15,9	63,5	1,6	4	16	88,9
1 ½"	127	17,5	73	1,6	4	16	98,4
2"	152,5	19,1	92,1	1,6	4	16	120,7

ANSI 300							
Size	D	S	G	H	n°	F	C
½"	95,5	14,3	34,9	1,6	4	16	66,7
¾"	117,5	15,9	42,9	1,6	4	19	82,5
1"	124	17,5	50,8	1,6	4	19	88,9
1 ¼"	133,5	19	63,5	1,6	4	19	98,4
1 ½"	155,5	20,7	73	1,6	4	22,5	114,3
2"	165	22,2	92,1	1,6	8	19	127

ANSI 600							
Size	D	S	G	H	n°	F	C
½"	95,5	20,65	34,9	6,35	4	16	66,7
¾"	117,5	22,25	42,9	6,35	4	19	82,5
1"	124	23,85	50,8	6,35	4	19	88,9
1 ¼"	133,5	26,95	63,5	6,35	4	19	98,4
1 ½"	155,5	28,55	73	6,35	4	22,5	114,3
2"	165	31,75	92,1	6,35	8	19	127

ANSI 900 - 1500							
Size	D	S	G	H	n°	F	C
½"	120,5	28,55	34,9	6,35	4	22,5	82,5
¾"	130	31,75	42,9	6,35	4	22,5	88,9
1"	149,5	34,95	50,8	6,35	4	25,5	101,6
1 ¼"	159	34,95	63,5	6,35	4	25,5	111,1
1 ½"	178	38,15	73	6,35	4	28,5	123,8
2"	216	44,45	92,1	6,35	8	25,5	165,1