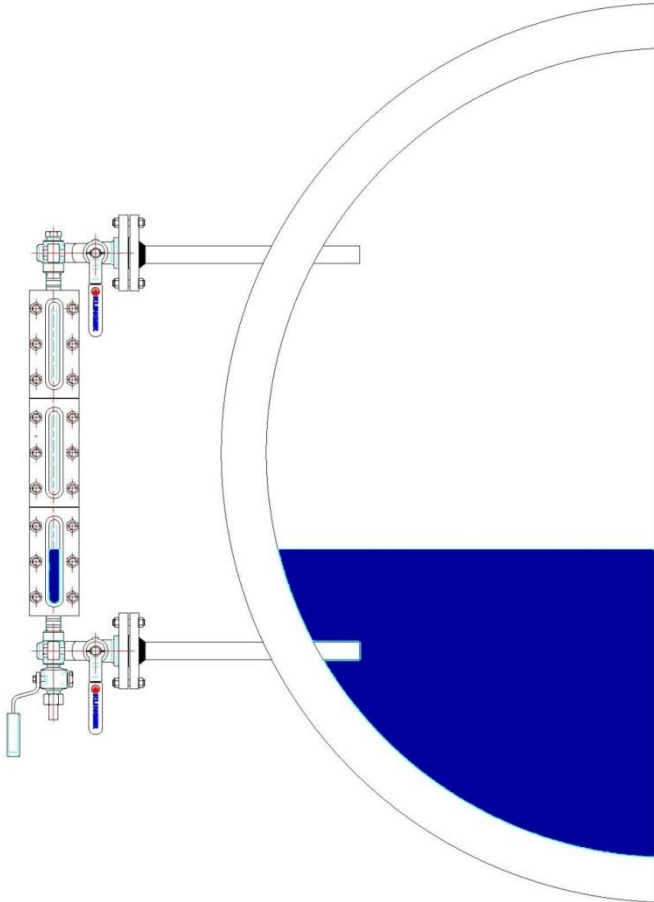




**KLINGER ITALY**

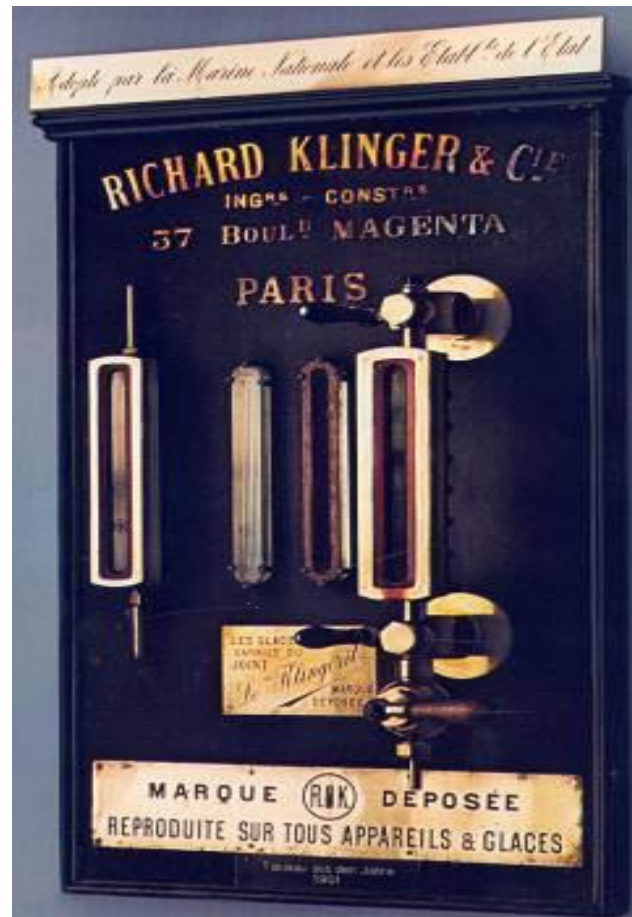
**GLASS LEVEL GAUGES**



## GLASS LEVEL GAUGES

Everywhere liquid  
levels have to be  
directly read and defined

Glass level gauges were invented and patented in 1888 by Richard Klinger, the founder of the Group of independent KLINGER companies



The first great step into business was at the world exhibition 1901 in Paris

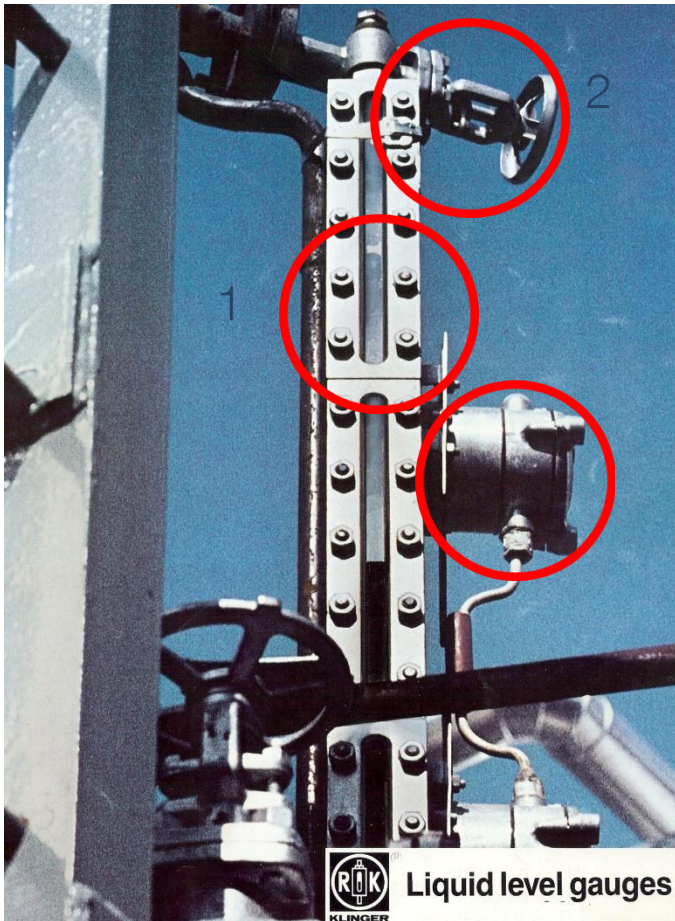
Original KLINGER Level Gauges are used from many years!



## MAIN ADVANTAGES

- 1 – Direct view of the fluid level
- 2 – Suitable for steam application
- 3 – No electronic signal, no fault
- 4 – Cheaper solution to check the fluid level
- 5 – Easy maintenance
- 6 – Very long life in service

## MAIN COMPONENTS



1 – BODY LEVEL GAUGES

With Glasses (Reflex or Transparent)

2 – VALVES OR COCKS

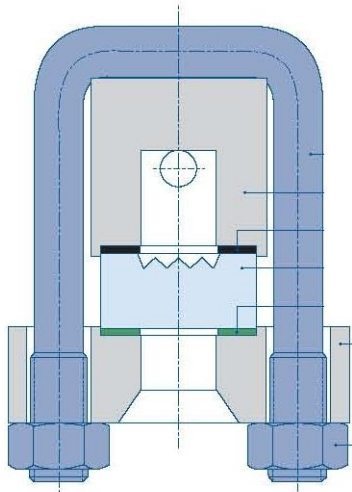
To isolate the Level Gauge body  
from the utility

3 – ACCESSORIES

Illuminator Unit  
No frost Device  
Mica Shields  
Heating Tracing

## REFLEX

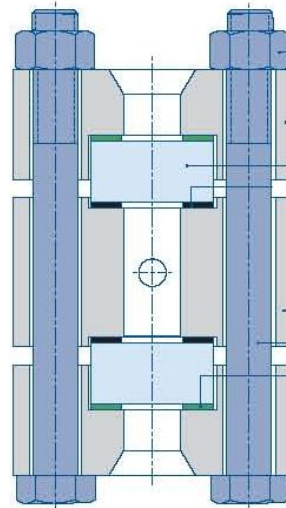
(process & steam)



Different Refraction  
with Liquid and Gas  
(or steam)

## TRANSPARENT

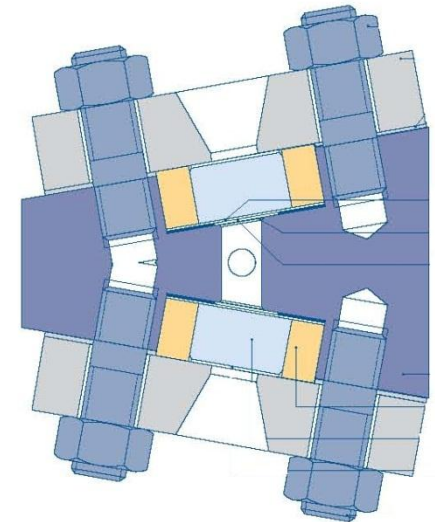
(process & steam)



Direct vision through the  
two glasses (back  
illumination available)

## BICOLOUR

(steam)



Different colours between  
Water (Green) and Steam  
(Red). Back illuminated.

## PROCESS APPLICATION

REFLEX:

WATER, CLEAN LIQUID AND COLOURED  
FLUID

TRANSPARENT:

VISCOUS, DIRTY AND UNCOLOURED  
FLUID, INTERFACE SERVICE AND  
AGGRESSIVE FLUID (PROTECTED GLASS)

## STEAM APPLICATION

REFLEX

UP TO 32 bar

TRANSPARENT

UP TO 120 bar

BICOLOUR

UP TO 225 bar



## Range of Production – PROCESS application

<b>PROCESS APPLICATION FOR GLASS LEVEL GAUGES</b>						
<b>Level Gauge Type</b>	<b>Max Working Pressure (Bar)</b>	<b>Max Working Temperature (C°)</b>	<b>Klinger Level Gauge Model</b>	<b>Klinger Gauge Valve Model</b>		<b>Klinger Level Gauge RATING / Max Pressure</b>
<b>REFLEX</b>	25	400	<b>R 25</b>	<b>DG</b>	<b>Offset RAV</b>	PN 25 / ANSI 150
	100	400	<b>R 100</b>	<b>DG</b>	<b>Offset RAV</b>	PN 100 / ANSI 600
	160	400	<b>R 160</b>	<b>DG</b>	<b>Offset RAV</b>	PN 160 / ANSI 900
	250	400	<b>R 250</b>		<b>Offset RAV</b>	PN 250 / ANSI 1500
	63	400	<b>UOR Large Chamber</b>	<b>DG</b>	<b>Offset RAV</b>	PN 63 / ANSI 400
	400	120	<b>A 400</b>	<b>DVK2.IT</b>		PN 400 / ANSI 2500
<b>TRANSPARENT</b>	16	185	<b>R-D (glass)</b>	<b>D</b>		PN 16
	50	400	<b>T 50</b>	<b>DG</b>	<b>Offset RAV</b>	PN 50 / ANSI 300
	100	400	<b>T 100</b>	<b>DG</b>	<b>Offset RAV</b>	PN 100 / ANSI 600
	160	400	<b>T 160</b>	<b>DG</b>	<b>Offset RAV</b>	PN 160 / ANSI 900
	160	400	<b>T 160-XS</b>	<b>DG</b>	<b>Offset RAV</b>	PN 160 / ANSI 900
	250	400	<b>T 250</b>		<b>Offset RAV</b>	PN 250 / ANSI 1500
	63	400	<b>UOT Large Chamber</b>	<b>DG</b>	<b>Offset RAV</b>	PN 63 / ANSI 400
<b>WELD-PAD</b>	100	400	<b>UWR / UWT</b>	<b>Not Applicable</b>		PN 100 / ANSI 600
	100	400	<b>USR / UST</b>	<b>Not Applicable</b>		PN 100 / ANSI 600

## Range of Production – STEAM application

<b>STEAM APPLICATION FOR GLASS LEVEL GAUGES</b>						
<b>Level Gauge Type</b>	<b>Max Working Pressure (Bar) SATURATED STEAM</b>	<b>Max Working Temperature (C°)</b>	<b>Klinger Level Gauge Model</b>	<b>Klinger Gauge Valve Model</b>		
<b>REFLEX</b>	32	239	<b>K</b>	<b>D</b>		
	20	215	<b>R 25</b>	<b>D</b>		
	22	219	<b>R 100</b>	<b>D</b>		
	32	239	<b>R 160</b>	<b>D</b>		
<b>TRANSPARENT</b>	10	185	<b>R-D (glass)</b>	<b>D</b>		
	15	202	<b>T 50</b>	<b>D</b>		
	30	235	<b>T 100</b>	<b>D</b>		
	40	252	<b>T 160</b>	<b>D</b>	<b>DA</b>	
	40	252	<b>T 160-XS</b>	<b>D</b>	<b>DA</b>	
	60	270	<b>T 160-XS</b>	<b>DA</b>		
	85	298	<b>T 85</b>	<b>DA</b>	<b>DVK2.IT</b>	<b>Offset RAV 957 Seal welded</b>
	85	298	<b>TA 120</b>	<b>DA</b>		
	120	323	<b>TA 120</b>	<b>DVK2.IT</b>		
<b>BICOLOUR</b>	225		<b>KTA - 225</b>	<b>DVK2</b>		
	180	356	<b>KTA</b>	<b>DVK2</b>		
	75	291	<b>KT - 75</b>	<b>DVK 2</b>	<b>DA</b>	
	25	225	<b>KT - 25</b>	<b>D</b>	<b>DA</b>	

## MATERIALS

FS/H CARBON STEEL

- ASTM A105N as standard
- LF2 available for low temperature service at - 46°C

M/H WETTED PART STAINLESS STEEL

OTHERS IN CARBON STEEL

- AISI 316L and ASTM A105N as standard

M STAINLESS STEEL

- AISI 316L as standard

ALLOY, PLASTIC OR OTHER MATERIALS ARE AVAILABLE

## MATERIALS

GASKET in contact with media

- Klinger REINFORCED GRAPHITE type PSM (Single tang insert in 316) or for high pressure “PDM” (Double tang inserts in 316)
- PTFE and other material on request

ORIGINAL GAUGE KLINGER GLASSES

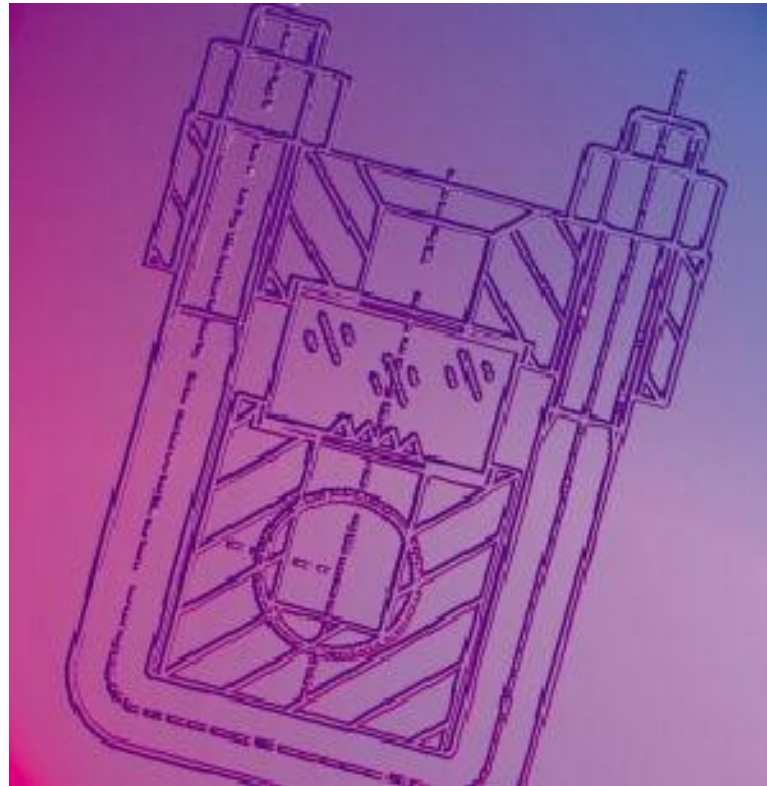
- “Extra-hard” borosilicate glass, according to DIN 7081
- NEW OPTION: ANTISTICK GLASSES

VALVE AND COCKS

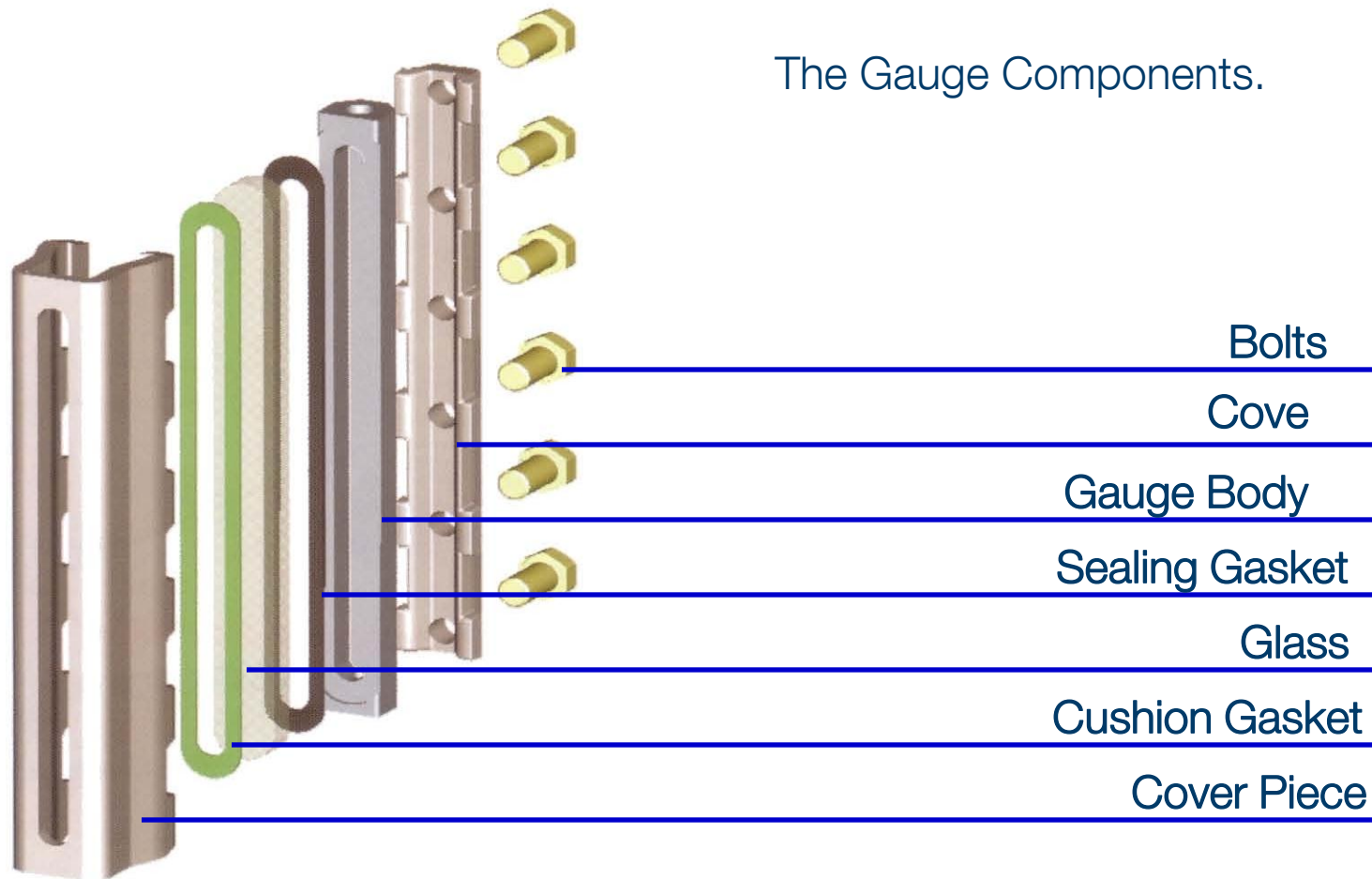
- FS/H , M/H, M and other on request.

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# REFLEX LEVEL GAUGES



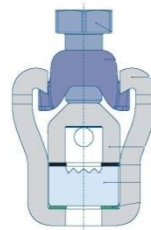
## REFLEX Gauges suitable for STEAM and PROCESS applications



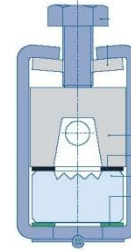
## REFLEX MODELS

- K → PN40 / 32 Bar for steel
- R25 → PN25
- R50 → PN50 (NEW)
- R100 → PN100
- R160 → PN160
- R250 → PN250
- UWR → PN100 (Weld-On)
- USR → PN100 (Weld-On)
- UOR → PN64 (Large Chamber)
- A400 → PN 400
- R-D → PN16 (Glass Tube)

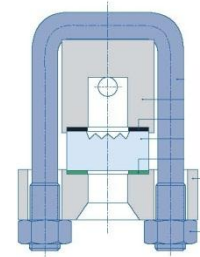
K



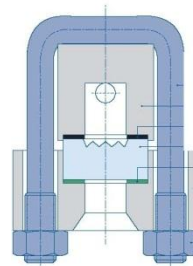
R25



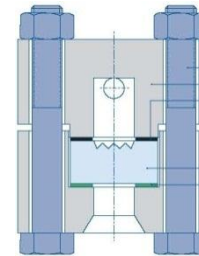
R100



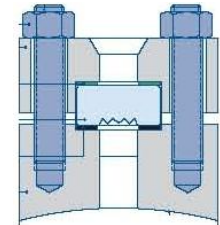
R160



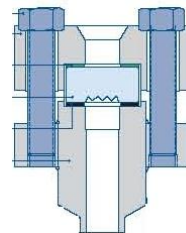
R250



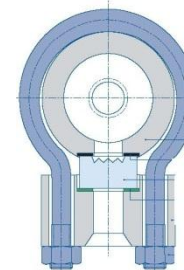
UWR



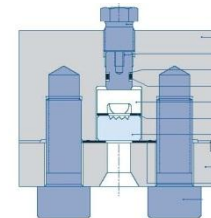
USR



UOR



A400

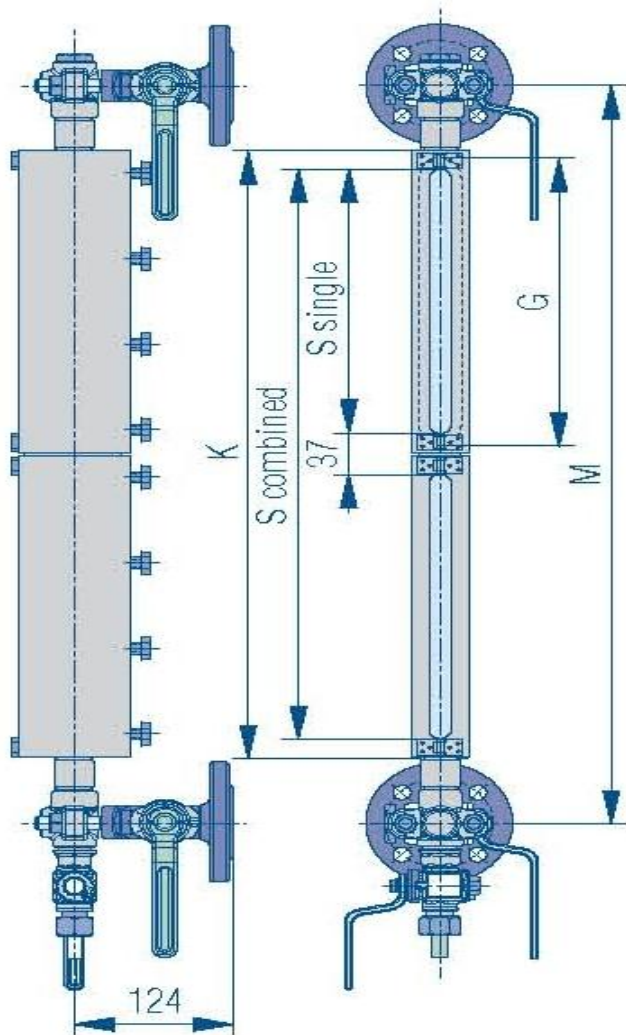


R-D



# Reflex Level Gauges

For steam and process application



## Reflex R25

Process: PN25/ANSI 150 T 400°C

Steam: Bar 20 - T 215°C

Material FS/H – M/H – Other on request

Standard Sizes from I to 7 x IX

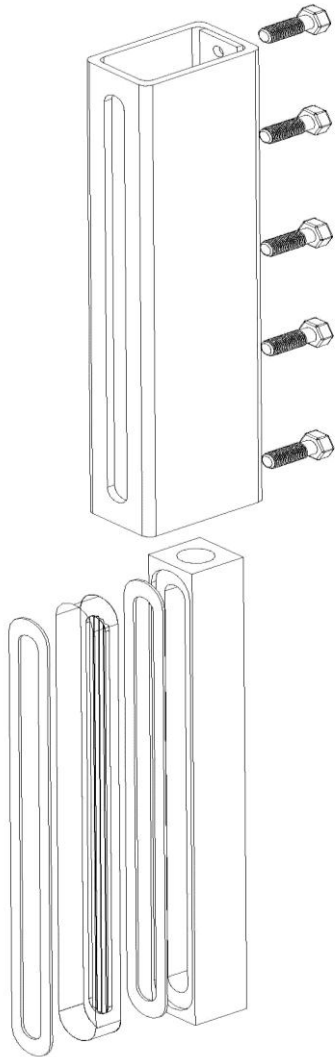
Suitable for shut-off Fittings:

- D Cock on Steam
- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process



# Reflex Level Gauges

For steam and process application



Reflex R50 – new!!

Process: PN50/ANSI 300 T 300°C

Steam: Bar 20 - T 215°C

Material FS/H – M/H – M

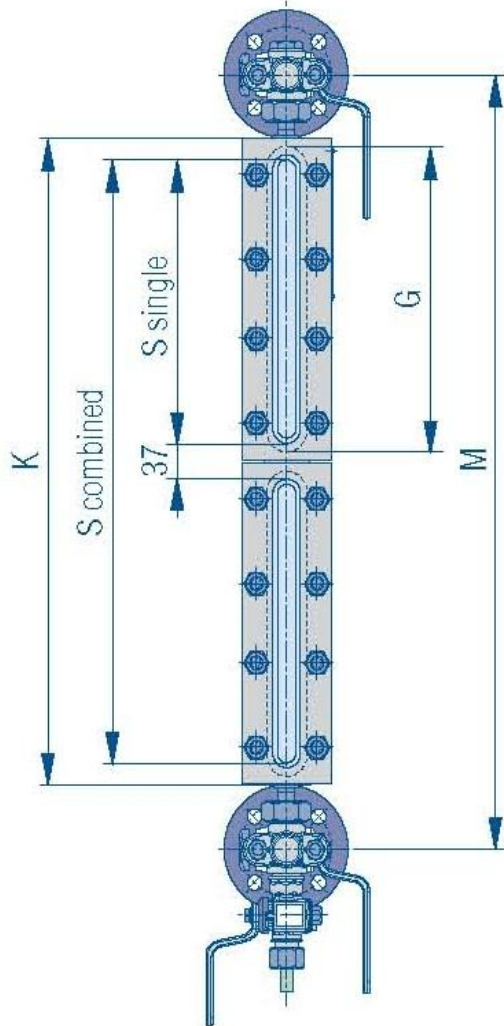
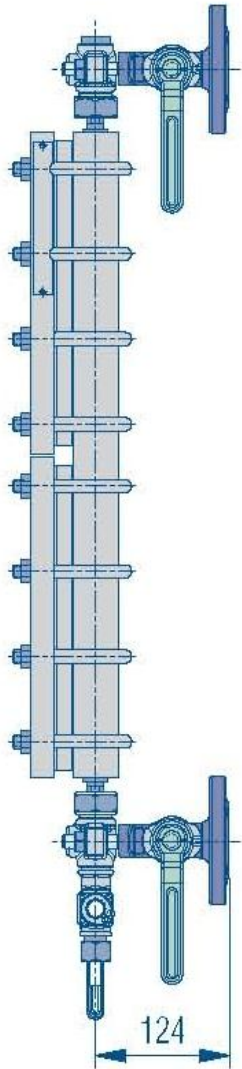
Standard Sizes from I to 7 x IX

Suitable for shut-off Fittings:

- D Cock on Steam
- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process

# Reflex Level Gauges

For steam and process application



Reflex - R100

Process: PN100/ANSI 600 T 400°C

Steam: Bar 22 - T 219°C

Material FS/H – M/H – M – Other on request

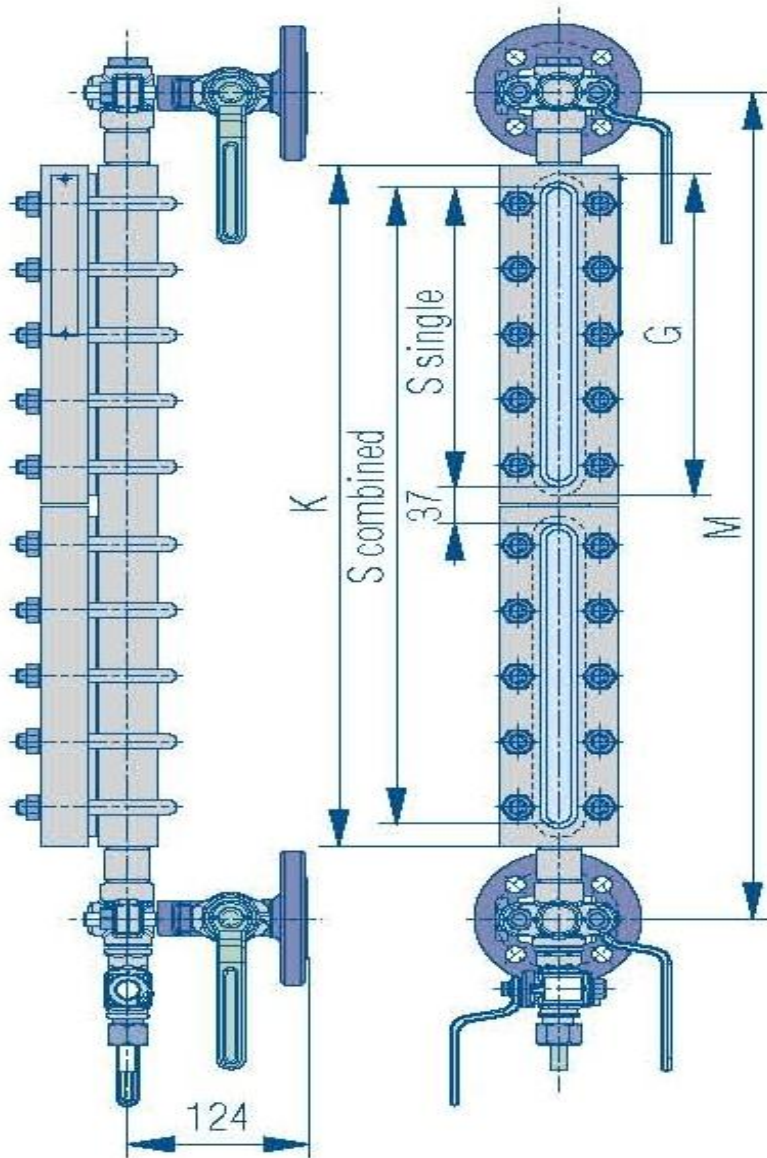
Standard Sizes from I to 7 x IX

Suitable for shut-off Fittings:

- D Cock on Steam
- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process

# Reflex Level Gauges

For steam and process application



## Reflex R160

Process: PN160/ANSI 900 T 400°C

Steam: Bar 32- T 239°C

Material FS/H – M/H – M – Other on request

Standard Sizes from I to 7 x IX

Suitable for shut-off Fittings:

- D Cock on Steam
- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process

# Reflex Level Gauges

For steam and process application



## Reflex R250

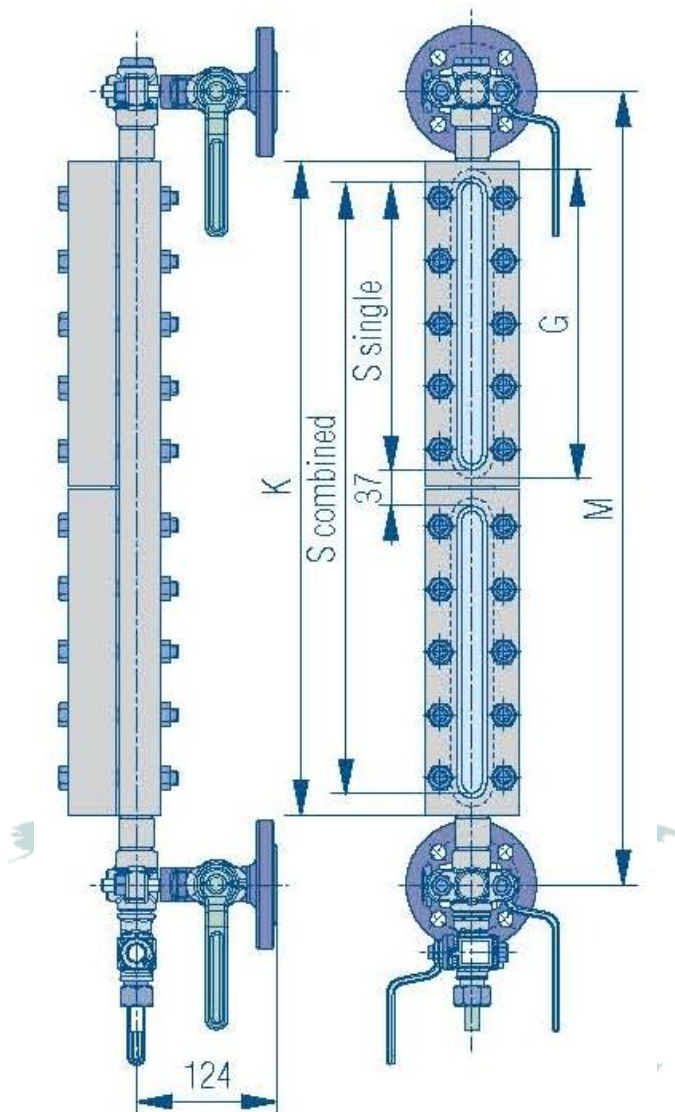
Process:  
PN250/ANSI 1500  
T 400°C

Material FS/H – M/H – M – Other on request

Standard Sizes from I to 7 x IX

Suitable for shut-off Fittings:

- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process

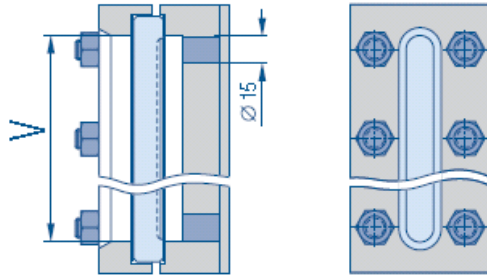


# Reflex Level Gauges

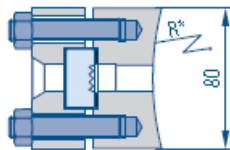
For steam and process application



## Reflex UWR - USR

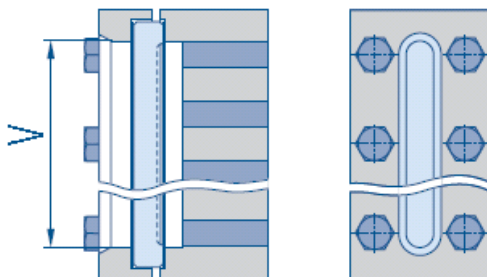


Direct welding on the tanks Radious back to be defined



Process: PN100/ANSI 600 T 400°C

Material FS/H – M/H – M – Others on request



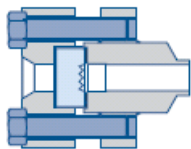
Standard Sizes from I to IX  
(Available with multiple sections too)

Also available:

UWR-A PN50

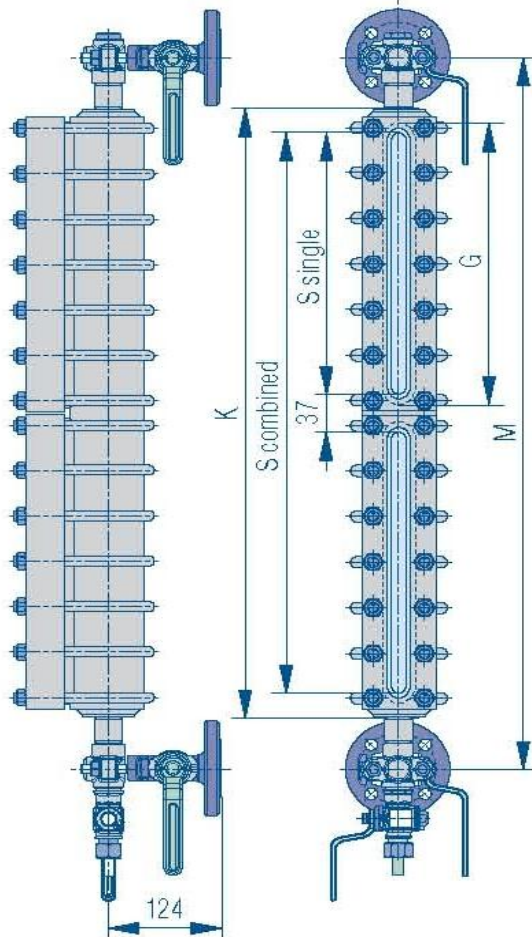
BODY 70x30 mm

GLASS "A"



# Reflex Level Gauges

For process application: UOR



Large Chamber Internal Size:  
about 40 mm

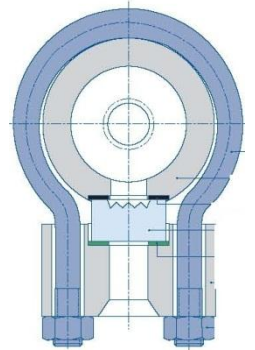
Process:  
PN63/ANSI 400  
T 400°C

Material FS/H – M/H - M

Standard Sizes from II to 6 x IX

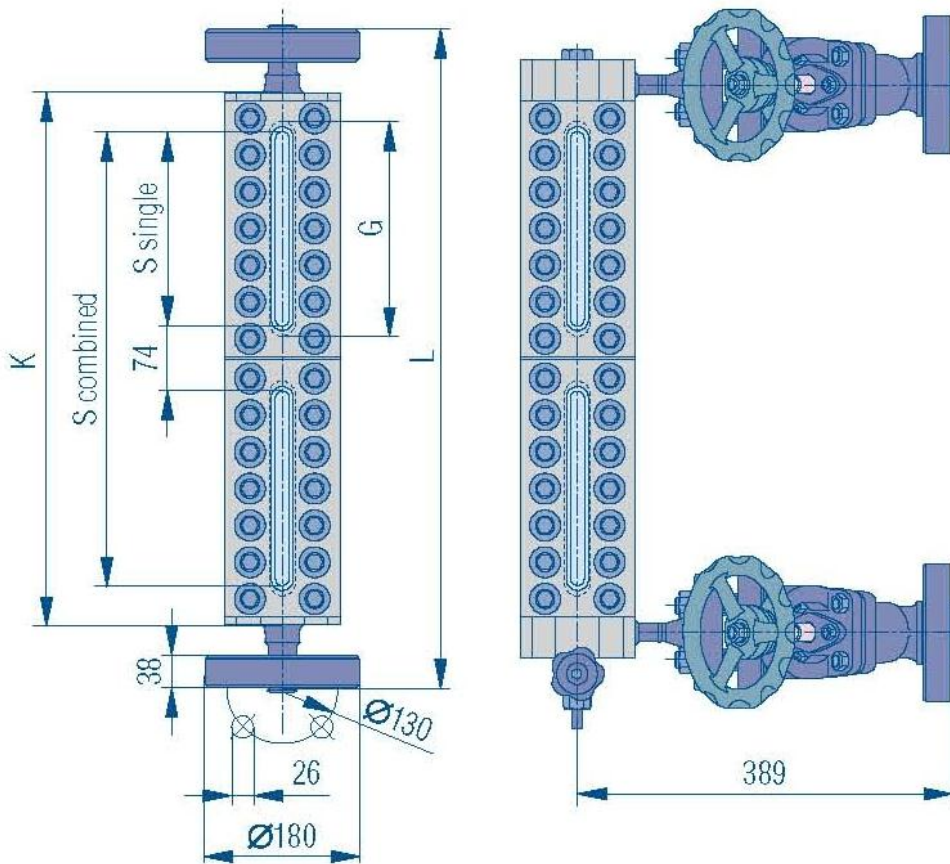
Suitable for shut-off Fittings:

- DG Cock on Process
- RAV 956/957 on Process
- RAV 946/947 on Process



# Reflex Level Gauges

For process application: A400



High Pressure

Process:  
PN400/ANSI 2500  
T 120°C

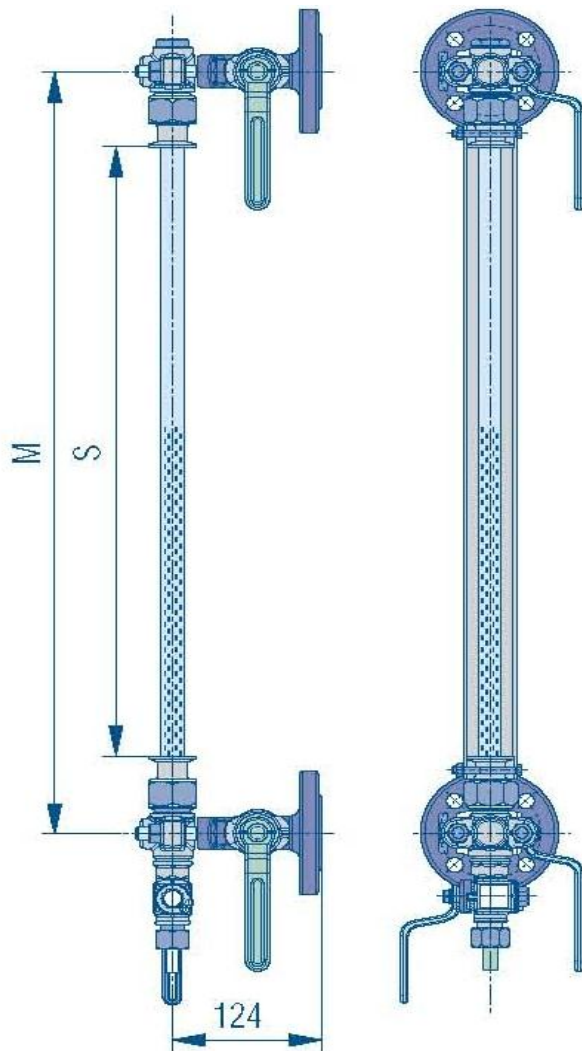
Material FS/H – M/H

Standard Sizes from II to 6 x IX

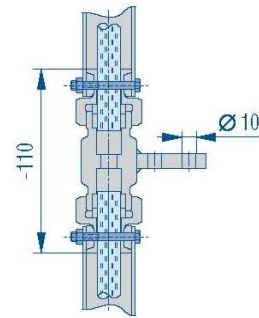
Suitable for shut-off Fittings:  
- DVK-2 Valves

# Reflex Level Gauges

For steam and process applications



## Union piece



## Glass Tube

Process:

PN 16 - T 185°C

Steam:

Bar 10 - T 120°C

For Center to Center distance above 1500 mm union piece is suggested

Glass Tube protection in Carbon Steel.

Material FS/H – M/H – M – Other on request

Suitable for shut-off Fittings:  
- D Cock





THANK YOU  
FOR YOUR ATTENTION