

# Seetru Limited

Seetru are Bristol-based manufacturers of safety relief and other special purpose ancillary valves for a wide range of compressed air, industrial gas, refrigerants, powder, steam, liquid and liquefied gas applications. Seetru change-over valves offer increased plant and process efficiency.

Seetru liquid level gauges are primarily of two types, sight gauges and magnetic float bypass gauges. Many of the gauges are direct reading though most have optional electronic remote reading systems and computer interfaces.



## Seetru Safety Relief Valves

### *For Hydrogen Applications*



# HYDROGEN



**Seetru Limited**  
*That's Safety!*



### Safety Relief Valves and Change Over Valves

*Suitable for the following applications:*

- Hydrogen generation- electrolyser
- Hydrogen fuel cells
- Hydrogen compressors and pumps
- Hydrogen fuelling systems
- Hydrogen storage
- Pressure vessels, receivers and piping systems containing hydrogen
- Hydrogen transportation

The Seetru range of safety valves for compressed air and gas are compact, highly efficient and incorporate the exclusive Tutchtite– seal technology for repeatable bubble-tight sealing performance: designed for applications including air/gas compressors, specialist gas plants, chemical equipment and piping, pressure vessels, thermal relief and medical gases etc.

These valves meet important international standards which include: ISO-4126-1 &-7 and ASME BPVC VIII.1 & XIII design codes as well as type test approvals from TÜV and the National Board. These products comply with the requirements of the European Pressure Equipment Directive (PED) and are available with both the CE mark as well as the UV stamp, and have wide international approvals such as the EAC (TR CU) customs union certification and declaration and the Canadian CRN. Seetru products are fully compliant with the requirements of the UK Pressure Equipment (Safety) Regulations and come with the UKCA mark.



Change-over valves (sometimes referred to as selector valves or three-way valves) enables the switching of flow from one safety valve to another. Typically used where plant shutdown is impossible or undesirable for process, engineering or commercial reasons. With change-over valves it is possible to switch over between parallel safety valves without interrupting operation, so that maintenance work can be carried out on each safety valve in turn. Seetru change-over valves in combination with our safety valves provide the best solution for plant safety and efficiency. Seetru products are widely recognised for their exceptional quality and reliability.

## Table of contents

Type	Product / Design	Materials	Inlet Connections	Pressure Range	Page
636/656/646	Enclosed Discharge	Bronze Or Stainless Steel	3/8" To 2" Bsp, Bspt Or Npt	0.32 To 55.2 bar	4-9
936/946	Enclosed Discharge	Bronze Stainless Steel	1/2" To 2" Bsp, Bspt Or Npt	0.3 To 28.0 bar	10-15
	Threaded Connections	Metal To Metal Sealing			
33020/ 34020/ 34320	Enclosed Discharge	Brass Or Stainless Steel	3/8" To 1/2" Bsp, Bspt Or Npt	55.0 To 103.4 bar	16-18
33110/ 34110/ 34410	Enclosed Discharge	Brass Or Stainless Steel	3/8" To 1/2" Bsp, Bspt Or Npt	27 To 241.3 bar	19-21
329	Enclosed Discharge	Bronze Or Stainless Steel	3/8" To 3/4" Bsp, Bspt Or Npt	53.0 To 370.0 bar	22-24
Type 359 / B4605 / B6605	Enclosed Discharge Safety Relief Valves	Stainless Steel Construction With Metal Ball Sealing	Inlet Connections From 3/8" To 1/2" Bsp, Bspt Or Npt	35.0 To 500.0 bar	25-27
Type 94605 / 946H5 / 95605 / 956H5	Enclosed Discharge Safety Relief Valves	Stainless Steel	<ul style="list-style-type: none"> <li>◦ 1/2" Npt, Bsp &amp; Bspt</li> <li>◦ 9/16" Cone &amp; Thread</li> <li>◦ 3/4" Cone &amp; Thread</li> </ul>	<ul style="list-style-type: none"> <li>◦ 35.0 To 515 bar (9*605)</li> <li>◦ 35.0 To 1100 bar (9*6h5)</li> </ul>	28-30
946 FLANGED	Enclosed Discharge	Stainless Steel	Dn20 (3/4") Or Dn25 (1") Din Or Ansi Flanges	0.3 To 28.0 bar	31-33
	Flanged Connections				
646 FLANGED	Enclosed Discharge	Stainless Steel	Dn20 (3/4") Or Dn25 (1") Din Or Ansi Flanges	0.32 To 49.0 bar	34-36
	Flanged Connections				
COV10	Change Over Valve	Stainless steel construction with PTFE	Suitable for Safety Relief Valves with up to 10mm bore (Full Lift Type)	For Safety valves with set pressure up to 75.0 bar	37-39
COV13	Change Over Valve	Stainless steel construction with PTFE or Elastomer sealing	Suitable for Safety Relief Valves with up to 10mm bore (Full Lift Type)	For Safety valves with set pressure up to 65.0 bar	37-39
COV30	Change Over Valve	Stainless steel construction with PTFE sealing	Suitable for Safety Relief Valves with up to 18mm bore (Full Lift Type)	For Safety valves with set pressure up to 100.0 bar	37-39

for compressed Air & Gas

hydrogen

## Type 636 / 631

Safety valves with bronze body <  
Enclosed discharge valve with threaded connections <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Pneumatic systems
- Medical gases
- Technical gases

### Specifications

- Inlet connections: 3/8" to 2" (depending on bore size)
- Temperature: -40°C to +200°C (depending on seal material)
- Pressure range: 0.32 to 55.2 bar (depending on bore size)

### Materials of Construction

Component	Material	Grade
Inlet	Brass	CW614N
	Stainless Steel	1.4401 (316)
Body	Bronze	CC491K SB-62 C83600
Internal parts	Brass	CW614N
	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)



### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- ASME BPVC VIII.1 & XIII (UV)
- CRN
- EAC



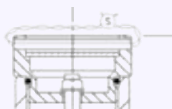
### Seal Materials

Seal Material	Temperature Range
Viton® (FKM)	-15°C to +200°C
Nitrile (NBR)	-40°C to +120°C

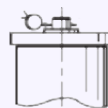
Standard seal materials shown, others are available.

### Easing Gear / Lifting Gear Options

- **Standard option:**  
Rota-lift, twist type  
(not gas tight)



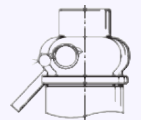
- **Other Options:**



Sealed Cap (gas tight cap)



Unsealed lever (not gas tight)



Sealed lever (gas tight)

## Technical information by bore size

Bore size	9.5/10mm			13.7mm			17mm			20mm			25mm		
Inlet Size	3/8"	1/2"	3/4"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	1 1/4"	1 1/2"	2"
Outlet Size	3/4"			1"			1 1/2"			2"			2"		
Flow Area	70.9mm <sup>2</sup> (above 1.55 bar)			147.7mm <sup>2</sup>			227mm <sup>2</sup>			314mm <sup>2</sup>			490.4mm <sup>2</sup>		
H - Height (Rota-lift cap version)	102mm (up to 33 bar) 116mm (33-55.2 bar)			143mm (up to 35 bar) 172.5mm (35-49 bar)			204mm			227mm			252mm		
TÜV allotted outflow coefficient	0.77 above 1.55 bar			0.77			0.77			0.77			0.77		
NB Certified rated slope (ASME)	1.74 scfm/psia			3.47 scfm/psia			5.60 scfm/psia			7.77 scfm/psia			12.26 scfm/psia		
Weight (approximate) Kg	0.8			1.1			3.6			4.0			5.1		
Set Pressure range - PED (CE) bar	0.48 to 55.2			0.32 to 49.0			1.0 to 35.0			3.0 to 35.0			5.65 to 30.0		
Set Pressure range - ASME (UV) psi	22.5 to 800.4			20.3 to 710.5			34.8 to 507.5			43.5 to 507.5			82.0 to 435.0		
Relieving pressure/fully open pressure	<b>Set Pressure +10%</b>														
Reseating pressure	<b>Set Pressure -10% (0.3 bar minimum)</b>														

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.  
Stable operation on flows down to 50% of valve rated capacity.

## Standard Thread Connection Types

- BSP Parallel male thread
- BSP Taper male thread
- NPT male thread

## Standard Outlet Connection Types

- BSP Parallel female thread
- NPT female thread

## Valve Selection Guide

Approval Required	Valve type	Select Bore	Inlet Size	Thread Type	Outlet Thread Type	Easing Gear	Seal Material
PED (CE)	636 (Brass inlet)	Select bore size from above table	Select inlet size from above table	Select Inlet thread type	Select Outlet thread type	Select easing gear/top fitting	Viton® (FKM)
	656 (St. Steel inlet)						Nitrile (NBR)
PED (CE), ASME (UV) & CR	631 (Brass inlet)						Other
	651 (St. Steel inlet)						

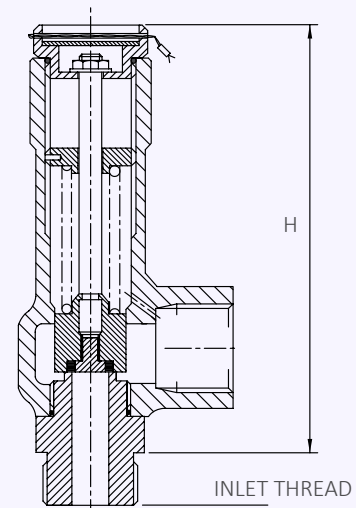
EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	CE/PED	636	20	1 1/2"	BSP Taper	BSP parallel	Rota-lift	Viton	10.5 bar
	Approval	Valve Type	Bore = 20mm	Inlet Size	Inlet Thread Type	Outlet Thread Type	Easing Gear	Seal	Set Pressure

## Valves with Rota-lift Easing Gear



Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour  
 Type 636/656: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
		9.5mm	13.7mm	17mm	20mm	25mm
bar	psi	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour
0.32	4.64		123.9			
0.48	6.96	51.5	138.2			
1	14.5	79.1	178.9	251.6		
2	29	119.4	248.4	385.5		
3	43.5	160.4	333.5	513.5	710.7	
4	58	201.2	418.5	644.4	891.9	
5	72.5	242.1	503.6	775.4	1073.2	
5.65	81.93	268.7	558.8	860.5	1191.0	1860.9
6	87	283.0	588.6	906.3	1254.5	1960.1
7	101.5	323.9	673.6	1037.3	1435.7	2243.3
8	116	364.8	758.7	1168.2	1616.9	2526.5
9	130.5	405.7	843.7	1299.2	1798.2	2809.7
10	145	446.6	928.8	1430.2	1979.4	3092.9
15	217.5	651.1	1354.0	2084.9	2885.7	4508.9
20	290	855.6	1779.3	2739.7	3791.9	5924.9
25	362.5	1060.0	2204.5	3394.4	4698.2	7340.9
30	435	1264.5	2629.7	4049.2	5604.4	8756.9
35	507.5	1468.9	3054.9	4703.9	6510.7	
40	580	1673.4	3480.2			
45	652.5	1877.9	3905.4			
49	710.5	2041.5	4245.6			
50	725	2082.4				
55.2	800.4	2295.0				

For any intermediate pressures/flows please contact Seetru

Capacity Table - In accordance with ASME BPVC.XIII, AIR at 60°F and 14.7 psia/scfm. SCFM  
 Type 631/651: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
		9.5mm	13.7mm	17mm	20mm	25mm
psi	bar	SCFM	SCFM	SCFM	SCFM	SCFM
20.3	1.40		131.9			
22.5	2.50	68.7	139.4			
30	2.07	81.5	165.5			
34.8	2.80	90.6	183.8	296.7		
40	2.76	100.4	203.7	328.7		
43.5	3.00	106.9	217.0	350.2	486.0	
50	3.45	119.2	241.8	390.3	541.5	
82	5.66	179.3	363.9	587.3	814.9	1285.8
100	6.90	213.2	432.6	698.1	968.7	1528.4
150	10.34	307.2	623.4	1006.1	1395.9	2202.6
200	13.79	401.2	814.2	1314.0	1823.2	2876.8
250	17.24	495.3	1005.0	1621.9	2250.4	3550.8
300	20.69	589.3	1195.8	1929.8	2677.6	4224.9
350	24.14	683.3	1386.6	2237.8	3104.9	4899.1
400	27.59	777.4	1577.4	2545.7	3532.2	5573.3
435	30.00	843.2	1711.0	2761.2	3831.2	6045.2
450	31.03	871.4	1768.2	2853.6	3959.3	
500	34.48	965.4	1959.0	3161.5	4386.6	
507.5	35.00	979.5	1987.6	3207.7	4450.7	
550	37.93	1059.4	2149.8			
600	41.38	1153.4	2340.6			
650	44.83	1247.5	2531.4			
700	48.28	1341.5	2722.2			
710.5	49.00	1361.3	2762.3			
750	51.72	1435.5				
800.4	55.20	1530.3				

For any intermediate pressures/flows please contact Seetru

for compressed Air & Gas

hydrogen

## Type 646 / 641

Safety valves with Stainless Steel body <  
Enclosed discharge valve with threaded connections <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Pneumatic systems
- Medical gases
- Technical gases

### Specifications

- Inlet connections: 3/8" to 2" (depending on bore size)
- Temperature: -40°C to +200°C (depending on seal material)
- Pressure range: 0.32 to 55.2 bar (depending on bore size)

### Materials of Construction

Component	Material	Grade
Inlet	Stainless Steel	1.4401 (316)
Body	Stainless Steel	1.4408 (316)
Internal Parts	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)



### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- ASME BPVC VIII.1 & XIII (UV)
- CRN
- EAC



### Seal Materials

Seal Material	Temperature Range
Viton® (FKM)	-15°C to +200°C
Nitrile (NBR)	-40°C to +120°C

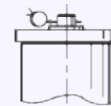
Standard seal materials shown, others are available.

### Easing Gear / Lifting Gear Options

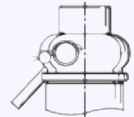
- **Standard option:** Rota-lift cap, twist type (not gas tight)



- **Other Options:**



Sealed Cap (gas tight cap)



Sealed lever (gas tight)

## Technical information by bore size

Bore size	9.5/10mm			13.7mm			17mm			20mm			25mm		
Inlet Size	3/8"	1/2"	3/4"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	1 1/4"	1 1/2"	2"
Outlet Size	3/4"			1"			1 1/2"			2"			2"		
Flow Area	70.9mm <sup>2</sup> (above 1.55 bar)			147.7mm <sup>2</sup>			227mm <sup>2</sup>			314mm <sup>2</sup>			490.4mm <sup>2</sup>		
H - Height (Rota-lift cap version)	116mm			143mm (up to 35 bar) 172.5mm (35-49 bar)			211mm			227mm			252mm		
TÜV allotted outflow coefficient	0.77 above 1.55 bar			0.77			0.77			0.77			0.77		
NB Certified rated slope (ASME)	1.74 scfm/psia			3.47 scfm/psia			5.60 scfm/psia			7.77 scfm/psia			12.26 scfm/psia		
Weight (approximate) Kg	0.8			1.1			3.6			4.0			5.1		
Set Pressure range - PED (CE) bar	0.48 to 55.2			0.32 to 49.0			1.0 to 35.0			3.0 to 35.0			5.65 to 30.0		
Set Pressure range - ASME (UV) psi	22.5 to 800.4			20.3 to 710.5			34.8 to 507.5			43.5 to 507.5			82.0 to 435.0		
Relieving pressure/fully open pressure	<b>Set Pressure +10%</b>														
Reseating pressure	<b>Set Pressure -10%</b>														

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.  
Stable operation on flows down to 50% of valve rated capacity.

## Standard Thread Connection Types

- BSP Parallel male thread
- BSP Taper male thread
- NPT male thread

## Standard Outlet Connection Types

- BSP Parallel female thread
- NPT female thread

## Valve Selection Guide

Approval Required	Valve type	Select Bore	Inlet Size	Inlet Thread Type	Outlet Thread Type	Easing Gear	Seal Material
PED (CE)	646	Select bore size from above table	Select inlet size from above table	Select Inlet thread type	Select Outlet thread type	Select easing gear/top fitting	Viton® (FKM)
PED (CE), ASME (UV) & CRN	641						Nitrile (NRB)
							Other

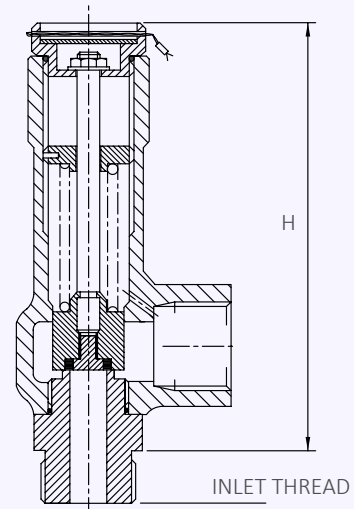
EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	PED, ASME & CRN	641	20	1 1/2"	BSP Taper	BSP parallel	Rota-lift	Viton	10.5 bar
	Approval	Valve Type	Bore = 20mm	Inlet Size	Inlet Thread Type	Outlet Thread Type	Easing Gear	Seal	Set Pressure

## Valves with Rota-lift Easing Gear





Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour  
 Type 646: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
		9.5mm	13.7mm	17mm	20mm	25mm
bar	psi	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour
0.32	4.64		123.9			
0.48	6.96	51.5	138.2			
1	14.5	79.1	178.9	251.6		
2	29	119.4	248.4	385.5		
3	43.5	160.4	333.5	513.5	710.7	
4	58	201.2	418.5	644.4	891.9	
5	72.5	242.1	503.6	775.4	1073.2	
5.65	81.93	268.7	558.8	860.5	1191.0	1860.9
6	87	283.0	588.6	906.3	1254.5	1960.1
7	101.5	323.9	673.6	1037.3	1435.7	2243.3
8	116	364.8	758.7	1168.2	1616.9	2526.5
9	130.5	405.7	843.7	1299.2	1798.2	2809.7
10	145	446.6	928.8	1430.2	1979.4	3092.9
15	217.5	651.1	1354.0	2084.9	2885.7	4508.9
20	290	855.6	1779.3	2739.7	3791.9	5924.9
25	362.5	1060.0	2204.5	3394.4	4698.2	7340.9
30	435	1264.5	2629.7	4049.2	5604.4	8756.9
35	507.5	1468.9	3054.9	4703.9	6510.7	
40	580	1673.4	3480.2			
45	652.5	1877.9	3905.4			
49	710.5	2041.5	4245.6			
50	725	2082.4				
55.2	800.4	2295.0				

For any intermediate pressures/flows please contact Seetru

Capacity Table - In accordance with ASME BPVC.XIII, AIR at 60°F and 14.7 psia/scfm. SCFM  
 Type 641: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
		9.5mm	13.7mm	17mm	20mm	25mm
psi	bar	SCFM	SCFM	SCFM	SCFM	SCFM
20.3	1.40		131.9			
22.5	2.50	68.7	139.4			
30	2.07	81.5	165.5			
34.8	2.80	90.6	183.8	296.7		
40	2.76	100.4	203.7	328.7		
43.5	3.00	106.9	217.0	350.2	486.0	
50	3.45	119.2	241.8	390.3	541.5	
82	5.66	179.3	363.9	587.3	814.9	1285.8
100	6.90	213.2	432.6	698.1	968.7	1528.4
150	10.34	307.2	623.4	1006.1	1395.9	2202.6
200	13.79	401.2	814.2	1314.0	1823.2	2876.8
250	17.24	495.3	1005.0	1621.9	2250.4	3550.8
300	20.69	589.3	1195.8	1929.8	2677.6	4224.9
350	24.14	683.3	1386.6	2237.8	3104.9	4899.1
400	27.59	777.4	1577.4	2545.7	3532.2	5573.3
435	30.00	843.2	1711.0	2761.2	3831.2	6045.2
450	31.03	871.4	1768.2	2853.6	3959.3	
500	34.48	965.4	1959.0	3161.5	4386.6	
507.5	35.00	979.5	1987.6	3207.7	4450.7	
550	37.93	1059.4	2149.8			
600	41.38	1153.4	2340.6			
650	44.83	1247.5	2531.4			
700	48.28	1341.5	2722.2			
710.5	49.00	1361.3	2762.3			
750	51.72	1435.5				
800.4	55.20	1530.3				

For any intermediate pressures/flows please contact Seetru

# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air or gases

steam

cryogenics & liquefied gases

hydrogen

## Type 936 Threaded

Safety valves made with brass inlets  
Enclosed discharge valve with threaded connections  
Metal to metal sealing

### Example Applications

- Air / gas compressors
- Pressure vessels
- Medical gases/Technical gases
- Thermal relief
- Steam systems

### Specifications

- Inlet connections: 1/2" to 2" threaded connections (depending on valve bore size) (for flanged connections see 946 Flanged datasheet).
- Temperature range: -196°C to +250°C (depending on body o'ring material)
- Pressure range: 0.3 to 28.0 bar (depending on valve bore size)

### Materials of Construction

Component	Material	Grade
Inlet	Brass	CZ132 / CW602N
Outlet Body (10mm bore valve)	Bronze	SB-62 C8360
Outlet Body (15, 20 & 25mm bore valves)	Stainless Steel	1.4408 (316)
Spring	Stainless Steel	1.4310 (302)
Disc	Stainless Steel	1.4401 (316)

### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- EAC
- Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1
- Materials meet the requirements of BAM (Germany) for oxygen service



### Seal Materials

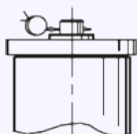
This valve using metal to metal sealing. There is a choice of o'ring used for the sealed cap/lever.

O'ring material	Temperature Range
Viton® (FKM)	-20°C to +250°C
Nitrile (NBR)	-196°C to +150°C
Silicone	-50°C to +250°C
PTFE	-196°C to +250°C
EPDM	-40°C to +150°C

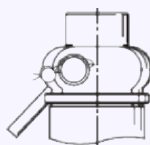
-196°C is only suitable for sealed cap/sealed lever valves  
Standard seal materials shown, others are available.

### Easing Gear / Lifting Gear / Top Fitting Options

- Sealed Cap (gas tight cap)



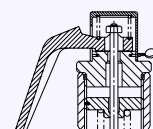
- Sealed lever (gas tight)



- Rota-lift (not gas tight)



- Open Lever (not gas tight)

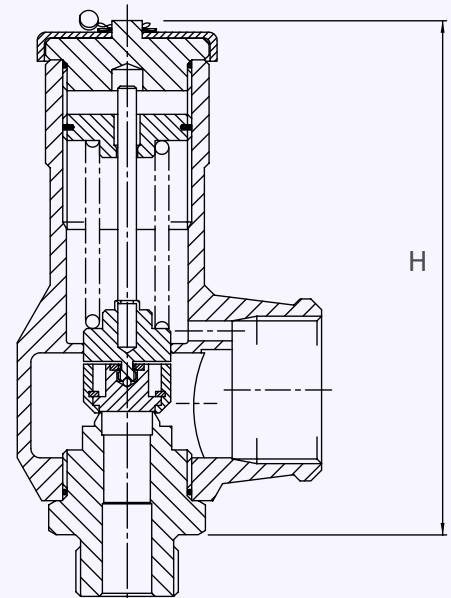


## Technical information by bore size

Bore size	10mm (93610)			15mm (93615)			20mm (93620)			25mm (93625)			
Inlet Size	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	2"
Outlet Size	1"			1 1/2"			2"			2"			
Flow Area	78.5mm <sup>2</sup>			177mm <sup>2</sup>			314mm <sup>2</sup>			491mm <sup>2</sup>			
H - Height (Sealed Lever version)	114mm			168mm			141mm			225mm			
TÜV allotted outflow coefficient	0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			
Weight (approximate) Kg	1.0			2.1			3.5			4.2			
Set Pressure range - PED (CE) bar	0.3 to 28.0			0.3 to 28.0			0.3 to 28.0			0.3 to 20.0			
Relieving pressure/fully open pressure	Set pressure +10% (0.1 bar below 1.0 bar)												
Reseating pressure	Set pressure -10% (0.3 bar below 3.0 bar)												

- TÜV allotted outflow coefficients for pressures above 3.0/4.0 bar, for lower pressures please see the flow rate tables or contact Seetru.
- Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.
- Stable operation on flows down to 50% of valve rated capacity.
- Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1

## Valve Drawing



## Standard INLET Connection Types

- BSP parallel male thread
- BSP taper male thread
- NPT male thread
- BSP parallel female thread (limited option)

## Standard OUTLET Connection Types

- BSP parallel female thread

## Valve Selection Guide

Valve type	Select Bore	Inlet Size	Inlet Thread Type	Top Fitting	O'ring material (for cap)	Set pressure
936	Select bore size from above table	Select inlet size from above table	Select Inlet Thread type	Select easing gear/top fitting	See table	Set pressure from available range

EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	936	15	1"	BSP parallel	Rota Lift	Viton	17.5 bar
	Valve Type	Bore = 15mm	Inlet Size	Inlet Thread Type	Top Fitting	O'ring	Set Pressure

## Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour Type 936: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm	20mm	25mm
bar	psi	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour
0.3	4.35	48.5	109.2	194.2	303.5
0.5	7.25	59.0	132.9	236.2	369.1
1	14.5	96.1	216.2	384.4	600.6
2	29	146.1	328.7	584.4	913.2
3	43.5	196.1	441.3	784.5	1225.8
4	58	246.1	553.8	948.6	1538.4
5	72.5	296.1	666.4	1184.7	1851.1
6	87.00	346.2	778.9	1384.8	2163.7
7	101.5	396.2	891.4	1584.8	2476.3
8	116	446.2	1004.0	1784.9	2788.9
9	130.5	496.2	1116.5	1985.0	3101.6
10	145	546.7	1229.1	2185.1	3414.2
15	217.5	796.3	1791.8	3185.5	4977.3
20	290	1046.4	2354.6	4185.9	6540.4
25	362.5	1296.5	2917.3	5186.3	
28	406	1446.6	3254.9	5786.5	

For any intermediate pressures/flows please contact Seetru

## Capacity Table - In accordance with TÜV, STEAM. Kg/hour Type 936: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm	20mm	25mm
bar	psi	Kg/hour of Steam	Kg/hour of Steam	Kg/hour of Steam	Kg/hour of Steam
0.3	4.35	37.6	84.5	150.2	234.7
0.5	7.25	46.6	104.8	186.3	291.1
1	14.5	76.6	172.5	306.6	479.0
2	29	115.1	259.0	460.5	719.5
3	43.5	153.2	344.6	612.7	957.4
4	58	190.9	429.7	763.9	1193.7
5	72.5	228.6	514.3	914.4	1428.7
6	87.00	266.1	598.6	1064.2	1662.9
7	101.5	303.4	682.6	1213.5	1896.2
8	116	340.6	766.5	1362.6	2129.1
9	130.5	377.9	850.4	1511.8	2362.2
10	145	415.1	933.9	1660.4	2594.4
15	217.5	600.3	1350.7	2401.3	3752.0
20	290	785.4	1767.2	3141.7	4909.0
25	362.5	970.5	2183.7	3882.2	
28	406	1081.9	2434.4	4327.9	

For any intermediate pressures/flows please contact Seetru

# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air or gases

steam

cryogenics & liquefied gases

hydrogen

## Type 946 Threaded

Safety valves made from Stainless Steel <  
Enclosed discharge valve with threaded connections <  
Metal to metal sealing <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Medical gases/Technical gases
- Refrigeration (including ammonia)
- Thermal relief
- Steam systems
- Hydrogen

### Specifications

- Inlet connections: 1/2" to 2" threaded connections (depending on valve bore size) \*For flanged connections see datasheet 946 Flanged
- Temperature range: -50°C to +250°C (depending on body o'ring material)
- Pressure range: 0.3 to 28.0 bar (depending on valve bore size)

### Materials of Construction

Component	Material	Grade
Inlet	Stainless Steel	1.4401 (316)
Body	Stainless Steel	1.4408 (316)
Internal Parts	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)
Disc	Stainless Steel	AISI 440B

### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- EAC
- Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1



### Seal Materials

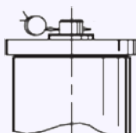
This valve using metal to metal sealing. There is a choice of o'ring used for the sealed cap/lever.

O'ring material – Top cap	Temperature Range
Viton® (FKM)	-20°C to +250°C
Nitrile (NBR)	-30°C to +150°C
Silicone	-50°C to +250°C
EPDM	-40°C to +150°C

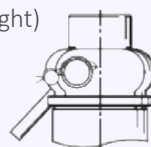
Standard seal materials shown, others are available.

### Easing Gear / Lifting Gear / Top Fitting Options

- Sealed Cap (gas tight cap)



- Sealed lever (gas tight)



- Rota-lift (not gas tight)

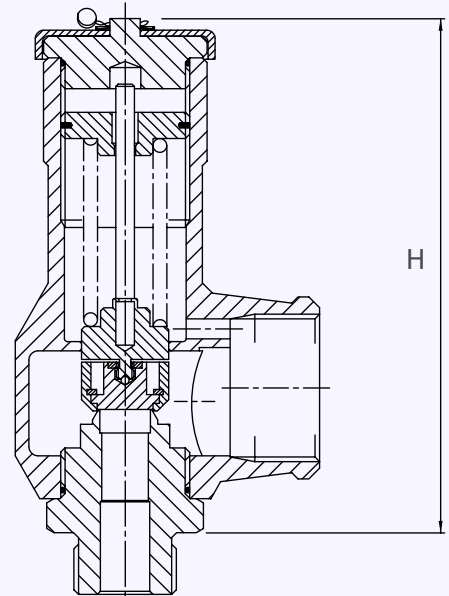


## Technical information by bore size

Bore size	10mm (94610)			15mm (94615)			20mm (94620)			25mm (94625)			
Inlet Size	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	1"	1 1/4"	1 1/2"	2"
Outlet Size	1"			1 1/2"			2"			2"			
Flow Area	78.5mm <sup>2</sup>			177mm <sup>2</sup>			314mm <sup>2</sup>			491mm <sup>2</sup>			
H - Height (Sealed Lever version)	114mm			168mm			141mm			225mm			
TÜV allotted outflow coefficient	0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)			
Weight (approximate) Kg	1.0			2.1			3.5			4.2			
Set Pressure range - PED (CE) bar	0.3 to 28.0			0.3 to 28.0			0.3 to 28.0			0.3 to 20.0			
Relieving pressure/fully open pressure	Set pressure +10% (0.1 bar below 1.0 bar)												
Reseating pressure	Set pressure -10% (0.3 bar below 3.0 bar)												

- TÜV allotted outflow coefficients for pressures above 3.0/4.0 bar, for lower pressures please see the flow rate tables or contact Seetru.
- Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.
- Stable operation on flows down to 50% of valve rated capacity. Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1

## Valve Drawing



## Standard INLET Connection Types

- BSP parallel male thread
- BSP taper male thread
- NPT male thread
- BSP parallel female thread (limited option)

## Standard OUTLET Connection Types

- BSP parallel female thread

## Valve Selection Guide

Valve type	Select Bore	Inlet Size	Inlet Thread Type	Top Fitting	O'ring material (for cap)	Set pressure
946	Select bore size from above table	Select inlet size from above table	Select Inlet Thread type	Select easing gear/top fitting	See table	Set pressure from available range

EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	946	15	1"	BSP parallel	Sealed Lever	Viton	17.5 bar
	Valve Type	Bore = 15mm	Inlet Size	Inlet Thread Type	Top Fitting	O'ring	Set Pressure

## Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour Type 946: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm	20mm	25mm
bar	psi	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour
0.3	4.35	48.5	109.2	194.2	303.5
0.5	7.25	59.0	132.9	236.2	369.1
1	14.5	96.1	216.2	384.4	600.6
2	29	146.1	328.7	584.4	913.2
3	43.5	196.1	441.3	784.5	1225.8
4	58	246.1	553.8	948.6	1538.4
5	72.5	296.1	666.4	1184.7	1851.1
6	87.00	346.2	778.9	1384.8	2163.7
7	101.5	396.2	891.4	1584.8	2476.3
8	116	446.2	1004.0	1784.9	2788.9
9	130.5	496.2	1116.5	1985.0	3101.6
10	145	546.7	1229.1	2185.1	3414.2
15	217.5	796.3	1791.8	3185.5	4977.3
20	290	1046.4	2354.6	4185.9	6540.4
25	362.5	1296.5	2917.3	5186.3	
28	406	1446.6	3254.9	5786.5	

For any intermediate pressures/flows please contact Seetru

## Capacity Table - In accordance with TÜV, STEAM. Kg/hour Type 946: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm	20mm	25mm
bar	psi	Kg/hour of Steam	Kg/hour of Steam	Kg/hour of Steam	Kg/hour of Steam
0.3	4.35	37.6	84.5	150.2	234.7
0.5	7.25	46.6	104.8	186.3	291.1
1	14.5	76.6	172.5	306.6	479.0
2	29	115.1	259.0	460.5	719.5
3	43.5	153.2	344.6	612.7	957.4
4	58	190.9	429.7	763.9	1193.7
5	72.5	228.6	514.3	914.4	1428.7
6	87.00	266.1	598.6	1064.2	1662.9
7	101.5	303.4	682.6	1213.5	1896.2
8	116	340.6	766.5	1362.6	2129.1
9	130.5	377.9	850.4	1511.8	2362.2
10	145	415.1	933.9	1660.4	2594.4
15	217.5	600.3	1350.7	2401.3	3752.0
20	290	785.4	1767.2	3141.7	4909.0
25	362.5	970.5	2183.7	3882.2	
28	406	1081.9	2434.4	4327.9	

For any intermediate pressures/flows please contact Seetru

# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air & gas

hydrogen

## Type 33020 / 34020 / 34320

Safety valves made with a Brass or Stainless Steel body and Stainless Steel inlets <  
Enclosed discharge valve with threaded connections <  
Elastomer rubber sealing <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Pneumatic systems
- Medical gases/Technical gases
- Hydrogen (with 316 stainless steel inlet)

### Specifications

- Inlet connections: 3/8" to 1/2" threaded inlet connections
- Temperature range: -40°C to +200°C (depending on body rubber seal material)
- Pressure range: 55.0 to 103.4 bar

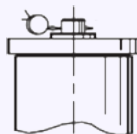
### Materials of Construction

Component	Valve Type	Material	Grade
Inlet	33020	Stainless Steel	1.4305 (303)
	34020	Stainless Steel	1.4305 (303)
	34320	Stainless Steel	1.4401 (316)
Body	33020	Brass	CZ132
	34020	Stainless Steel	1.4408 (316)
	34320	Stainless Steel	1.4408 (316)
Spring	All	Stainless Steel	302

Drawing showing all component materials available upon request.

### Top fitting

**Sealed Cap** (gas tight cap)



### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- EAC



### Seal Materials

This valve using metal to metal sealing. There is a choice of o'ring used for the sealed cap/lever.

O'ring material – Top cap	Temperature Range
Viton® (FKM)	-15°C to +200°C
Nitrile (NBR)	-40°C to +120°C

Standard seal materials shown, others are available.

THESE VALVES SHOULD ONLY BE TESTED FOR SET PRESSURE ON LIQUID PRIOR TO FINAL INSTALLATION. VALVES THAT ARE TESTED ON AIR & FULLY LIFTED WILL CAUSE DAMAGE TO THE SEALING FACE.



## Technical information by bore size

Bore size	7.14mm (33020)		7.14mm (34020)		7.14mm (34320)	
Inlet Size	3/8"	1/2"	3/8"	1/2"	3/8"	1/2"
Outlet Size	1/2"		1/2"		1/2"	
Flow Area	40.04mm <sup>2</sup>		40.04mm <sup>2</sup>		40.04mm <sup>2</sup>	
H - Height	96mm		96mm		96mm	
TÜV allotted outflow coefficient	0.67		0.67		0.67	
Weight (approximate) Kg	0.8		0.8		0.8	
Set Pressure range - PED (CE) bar	55.0 to 103.4 bar		55.0 to 103.4 bar		55.0 to 103.4 bar	
Relieving pressure/fully open pressure	Set pressure +10%					
Reseating pressure	Set pressure -15%					

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.

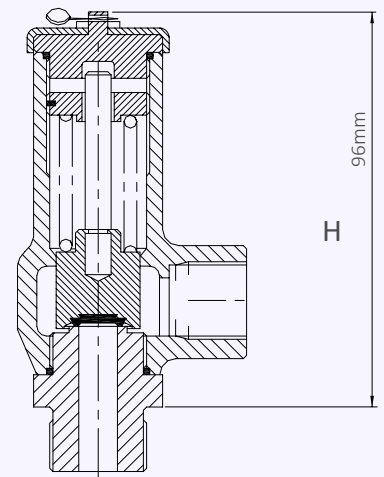
## Standard INLET Connection Types

- BSP parallel male thread
- BSP taper male thread
- NPT male thread

## Standard OUTLET Connection Types

- BSP parallel female thread
- NPT female thread

## Valve Drawing



## Valve Selection Guide

Valve type	Inlet Size	Inlet Thread Type	Outlet Thread Type	Seal Material	Set pressure
33020, 34020 or 34320 (see materials)	Select inlet size from above table	Select Inlet Thread type	Select Outlet Thread type	See table	Set pressure from available range

EAC marking available upon request


**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	33020	1/2"	NPT	NPT	Viton	100 bar
	Valve Type	Inlet Size	Inlet Thread Type	Outlet Thread Type	Seal Material	Set Pressure

Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour  
 Type 33020, 34020 & 34320: Flow rates at 10% above the set pressure



Set Pressure			Bore Size (D0)			
			7.14mm			
bar	psi		Nm <sup>3</sup> /Hour			
55	797.5		1124.0			
60	870		1224.5			
65	942.5		1325.0			
70	1015		1425.5			
75	1087.5		1526.0			
80	1160		1626.5			
85	1,232.50		1727.0			
90	1305		1827.5			
95	1377.5		1928.0			
100	1450		2028.5			
103.4	1499.3		2096.9			

For any intermediate pressures/flows please contact Seetru

# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air & gas

hydrogen

## Type 33110 / 34110 / 34410

Safety valves made with a Brass or Stainless Steel body and Stainless Steel inlets <  
Enclosed discharge valve with threaded connections <  
Elastomer rubber sealing <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Pneumatic systems
- Medical gases/Technical gases
- Hydrogen (with 316 stainless steel inlet)

### Specifications

- Inlet connections: 3/8" to 1/2" threaded inlet connections
- Temperature range: -40°C to +200°C  
(depending on body rubber seal material)
- Pressure range: 27 to 36 & 48.3 to 241.3 bar

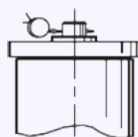
### Materials of Construction

Component	Valve Type	Material	Grade
Inlet	33110	Stainless Steel	303
	34110	Stainless Steel	303
	34410	Stainless Steel	316
Body	33110	Brass	CZ122
	34110	Stainless Steel	316
	34410	Stainless Steel	316
Spring	All	Stainless Steel	302

Drawing showing all component materials available upon request.

### Top fitting

**Sealed Cap** (gas tight cap)



### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- EAC

CE UK EAC

### Seal Materials

This valve using metal to metal sealing. There is a choice of o'ring used for the sealed cap/lever.

O'ring material – Top cap	Temperature Range
Viton® (FKM)	-15°C to +200°C
Nitrile (NBR)	-40°C to +120°C

Standard seal materials shown, others are available.

THESE VALVES SHOULD ONLY BE TESTED FOR SET PRESSURE ON LIQUID PRIOR TO FINAL INSTALLATION. VALVES THAT ARE TESTED ON AIR & FULLY LIFTED WILL CAUSE DAMAGE TO THE SEALING FACE. [RETURN TO CONTENTS PAGE](#)

## Technical information by bore size

Bore size	3.66mm (33110)		3.66mm (34110)		3.66mm (34410)	
	Inlet Size	Outlet Size	Inlet Size	Outlet Size	Inlet Size	Outlet Size
Inlet Size	3/8"	1/2"	3/8"	1/2"	3/8"	1/2"
Outlet Size	3/8"	1/2"	3/8"	1/2"	3/8"	1/2"
Flow Area	10.52mm <sup>2</sup>		10.52mm <sup>2</sup>		10.52mm <sup>2</sup>	
H - Height	92mm		92mm		92mm	
TÜV alloted outflow coefficient	0.73		0.73		0.73	
Weight (approximate) Kg	0.8		0.8		0.8	
Set Pressure range - PED (CE) bar	27 to 36 & 48.3 to 241.3 bar		27 to 36 & 48.3 to 241.3 bar		27 to 36 & 48.3 to 241.3 bar	
Relieving pressure/fully open pressure	Set pressure +10%					
Reseating pressure	Set pressure -10%					

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.

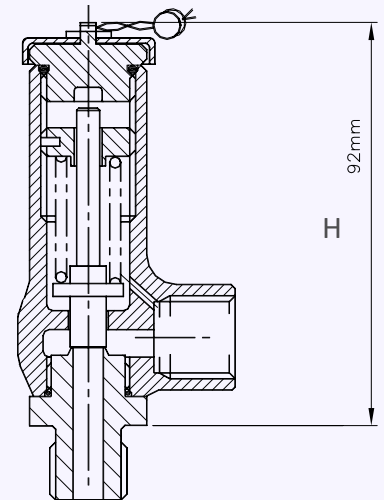
## Standard INLET Connection Types

- BSP parallel male thread
- BSP taper male thread
- NPT male thread

## Standard OUTLET Connection Types

- BSP parallel female thread
- NPT female thread

## Valve Drawing



## Valve Selection Guide

Valve type	Inlet Size	Inlet Thread Type	Outlet Thread Type	Seal Material	Set pressure
33110, 34110 or 34410 (see materials)	Select inlet size from above table	Select Inlet Thread type	Select Outlet Thread type	See table	Set pressure from available range

EAC marking available upon request


**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	33110	1/2"	BSP parallel	BSP parallel	Viton	100 bar
	Valve Type	Inlet Size	Inlet Thread Type	Outlet Thread Type	Seal Material	Set Pressure

Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour  
 Type 33110, 34110 and 34410: Flow rates at 10% above the set pressure



Set Pressure			Bore Size (D0)			
			3.66mm			
bar	psi		Nm <sup>3</sup> /Hour			
27	391.5		160.7			
30	435		177.9			
33	478.5		195.2			
36	522		212.5			
48	696		281.5			
50	725		293.0			
60	870.00		350.6			
70	1015		408.1			
80	1160		456.7			
90	1305		523.2			
100	1450		580.8			
150	2175		868.5			
200	2900		1156.2			
241	3494.5		1392.1			

For any intermediate pressures/flows please contact Seetru

for compressed air or gases

cryogenic & liquefied gas

refrigeration

hydrogen

## Type 329

Safety valves with either Bronze or Stainless Steel body <  
Enclosed discharge valve with threaded connections <

### Example Applications

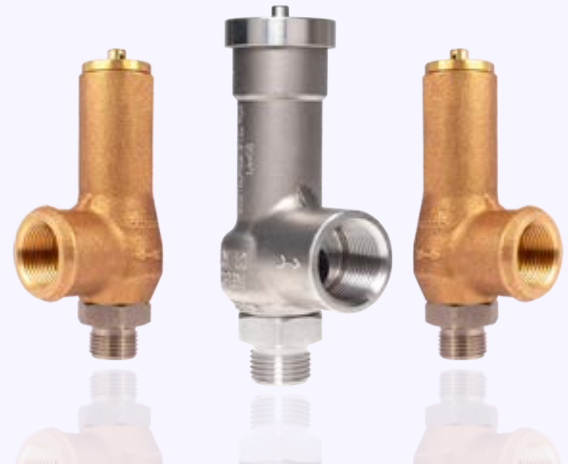
- Air/Gas systems
- Natural Gas
- CNG/LNG
- Pressure vessels
- Medical gases
- Technical Gases
- CO2 refrigeration
- Ammonia refrigeration (Stainless steel)
- Cryogenic applications
- Liquefied gases

### Specifications

- Inlet connections: 3/8" to 3/4"
- Temperature range: -196°C to +70°C
- Pressure range: 53.0 to 370.0 bar

### Materials of Construction

Component	Material	Grade
Inlet	Stainless Steel	1.4401 (316)
Body	Bronze	C83600
	Stainless Steel	1.4408 (316)
Internal Parts	Brass	BS EN 12164 CW614N
	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)



### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- ASME BPVC VIII.1 & XIII (UV)
- EAC
- CRN



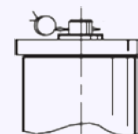
### Seal Materials

Seal Material	Temperature Range
PTFE (up to 202 bar) PPS (202 to 370 bar)	-196°C to +70°C

Standard seal materials shown, others are available.

### Top Fitting Options

- Standard Option  
Sealed Cap (gas tight cap)

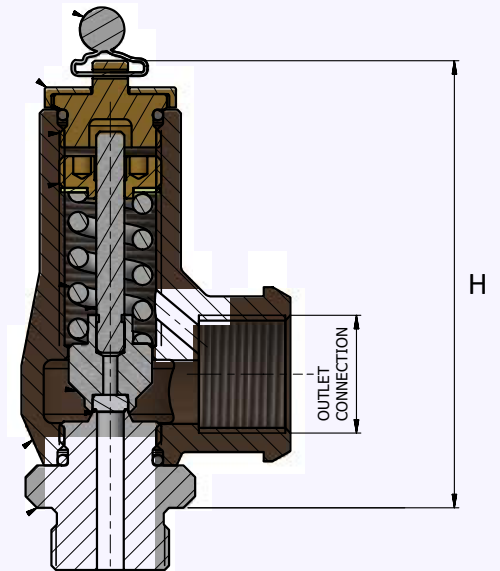


## Technical information by bore size

Bore size	6mm		
Inlet Size	3/8"	1/2"	3/4"
Outlet Size	3/4"		
Flow Area	28.2mm <sup>2</sup>		
H - Height	100mm (53.0 to 240.0 bar) 114mm (240.0 to 370.0 bar)		
TÜV allotted outflow coefficient	0.77		
NB Certified rated slope (ASME)	0.7scfm/psia		
Weight (approximate) Kg	0.8		
Set Pressure range - PED (CE) bar	53.0 to 370.0		
Set Pressure range - ASME (UV) psi	768.5 to 5365.0		
Relieving pressure/fully open pressure	Set pressure +10%		
Reseating pressure	Set pressure -15%		

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.

## Valve drawing



## Standard Thread Connection Types

- BSP Parallel male thread
- BSP Taper male thread
- NPT male thread

## Standard Outlet Connection Types

- BSP Parallel female thread
- NPT female thread

## Valve Selection Guide

Valve Type	Body Material	Approval Required	Select Bore	Inlet Size	Inlet Thread Type	Outlet Thread Type	Easing Gear	Seal Material
329	Stainless Steel Bronze	PED (CE) PED (CE), ASME (UV, NB), CRN	6mm	Select inlet size from above table	Select Inlet thread type	Select Outlet thread type	Sealed cap	PTFE

EAC marking available upon request


Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time

## Example of Valve Selection Process

Example Selection	Bronze	329	PED (CE)	6	1/2"	NPT	NPT	Sealed Cap	PTFE	175 bar
	Body Material	Valve Type	Approval	Bore = 6mm	Inlet Size	Inlet Thread Type	Outlet Thread Type	Top Fitting	Seal	Set Pressure

Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour  
 Type 329: Flow rates at 10% above the set pressure




Set Pressure			Bore Size (D0)			
			6mm			
bar	psi		Nm <sup>3</sup> /Hour			
53	768.5		879.6			
60	870.0		993.8			
70	1015.0		1156.9			
80	1160.0		1320.0			
90	1305.0		1483.1			
100	1450.0		1646.3			
150	2175.0		2461.9			
200	2900.0		3277.5			
250	3625.0		4093.1			
300	4350.0		4908.7			
350	5075.0		5724.4			
370	5365.0		6050.6			

For any intermediate pressures/flows please contact Seetru

Capacity Table - In accordance with ASME BPVC.XIII, AIR at 60°F and 14.7 psia/scfm. SCFM  
 Type 329: Flow rates at 10% above the set pressure



Set Pressure			Bore Size (D0)			
			6mm			
psi	bar		SCFM			
768.5	53		602			
870	60		680			
913.5	63		714			
1203.5	83		937			
1305	90		1015			
1450	100		1127			
2175	150		1685			
2900	200		2243			
2929	202		2266			
3480	240		2690			
3625	250		2802			
4350	300		3360			
5075	350		3918			
5365	370		4141			

For any intermediate pressures/flows please contact Seetru



# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air & gas

hydrogen

## Type B4605 / B6605 / 359

Safety valves made from Stainless Steel <  
Enclosed discharge valve with threaded connections <

### Example Applications

- Air/Gas compressors
- Natural Gas
- Pressure vessels
- Medical gases
- Technical Gases
- Hydrogen production/generation

### Specifications

- Inlet connections: 3/8" and 1/2"
- Temperature range:
  - 0°C to 200°C (with 1.4057 (431) stainless steel inlet)
  - -50°C to 150°C (with 1.4401 (316) stainless steel inlet)
- Pressure range: 35.0 to 500.0 bar

### Materials of Construction

Component	Material	Grade
Inlet	Stainless Steel	1.4057 (431)
		1.4401 (316)
Body	Stainless Steel	1.4408 (316)
Internal Parts	Stainless Steel	1.4305 (303)
Spring	Stainless Steel	1.4310 (302)

### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- ASME BPVC VIII.1 & XIII (UV)
- EAC
- CRN



### Inlet Seat Material

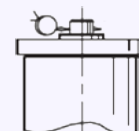
**This valve seals using a metal ball design**

Seal Material	Temperature Range
Stainless steel 1.4057 (431)	0°C to +200°C
Stainless steel 1.4401 (316)	-50C to +150°C

Standard seal materials shown, others are available.

### Top Fitting Options

- **Standard Option**  
Sealed Cap (gas tight cap)

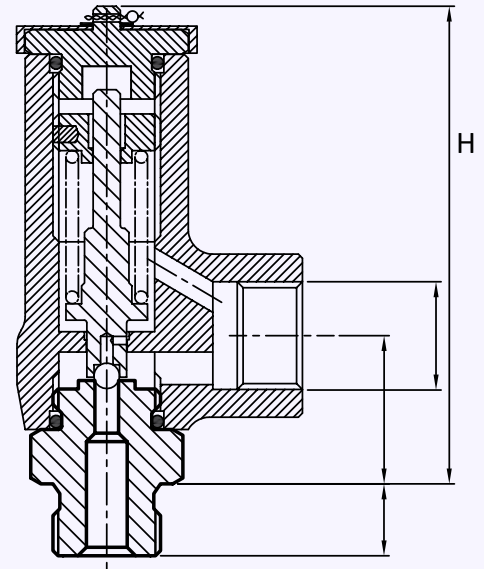


## Technical information by bore size

Bore size	4.6mm	
Inlet Size	3/8"	1/2"
Outlet Size	1/2"	
Flow Area	16.6mm <sup>2</sup>	
H - Height	96mm	
TÜV alloted outflow coefficient	0.402	
NB Certified rated slope (ASME)	0.34 scfm/psia	
Weight (approximate) Kg	0.8	
Set Pressure range - PED (CE) bar	35.0 to 500.0	
Set Pressure range - ASME (UV) psi	507.5 to 7250.0	
Relieving pressure/fully open pressure	Set pressure +10%	
Reseating pressure	Set pressure -10%	

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced

## Valve drawing



### IMPORTANT NOTE:

These valves should only be tested for set pressure on liquid prior to final installation. Valves that are tested on air & fully lifted will cause damage to the sealing face.

## Standard Thread Connection Types

- BSP Parallel male thread
- BSP Taper male thread
- NPT male thread

## Standard Outlet Connection Types

- BSP Parallel female thread
- NPT female thread

## Valve Selection Guide

Valve Type	Inlet Material	Approval Required (Available for both Inlet materials)	Select Bore	Inlet Size	Inlet Thread Type	Outlet Thread Type	Easing Gear	Seal Material
B6605	Stainless Steel 1.4057 (431)	PED (CE)	4.66mm	Select inlet size from above table	Select Inlet thread type	Select Outlet thread type	Sealed cap	Metal ball seal
B4405	Stainless Steel 1.4401 (316)	PED (CE)						
B6105	Stainless Steel 1.4057 (431)	PED (CE), ASME (UV, NB), CRN						
B4105	Stainless Steel 1.4401 (316)	PED (CE), ASME (UV, NB), CRN						

EAC marking available upon request

\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.

## Example of Valve Selection Process

Example Selection	1.4057 (431)	359	PED (CE)	4.66	1/2"	BSP taper	BSP	Sealed Cap	Ball Seal	385 bar
	Inlet Material	Valve Type	Approval	Bore = 4.6mm	Inlet Size	Inlet Thread Type	Outlet Thread Type	Top Fitting	Seal	Set Pressure

## Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
bar	psi		Nm <sup>3</sup> /Hour			
35	507.5	4.6mm	179.8			
50	725.0	4.6mm	254.9			
100	1450.0	4.6mm	505.2			
150	2175.0	4.6mm	755.5			
200	2900.0	4.6mm	1005.8			
250	3625.0	4.6mm	1256.0			
300	4350.0	4.6mm	1506.3			
350	5075.0	4.6mm	1756.6			
400	5800.0	4.6mm	2006.9			
450	6525.0	4.6mm	2257.2			
500	7250.0	4.6mm	2507.5			

For any intermediate pressures/flows please contact Seetru

## Capacity Table - In accordance ASME section VIII Div I, AIR at 60°F and 14.7 psia/scfm. SCFM Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)				
psi	bar		SCFM			
507.5	35	4.6mm	195			
725	50	4.6mm	276			
1450	100	4.6mm	547			
2175	150	4.6mm	818			
2900	200	4.6mm	1090			
3625	250	4.6mm	1361			
4350	300	4.6mm	1632			
5075	350	4.6mm	1903			
5800	400	4.6mm	2174			
6525	450	4.6mm	2445			
7250	500	4.6mm	2716			

For any intermediate pressures/flows please contact Seetru

# Enclosed Discharge Safety Relief Valves

Seetru Limited

for compressed air or gases

cryogenic & liquefied gas

hydrogen

## Type

**94605 / 946H5 / 95605 / 956H5**

Safety valves made from stainless steel <  
Enclosed discharge with threaded connections <

## Example Applications

- Air/Gas Compression
- Air/Gas Boosters
- Natural Gas
- Pressure Vessels
- Hydrogen Production
- Hydrogen Storage

## Specifications

- **Inlet Connections**
    - 1/2" NPT, BSP & BSPT
    - 9/16" Cone & Thread
    - 3/4" Cone & Thread
  - **Outlet Connections**
    - 1/2" NPT & BSP
    - 3/4" NPT & BSP
    - 1" NPT & BSP
  - **Temperature Range**
    - 0° to 300°C as standard
    - -196°C to 300°C H<sub>2</sub> option
  - **Pressure Range**
    - 35.0 to 515 bar (9\*605)
    - 35.0 to 1100 bar (9\*6H5)
- \*Maximum set pressure for steam is 85 bar

## Materials of Construction

Component	Valve Type 2nd Digit	Material	Grade
Seat	4	Stainless	1.4057
	5		S20910
Body	4 & 5	Stainless	1.4401
Disc	4	Stainless	1.4057
	5	Ceramic	
Spring	4 & 5	Stainless	1.4401
Gaskets	4 & 5	PTFE	

For Hydrogen applications above 515 bar, a ceramic disc is required, use type 956H5



## Key Features

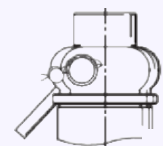
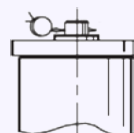
- Compact and space saving design
- Designed and built for repeatable operation
- Advanced sealing technology with super-lapped hard-faced seat and disc, designed to offer robust high-performance sealing
- Orientable gas-tight packed lever option (9\*6H5 only)
- Simple and robust design with three moving parts
- Maintenance friendly design
- All wrought construction with no castings
- Designed with Hydrogen embrittlement resistant materials (H<sub>2</sub> option)

## Approvals

- BS EN ISO 4126-1
  - PED 2014/68/EU
    - Module B – TÜV Rheinland
    - Module D – LRQA Deutschland
  - PE(S)R 2016 (UKCA)
    - Module B – TÜV UK
    - Module D – LRQA UK
  - Seat tightness better than API 527
- EAC marking available upon request

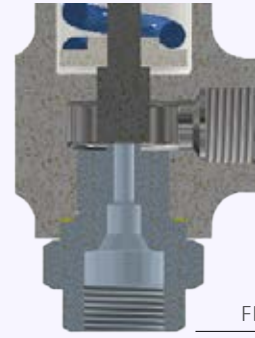
## Top Fitting Options

- Sealed Cap (gas tight cap)
- Sealed lever (gas tight)



## Technical information by bore size

Model No.	9*605			9*6H5	
Bore	4.6mm				
Inlet	1/2"	9/16"	1/2"	9/16"	3/4"
Outlet	1/2"		1/2"	3/4"	1"
Flow Area	16.6 mm <sup>2</sup>				
Height H	158		202		
Kdr	0.75				
Weight	1.5 kg		2.8 kg		



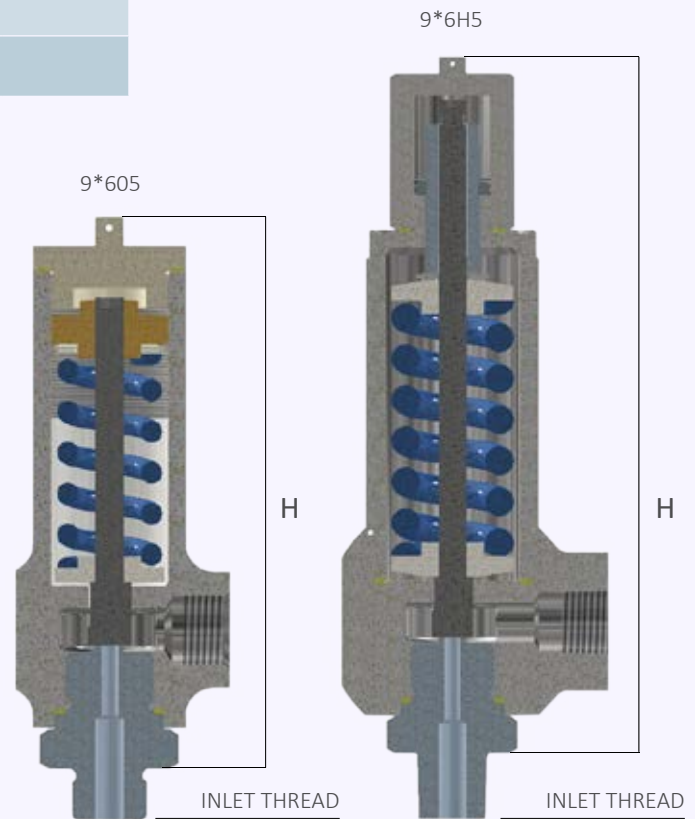
FEMALE CONE & THREAD INLET

## Standard INLET Connection Types

- BSP (male) max 515 bar
- BSPT (male) max 515 bar
- NPT (male) max 1034 bar
- Cone & Thread (female) max 1100 bar

## Standard OUTLET Connection Types

- BSP (female)
- NPT (female)



INLET THREAD

INLET THREAD

Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.

## Valve Selection Guide - Type 94605, 946H5, 95605 & 956H5

Valve type	H <sub>2</sub> or low temperature valve type 2 <sup>nd</sup> digit		Inlet Size	Inlet Connection	Outlet Size	Outlet Connection	Easing Lever (Sealed Lever)
	Yes	No					
9*605	5	4	9/16" & 3/4"	C&T	1/2"	NPT, BSP	9*6H5 only
9*6H5			1/2"	NPT, BSP, BSPT			
			1/2"		C&T		
			9/16" & 3/4"	1/2", 3/4", 1"			


## Example of Valve Selection Process for Order Code 956H5F1297


Example Selection	Approval	Materials from above Table	Bore	Inlet Size	Inlet Thread	Outlet Size	Outlet Thread	Duty	Set Pressure
	PED and UKCA (ASME in process)	5 = Body=1.4401, Seat=S20910, Disc=Ceramic	4.6mm	1/2"	NPT	3/4"	NPT	Hydrogen	1000 bar

## Capacity Table -Per EN 4126-7 and at 10% Overpressure

Type 94605 / 946H5 / 95605 / 956H5: Flow rates at 10% above the set pressure.



Set Pressure 		Flow of Air
bar	psi	Nm <sup>3</sup> /hr
35	507.5	335.5
50	725	475.5
75	1087.5	709.0
100	1450	942.5
150	2175	1409.4
200	2900	1876.4
250	3625	2343.3
300	4350	2810.3
350	5075	3277.2
400	5800	3744.2
450	6525	4211.1
500	7250	4678.1
550	7975	5145.1
600	8700	5612.0
650	9425	6078.9
700	10150	6545.9
750	10875	7012.8
800	11600	7479.8
850	12325	7946.7
900	13050	8413.7
950	13775	8880.6
1000	14500	9347.6
1050	15225	9814.5
1100	15950	10281.5

Set Pressure 		Flow of Hydrogen
bar	psi	Nm <sup>3</sup> /hr
35	507.5	1273.2
50	725	1804.9
75	1087.5	2691.1
100	1450	3577.2
150	2175	5349.5
200	2900	7121.8
250	3625	8894.1
300	4350	10666.3
350	5075	12438.6
400	5800	14210.9
450	6525	15983.3
500	7250	17755.5
550	7975	19527.8
600	8700	21300.1
650	9425	23072.4
700	10150	24844.7
750	10875	26617.1
800	11600	28389.2
850	12325	30161.5
900	13050	31933.8
950	13775	33706.1
1000	14500	35478.5
1050	15225	37250.7
1100	15950	39023.0

for compressed air or gases

steam

refrigeration

hydrogen

## Type 946 Flanged

Safety valves made from Stainless Steel <  
Enclosed discharge valve with flanged connections <  
Metal to metal sealing <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Medical gases/Technical gases
- Refrigeration (including ammonia)
- Thermal relief
- Steam systems
- Hydrogen

### Specifications

- Inlet connections: DN15 (1/2), DN20 (3/4") or DN25 (1") flange – DIN EN1092 and ANSI flanges are available
- Temperature range: -50°C to +250°C (depending on body o'ring material)
- Pressure range: 0.3 to 28.0 bar

### Materials of Construction

Component	Material	Grade
Inlet & Outlet Flanges	Stainless Steel	1.4401 (316)
Body	Stainless Steel	1.4408 (316)
Internal Parts	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)
Disc	Stainless Steel	AISI 440B

### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- EAC
- Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1



### Seal Materials

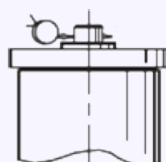
This valve using metal to metal sealing. There is a choice of o'ring used for the sealed cap/lever.

O'ring material – Top cap	Temperature Range
Viton® (FKM)	-20°C to +250°C
Nitrile (NBR)	-30°C to +150°C
Silicone	-50°C to +250°C
EPDM	-40°C to +150°C

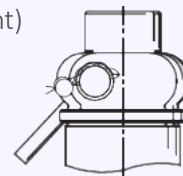
Standard seal materials shown, others are available.

### Easing Gear / Lifting Gear / Top Fitting Options

- Sealed Cap (gas tight cap)



- Sealed lever (gas tight)



## Technical information by bore size

Bore size	10mm (94610)			15mm (94615)
Inlet Size	DN15 (1/2")	DN20 (3/4")	DN25 (1")	DN25 (1")
Outlet Size	DN25 (1")			DN40 (1 1/2")
Flow Area	78.5mm <sup>2</sup>			177mm <sup>2</sup>
H - Height (Sealed Lever version)	200mm			253mm
TÜV allotted outflow coefficient	0.85 (0.7 below 0.8 bar)			0.85 (0.7 below 0.8 bar)
Weight (approximate) Kg	3.0			5.3
Set Pressure range - PED (CE) bar	0.3 to 28.0			0.3 to 28.0
Relieving pressure/fully open pressure	Set pressure +10% (0.1 bar below 1.0 bar)			
Reseating pressure	Set pressure -10% (0.3 bar below 3.0 bar)			

- TÜV allotted outflow coefficients for pressures above 3.0 bar, for lower pressures please see the flow rate tables or contact Seetru.
- Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced.
- Stable operation on flows down to 50% of valve rated capacity.
- Leak tightness at 90% set pressure to API 527 and in accordance with EN ISO 4126-1.

## Standard INLET Connection Types

- DIN EN1092 Flange PN16, PN25 or PN40
- ASME Flange CL150, CL300 or CL600

## Standard OUTLET Connection Types

- DIN EN1092 Flange PN16, PN25 or PN40
- ASME Flange CL150 or CL300

## Valve Selection Guide

Valve type	Select Bore	Inlet Size	Inlet Flange Type	Outlet Flange Type	Easing Gear	O'ring material (for cap)
946	Select bore size from above table	Select inlet size from above table	Select Inlet Flange type	Select Outlet Flange type	Select easing gear/top fitting	See table

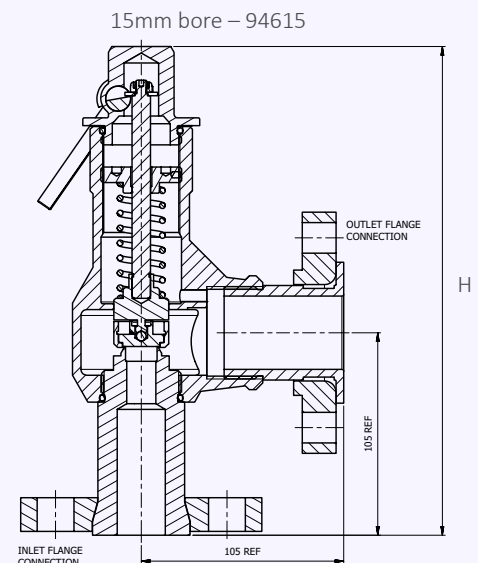
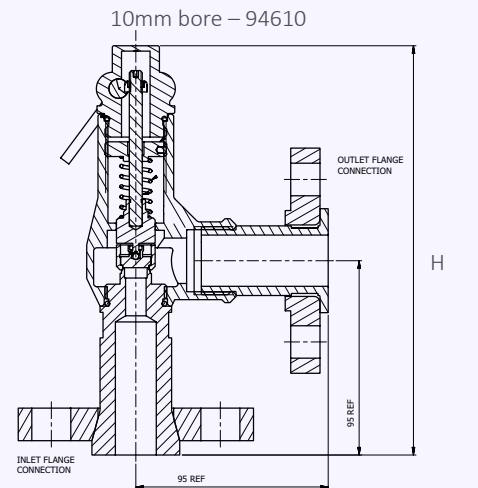
EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	946	10	DN20	DIN EN1092 Flange PN16	DIN EN1092 Flange PN16	Sealed Lever	Viton	10.5 bar	16.2 bar
	Valve Type	Bore = 10mm	Inlet Size	Inlet Flange Type	Outlet Flange Type	Top Fitting	O'ring	Set Pressure	Set Pressure

## Valve Drawing





## Capacity Table - In accordance with TÜV, AIR at 0°C and 1013mbar. Normal m<sup>3</sup>/hour Type 946: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm		
bar	psi	Nm <sup>3</sup> /Hour	Nm <sup>3</sup> /Hour		
0.3	4.35	48.5	109.2		
0.5	7.25	59.0	132.9		
1	14.5	96.1	216.2		
2	29	146.1	328.7		
3	43.5	196.1	441.3		
4	58	246.1	553.8		
5	72.5	296.1	666.4		
6	87.00	346.2	778.9		
7	101.5	396.2	891.4		
8	116	446.2	1004.0		
9	130.5	496.2	1116.5		
10	145	546.7	1229.1		
15	217.5	796.3	1791.8		
20	290	1046.4	2354.6		
25	362.5	1296.5	2917.3		
28	406	1446.6	3254.9		

For any intermediate pressures/flows please contact Seetru

## Capacity Table - In accordance with TÜV, STEAM. Kg/hour Type 946: Flow rates at 10% above the set pressure



Set Pressure		Bore Size (D0)			
		10mm	15mm		
bar	psi	Kg/hour of Steam	Kg/hour of Steam		
0.3	4.35	37.6	84.5		
0.5	7.25	46.6	104.8		
1	14.5	76.6	172.5		
2	29	115.1	259.0		
3	43.5	153.2	344.6		
4	58	190.9	429.7		
5	72.5	228.6	514.3		
6	87.00	266.1	598.6		
7	101.5	303.4	682.6		
8	116	340.6	766.5		
9	130.5	377.9	850.4		
10	145	415.1	933.9		
15	217.5	600.3	1350.7		
20	290	785.4	1767.2		
25	362.5	970.5	2183.7		
28	406	1081.9	2434.4		

For any intermediate pressures/flows please contact Seetru

for compressed air & gas

hydrogen

## Type 64613 / 64113 Flanged

Safety valves with Stainless Steel body <  
Enclosed discharge valve with flanged connections <

### Example Applications

- Air / gas compressors
- Pressure vessels
- Pneumatic systems
- Medical gases
- Technical gases

### Specifications

- Inlet connections: DN20 (3/4") or DN25 (1") DIN or ANSI flanges
- Temperature: -40°C to +200°C (depending on seal material)
- Pressure range: 0.32 to 49.0 bar

### Materials of Construction

Component	Material	Grade
Inlet	Stainless Steel	1.4401 (316)
Body	Stainless Steel	1.4408 (316)
Internal parts	Stainless Steel	1.4401 (316)
Spring	Stainless Steel	1.4310 (302)

### Approvals

- Designed in accordance with BS EN ISO-4126-1 &-7
- PED 2014/68/EU (CE)
- PE(S)R UK SI 2016 No. 1105 (UKCA)
- ASME BPVC VIII.1 & XIII (UV)
- CRN
- EAC



### Seal Materials

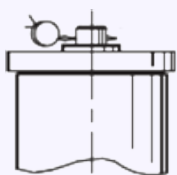
Seal Material	Temperature Range
Viton® (FKM)	-15°C to +200°C
Nitrile (NBR)	-40°C to +120°C

Standard seal materials shown, others are available.

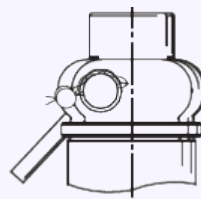


### Easing Gear / Lifting Gear Options

**Standard Option:** Sealed Cap (gas tight cap)



**Other Option:** Sealed lever (gas tight)

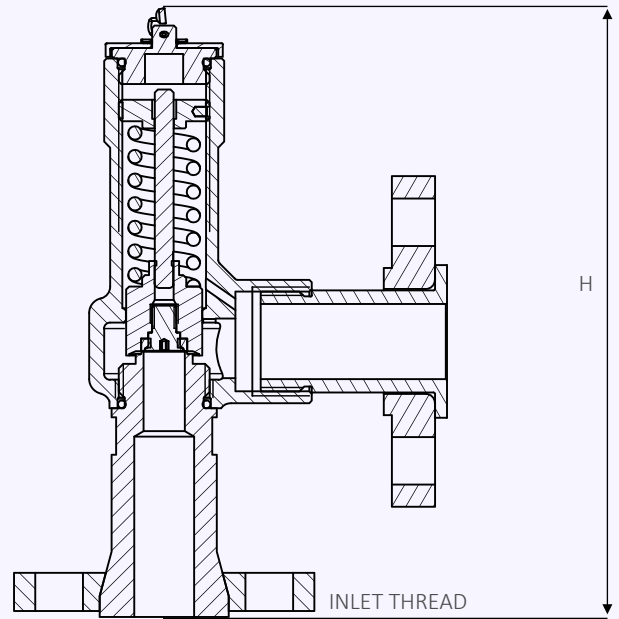


## Technical information by bore size

Bore size	13.7mm	
Inlet Size	DN20 (3/4")	DN25 (1")
Outlet Size	DN25 (1")	
Flow Area	147.4mm <sup>2</sup>	
H - Height (Sealed cap version)	197mm (up to 35 bar) 226mm (35-49 bar)	
TÜV allotted outflow coefficient	0.77	
NB Certified rated slope (ASME)	3.47 scfm/psia	
Weight (approximate) Kg	3.2	
Set Pressure range - PED (CE) bar	0.32 to 49.0	
Set Pressure range - ASME (UV) psi	20.3 to 710.5	
Relieving pressure/fully open pressure	Set pressure +10% (0.3 bar below 1.4 bar)	
Reseating pressure	Set pressure -10% (0.3 bar minimum)	

Maximum permissible built up back pressure = 10% of set pressure at or below which flow is not reduced. Stable operation on flows down to 50% of valve rated capacity.

## Valve Drawing



## Standard Thread Connection Types

- DIN EN1092 Flange PN16, PN25 or PN40
- ASME Flange CL150, CL300 or CL600

## Standard Outlet Connection Types

- DIN EN1092 Flange PN16, PN25 or PN40
- ASME Flange CL150, CL300 or CL600

## Valve Selection Guide

Approval Required	Valve type	Inlet Size	Inlet Flange Type	Outlet Flange Type	Easing Gear	Seal Material
PED (CE)	64613	Select inlet size from above table	Select Inlet flange type	Select Outlet flange type	Select easing gear/top fitting	Viton® (FKM)
PED (CE), ASME (UV) & CRN	64113					Nitrile (NBR)
						Other

EAC marking available upon request

**\*Please send your selected details to Seetru and we can provide the full ordering code, price and lead-time.**

## Example of Valve Selection Process

Example Selection	PED, ASME & CRN	64113	DN20	DIN EN1092 Flange PN16	DIN EN1092 Flange PN16	Sealed Cap	Viton	3.5 bar
	Approval	Valve Type	Inlet Size	Inlet Flange Type	Outlet Flange Type	Easing Gear	Seal	Set Pressure



for compressed air or gases

cryogenic & liquefied gas

refrigeration

hydrogen

## COV10 / COV13 / COV30

Solutions for plant and process efficiency

Change-over valves (sometimes referred to as selector valves or three-way valves) enables the switching of flow from one safety valve to another. Typically used where plant shutdown is impossible or undesirable for process, engineering or commercial reasons. With change-over valves it is possible to switch over between parallel safety valves without interrupting operation, so that maintenance work can be carried out on each safety valve in turn. Seetru change-over valves in combination with our safety valves provide the best solution for plant safety and efficiency. Seetru products are widely recognised for their exceptional quality and reliability.

### Features



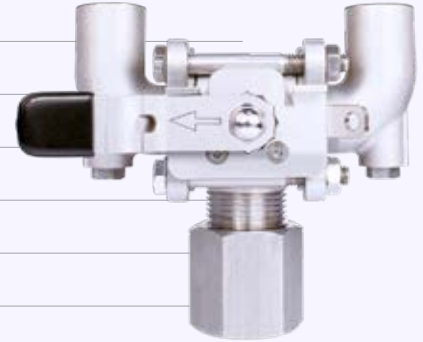
### Fluid Mahcanics



The Seetru Change-Over Valves were designed and developed using Computational Fluid Dynamics (CFD) in order to simulate and optimise the flow of the fluids through the valve.

## Specifications: COV10

System Connections	½" to 1" BSP, BSPT & NPT
Valve Connection	½" NPT or 3/4" BSP (with or without orientators)
Change-Over Valve Kv	10.0 (Cv= 11.5)
Materials of Construction	Stainless Steel
Seat Materials	25% Carbon filled P.T.F.E.
Temperature Range	-196°C to +200°C
Max Design Pressure	75 bar
Material Certification	BS EN ISO10204 3.1 Pressure Retaining Parts (Optional Extra)
Safety Valve Orifice Size	Up to 10mm (Full Lift Type)
Maximum Safety Valve Set Pressure	75 bar



## Specifications: COV13

System Connections	Please contact Seetru for information
Valve Connections	Please contact Seetru for information
Materials of Construction	Stainless Steel with Mild Steel or Stainless Steel Internals
Seat Materials	Elastomer P.T.F.E
Maximum Safety valve Set Pressure	65.0 bar
Temperature Range	-30 °C to 200 °C (subject to seal material)



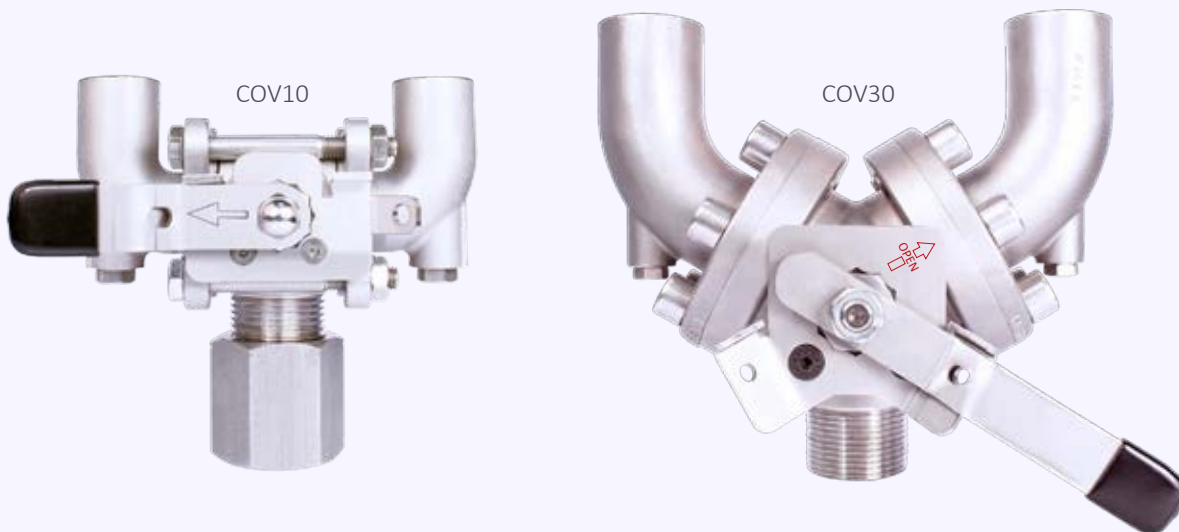
## Specifications: COV30

System Connections	1" to 1-1/2" BSP, BSPT, NPT, CL150 to CL600 & PN16 to PN100
Valve Connections	¾" to 1" BSP, BSPT, NPT (with or without orientators), CL150 to CL600 & PN16 to PN100
Change-Over Valve Kv	30
Materials of Construction	CF8M/316/1.4401
Seat Materials	25% Carbon filled P.T.F.E.
Temperature Range	-196°C to +200°C
Max Design Pressure	CL600 or PN100
Material Certification	BS EN ISO10204 3.1 Pressure Retaining Parts (Optional Extra)
Safety Valve Orifice Size	Up to 18mm (Full Lift Type)
Maximum Safety Valve Set Pressure	100 bar

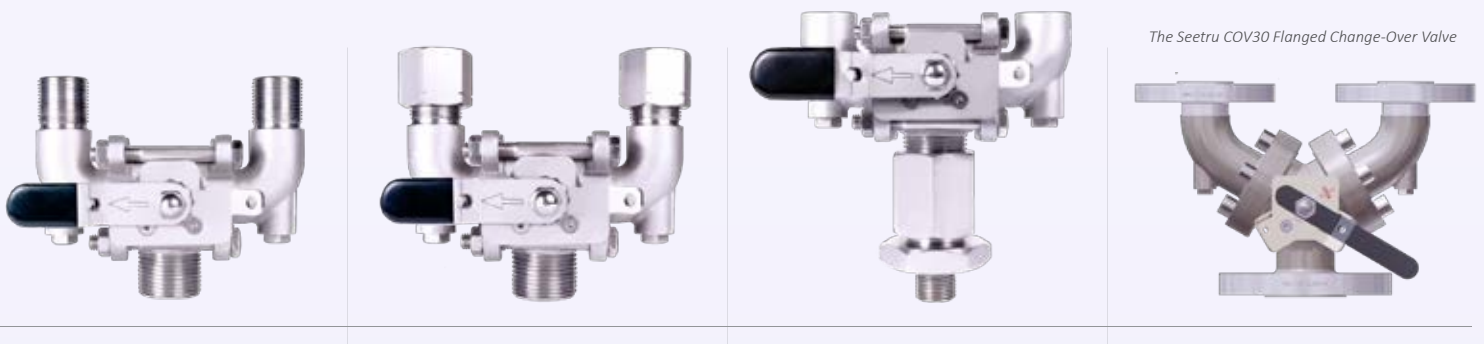


## Operation Instructions: COV10 / COV30

1	Unlock handle if locking device fitted (recommended).
2	Starting in a motion away from the duty SRV, rotate handle through 180° (COV10) or 120° (COV30), either clockwise or anticlockwise dependent upon start starting position.
3	Once fully rotated, lock in position if locking device fitted (recommended).
4	If the now standby SRV is to be remove: with caution, un-tighten vent nut of standby Change-over arm by 1 to 2 revolutions to exhaust trapped fluid from change-over arm.
5	Once trapped fluid has de-pressurised, re-tighten vent plug with a tightening torque of 3.0 Nm.
6	Remove the standby SRV.
7	The user may plug the vacant outlet if desired, however sufficient safety procedures (for example Lock out Tag out) must be in place to prevent inadiv inadvertent change over, thus rendering the system un-protected against excessive pressure. If the outlet is plugged, vent arm of pressure, as previously described, prior to removal.



## Fittings, Adaptors and Connections



- The Seetru COV10 and COV30 Change-Over Valves can be supplied with a range of fittings and adaptors to provide compatibility with a large variety of systems.
- The COV30 is also available with flanged connections (A or PN).

## Valves from Stock: Same-Day-Despatch

Our products are recognised globally for their exceptional quality and reliability, and in recent years Seetru have worked hard to maximise the efficiency of our manufacturing processes, to ensure that we are able to meet demands for supply and distribution. We now hold a large variety of safety valves in stock, allowing customers to purchase certain quantities from our website, and see them despatched on the same day.

Seetru offer atmospheric discharge safety valves and pipped discharge safety valves in brass / bronze or stainless steel. The Seetru LGS® range of pressure relief valves (for liquid, steam, and gasses) are available in bronze construction, with open-lever and sealed-cap options. These valves can be fitted with PTFE or EPDM seals, with both types having the WRAS approval- for installation on public water supply systems.

Seetru also operate a standardised three-day-despatch delivery service, which covers the entire range of valves we manufacture.



### Safety Valve Testing Equipment: The Seetru Quicktester™

This compact, lightweight and portable design is very robust and able to meet the demands of a busy maintenance workshop or mobile operation. The Seetru Quicktester™ can be used with plant generated air supplies or with mobile bottled gas. This test-bench can be supplied with a range of adaptors allowing connection between 1/4" to 1" BSP as standard, additional adaptors are available increasing the connection sizes up to 2" BSP. The Quicktester™ is also available with NPT connection adaptors upon request. It is suitable for use with a wide range of elastomer sealed valves

## Liquid Level Gauges

There are many industrial applications that require the monitoring of the liquid level in tanks. While the function of a level gauge is relatively simple, there are a variety of options available. The suitability and robustness of construction materials play a role in determining which gauge is required, as do the operating temperature and pressure requirements. Seetru liquid level gauges are primarily of two types, sight gauges and magnetic float by-pass gauges. Many of the Seetru gauges are direct reading though most have optional electronic remote reading systems and computer interfaces. The range includes the Quickmount, Seemag and CPI gauges for industrial and chemical applications and the Seeflex and Seemag for marine applications.