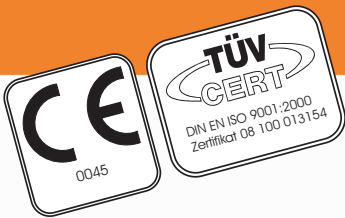
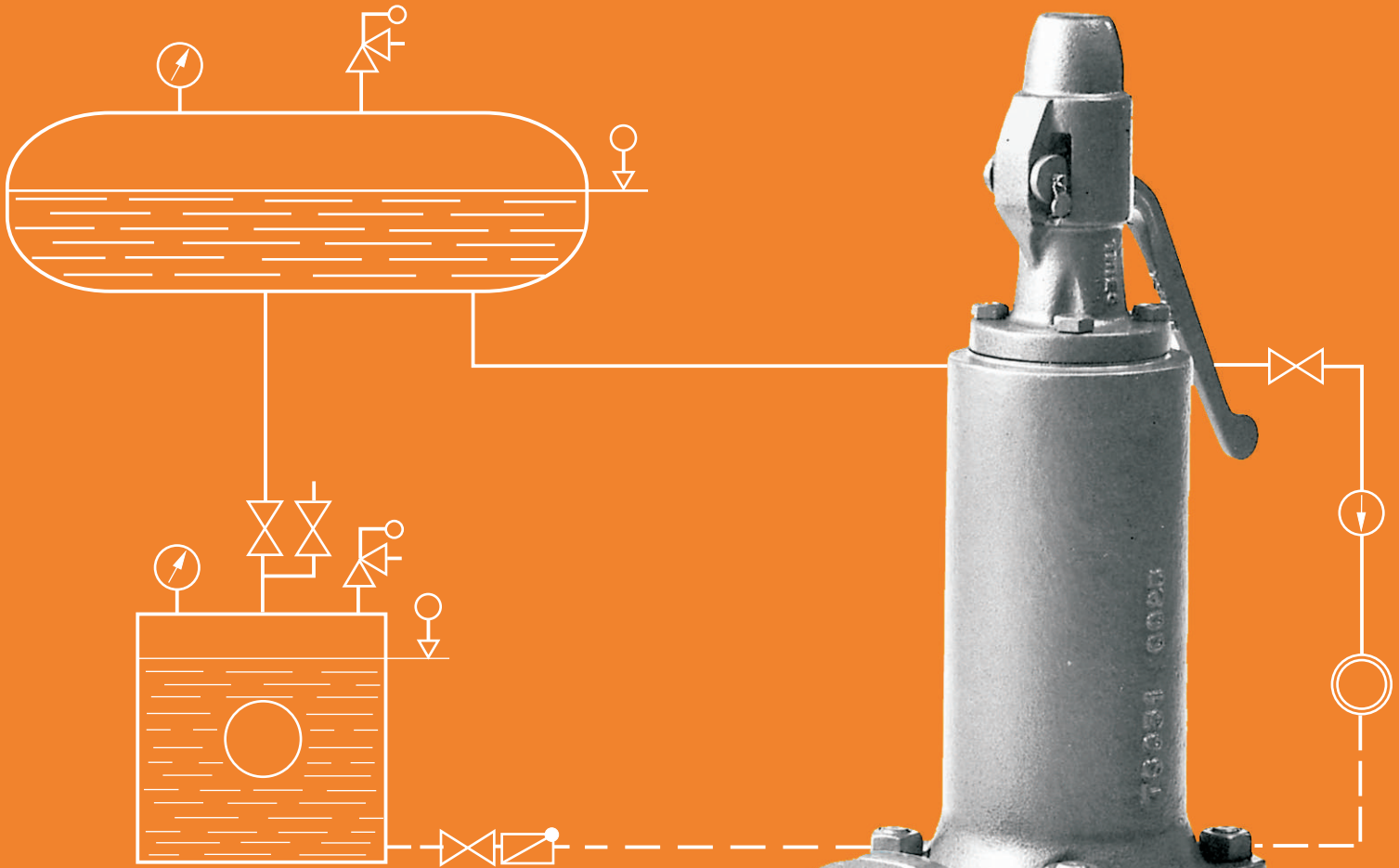


Thies Armatur



High-efficiency

EN 12828/TRD 721

Response overpressure 0,5 and 1 bar

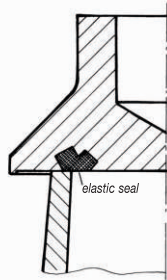
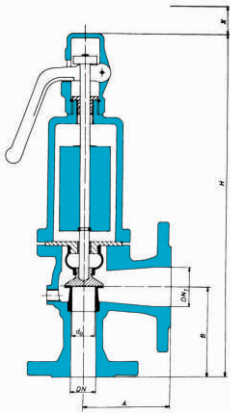


Safety Valves



390

with closed bonnet

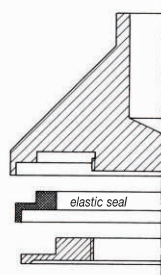
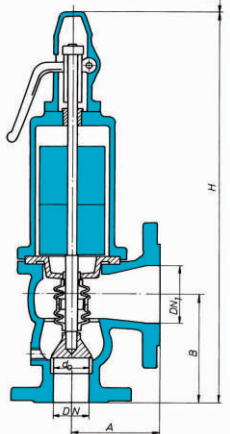


response overpressure:
0,1 - 0,5 bar

Series 390
nom. diam. 25 to 100

391

with closed bonnet



response overpressure:
0,1 - 0,5 bar

Series 391
nom. diam. 125 to 150

Diaphragm type High-efficiency Safety Valves

Application: These safety valves are for blowing-off saturated steam from pressure generators. THIES-diaphragm high-efficiency safety valves meet the following German requirements: the AD Specification A 2 for "Safety Valves", the Technical rules for steam boilers (TRD), the Safety Valve Code acc. to EN 12828. **Response overpressure: 0,5 bar, alternatively: 0,1-0,5 bar.**

Proof marks for these valves, as follows, were issued by the official German Technical Inspection Authority (VdTÜV):

Series 390 (DN 25 to DN 100)
TÜV · SV · ** -368 · do · D · G · 0,5

Series 391 (DN 125 to DN 150)
TÜV · SV · ** -263 · do · D · G · 0,5

Constructions:

Weight loaded, diaphragm type, high-efficiency safety valve, angled, with highly elastic seal and metal backing in valve head.

Series 390/391 with closed bonnet

Liftable valve head. Force is transmitted centrally at the valve head via ball. Corrosion-resistant spindle guides ensure reliable and precise response of valve.

Flange connections:

Grey cast iron version: inlet and outlet as per
DIN 2533 PN 16

Spheroidal graphite iron version and cast steel version:
inlet as per DIN 2545 PN 40, outlet as per DIN 2543 PN 16

Materials:

Valve body	EN-GJL-250, EN-GJS-400-18-LT, 1.0619 or 1.4581
Protective bonnet	EN-GJL-250, EN-GJS-400-18-LT, 1.0619 or 1.4408
Valve seat	Niro 1.4021/1.4301 or 1.4541
Valve head	Niro 1.4305 or 1.4571
Spindle, polished	Niro 1.4021 or 1.4571
Guide bushes	Niro 1.4301, Ms 58 or Rg 7
Rubber diaphragm (max. 140°C)	EPDM
Load weights	EN-GJL-250 or 1.4305

Models	Order Code No.	Example of order:
Series 390 of grey cast iron	PN 16 DN 25-100 390 GN	1 x 390 GN 25
Series 391 of grey cast iron	PN 16 DN 125-150 391 GN	i.e. 1 THIES-diaphragm type high-efficiency safety valve, series 390
Series 390 of spheroidal graphite iron	PN 40 DN 25-100 390 GGG	made of grey cast iron/Niro, nom. diam. 25/40, PN 16
Series 390 of cast steel	PN 40 DN 25-100 390 SNC	response overpressure 0,5 bar.
Series 390 of stainless steel	PN 40 DN 25- 50 390 EN	
Series 391 of spheroidal graphite iron	PN 40 DN 125-150 391 GGG	
Series 391 of cast steel	PN 40 DN 125-150 391 SNC	

Blow-off rates for saturated steam, response overpressure 0.1 to 0.5 bar									
DN	25	32	40	50	65	80	100	125	150
DN ₁	40	50	65	80	100	125	150	200	250
kg/h/kw - 0,5 bar	280/173	455/281	710/438	875/540	1590/981	2410/1488	3730/2302	5500/3395	7400/4568
0,4 bar	240/148	310/191	605/373	760/469	1265/781	1930/1191	2980/1840	4917/3035	6525/4028
0,3 bar	205/127	270/167	520/321	650/401	1085/670	1650/1019	2550/1574	4200/2593	5565/3435
0,2 bar	165/102	215/133	420/259	525/324	875/540	1325/ 818	2050/1265	3376/2084	4466/2757
0,1 bar	115/ 71	150/ 93	295/182	365/225	610/377	930/ 574	1435/ 886	2357/1455	3114/1922

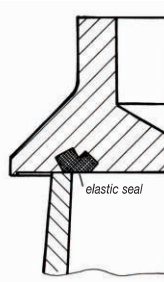
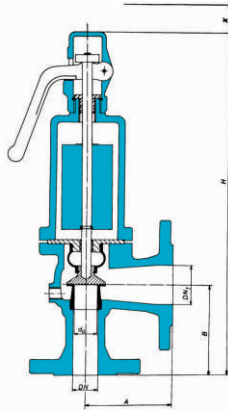
Dimensions and weights in mm and kg										
Length	A	100	110	115	120	140	160	180	200	225
Length	B	105	115	140	150	170	195	220	250	285
Overall height	H	480	500	610	625	710	735	860	980	1045
Seat diameter	do	23,5	30,0	37,9	46,5	60,0	74,0	92,0	123	148
Weight	kg	14,5	18	27,5	32	64	80	111	182	250
Clearance	x	90	90	150	150	150	150	200	260	260

As the cross sectional area of the inlet is designed to be approximately equal to that of the narrowest flow passage, a pressure drop in the feed line may affect the function of the safety valve. The feed line must be adapted to the maximum permissible pressure drop of 3% and, if necessary, enlarged appropriately. The safety valves are provided with a drain plug of size R $\frac{1}{4}$ " , up to nominal diameter 50 mm and R $\frac{3}{8}$ " from nominal diameter 65 mm upwards. The dimensions and weights quoted are non-binding. Subject to design modifications.



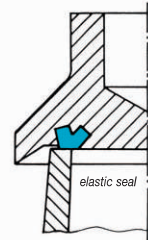
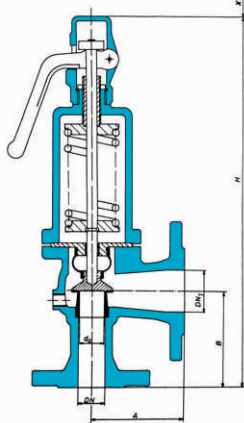
392

with closed bonnet

response overpressure:
0,55 - 1 barSeries 392
nom. diam. 25 to 50

393

with closed bonnet

response overpressure:
1 barSeries 393
nom. diam. 25 to 100
nom. diam. 125 to 150 not shown

Diaphragm type High-efficiency Safety Valves

Application: These safety valves are for blowing-off saturated steam from pressure generators.

THIES-diaphragm high-efficiency safety valves meet the following German requirements: the AD Specification A 2 for "Safety Valves", the Technical rules for steam boilers (TRD 721), the Safety Valves Code according to EN 12828.

Proof marks as follows have been issued by the official German Technical Inspection Authority (VdTÜV):

Series 392 (DN 25 to DN 50)

Response overpressure: 1 bar, alternatively: 0,55-1 bar.

TÜV · SV · ** -368 · do · D · G · 1

Weight loaded, diaphragm type, high-efficiency safety valve, angled, with highly elastic seal and metal backing in valve head.

Series 393 Response overpressure: 1 bar.

TÜV · SV · ** -368 · do · D · G · 1 (DN 25 to DN 100)

TÜV · SV · ** -775 · do · D · G · 1 (DN 125 to DN 150)

Spring loaded, diaphragm type, high-efficiency safety valve, angled, with highly elastic seal and metal backing in valve head.

Series 392/393

with closed bonnet Valve head is liftable. Force is transmitted centrally at valve head via a ball. Corrosion-resistant spindle guides ensure reliable and precise response of the

Flange connection:

Grey cast iron version: inlet and outlet as per DIN 2533 PN 16

Spheroidal graphite iron version and cast steel version: inlet as per DIN 2545 PN 40, outlet as per DIN 2543 PN 16

Materials:

Valve body	EN-GJL-250, EN-GJS-400-18-LT, 1.0619 or 1.4581
Protective bonnet	EN-GJL-250, EN-GJS-400-18-LT, 1.0619 or 1.4408
Valve seat	Niro 1.4021/1.4301 or 1.4541
Valve head	Niro 1.4305 or 1.4571
Spindle, polished	Niro 1.4021 or 1.4571
Guide bushes	Niro 1.4301, Ms 58 or Rg 7
Load weight (392)	Pb
Spring (393)	Niro 1.4310, DIN 17223 C or 50 CrV4
Rubber diaphragm (max. 140°C)	EPDM

Models	Order Code No.	Example of order:
Series 392 of grey cast iron	PN 16 DN 25- 50 392 GN	1 x 393 GN 25
Series 393 of grey cast iron	PN 16 DN 25-150 393 GN	i.e. 1 THIES-diaphragm type high-efficiency safety valve, series 393
Series 392 of spheroidal graphite iron	PN 40 DN 25- 50 392 GGG	made of grey cast iron/Niro, nom. diam. 25/40, PN 16
Series 393 of spheroidal graphite iron	PN 40 DN 25-150 393 GGG	response overpressure 1 bar.
Series 392 of cast steel	PN 40 DN 25- 50 392 SNC	
Series 392 of stainless steel	PN 40 DN 25- 50 392 EN	
Series 393 of cast steel	PN 40 DN 25-150 393 SNC	

Blow-off rates for saturated steam, response overpressure 1 bar

DN	25	32	40	50	65	80	100	125	150
DN ₁	40	50	65	80	100	125	150	200	250
kg/h (Series 392)	400	645	1030	1330	-	-	-	-	-
kW	247	398	636	821	-	-	-	-	-
kg/h (Series 393)	290	465	750	1130	1880	2850	4410	6970	8600
kW	179	287	463	698	1161	1759	2722	4276	5278

Dimensions and weights in mm and kg

Length A	100	100	115	120	140	160	180	200	225
Length B	105	115	140	150	170	195	220	250	285
Overall height H (Series 392)	445	535	585	695	-	-	-	-	-
Overall height H (Series 393)	445	465	580	600	710	735	860	980	1045
Seat diameter do	23,5	30,0	37,9	46,5	60,0	74,0	92,0	123	148
Weight kg (Series 392)	17	23	35	44	-	-	-	-	-
Weight kg (Series 393)	12	15	24	26	41	45	72	100	133
Clearance x	90	90	150	150	150	150	200	200	210

The dimensions and weights quoted are non-binding. Subject to design modifications. Installation instructions as per series 390/391.

Maximum blow-off rate due to low flow losses

This was the principle governing the development of the THIES High-efficiency Safety Valves Series 390/391/392/393.

Special research led to the development of a simple construction of the flow passages leading to optimum efficiency and performance.

High functional and operational reliability due to a very simple configuration.

Series 390/391/392/393 offers you:

- High blow-off rate due to low flow losses
- Reliable valve response
- Favourable closing pressure differential
- Corrosion-resistant spindle bushes
- Abrasion and corrosion resistant sealing surfaces
- Centrally applied closing force

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