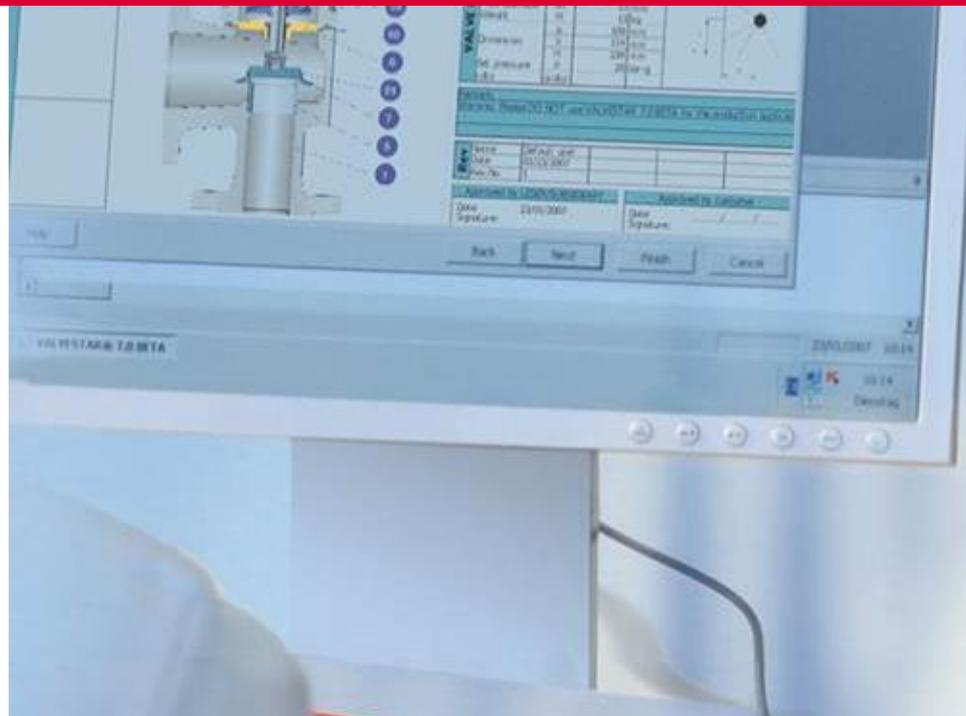


# VALVESTAR® 7

Training lectures – Walk through



# Introduction.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

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These **Training Lectures for VALVESTAR® 7** must be used by all teachers of VALVESTAR 7 to ensure the most efficient training and the highest quality of training.

**VALVESTAR® 7, the sizing tool of LESER, is more than only a calculation tool:**

- VALVESTAR® is a calculation tool for Safety Valves according all world wide known and used rules and standards
- VALVESTAR® is a sizing tool for LESER Safety Valves with an option configuration tool
- VALVESTAR® is a product register of LESER Safety Valves with all the product specific data in “VALVE INFO”
- VALVESTAR® is a medium database with several specific liquid- and gaseous medium data

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# Introduction.

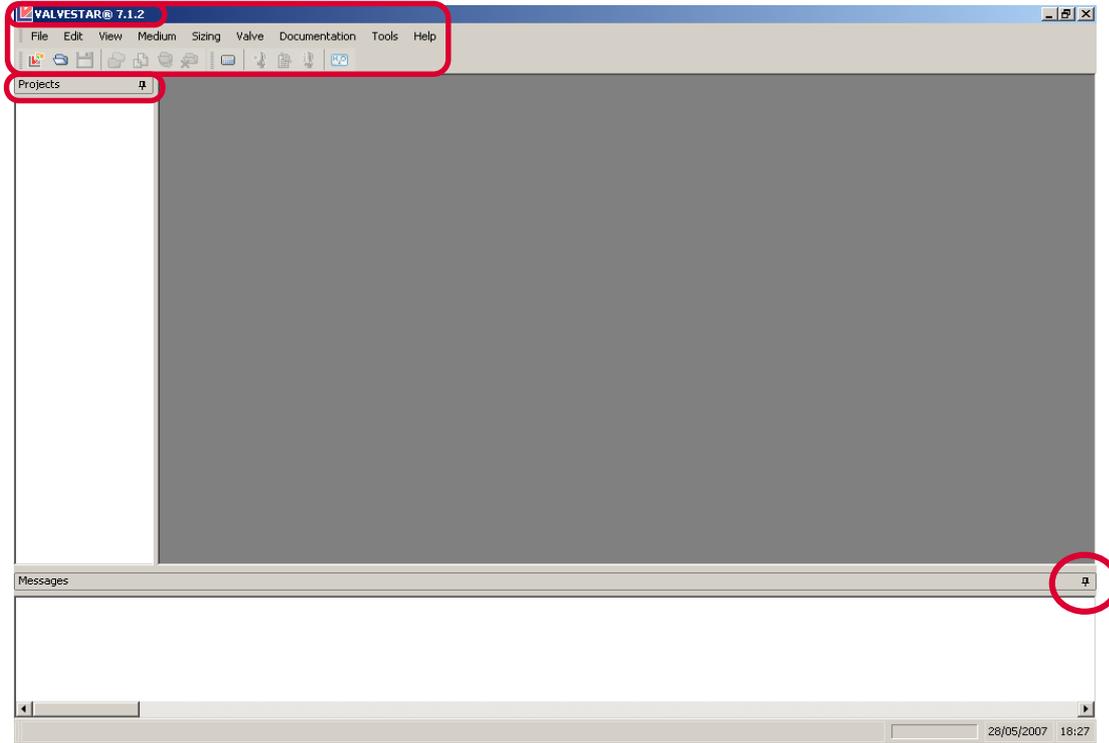
1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

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- VALVESTAR® is a visual database with all drawings of LESER Safety Valves and spotlights of possible options
- VALVESTAR® is a documentation tool with three different types of documents and many different available formats.
- VALVESTAR® is easy to handle with the Wizard which leads you through the sizing

# Introduction. Pop-up view of VALVESTAR 7.1.2 and higher.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)



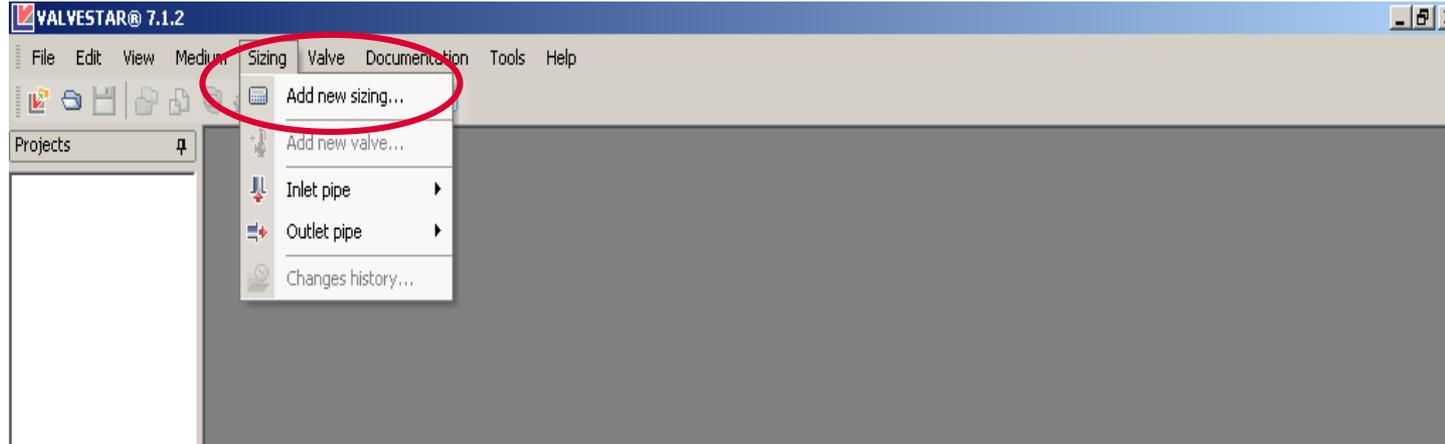
# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Service condition:** Air, Set pressure = 10bar g, required massflow = 11500kg/h

**Valve construction:** Type 441, semi nozzle, Carbon Steel body (1.0619/WCB), closed bonnet, lifting device cap H4

## 1. Step: How to start

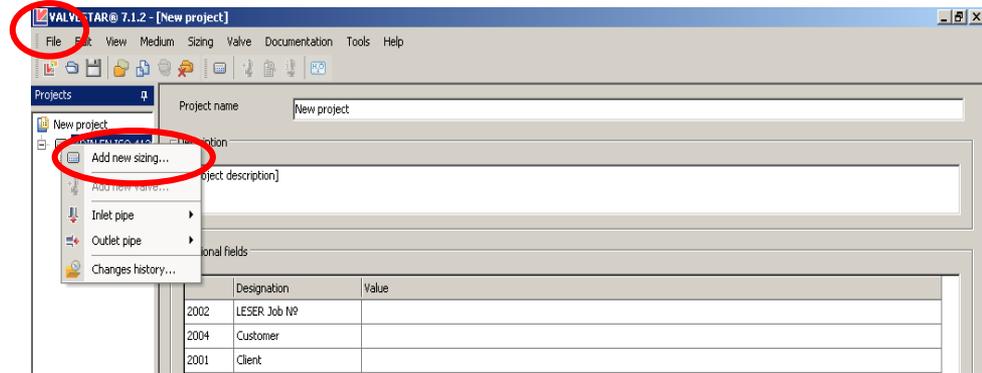


or: see next page

# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: How to start



# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Sizing standard and additional calculation

Create new sizing wizard - Sizing Type and Medium Selection

**Sizing Type and Medium Selection**

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Gas
Sizing standard	ASME VIII
Selected units	ASME VIII
CDTP Calculation	<input checked="" type="checkbox"/>

Additional calculations

	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>	
Fire Case		<input type="checkbox"/>	
Pressure drop inlet line	<input type="checkbox"/>		<input type="checkbox"/>
Built up back pressure outlet pipe	<input type="checkbox"/>		<input type="checkbox"/>

# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Medium database and medium selection

Medium selection

Use this page to select a medium.

Air (-) 0 % Select New

Name	Formula	Molar mass	k	%
Air		29 kg/kmol	1,4	100,00

Total percentage 100,00%

Remove

Designation	Air	Molar mass	M	29	kg/kmol
Type of mix	Volume	Ratio of specific heats	k	1,400	
		Compressibility Factor	Z	1,000	

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 4. Step: Service condition

Create new sizing wizard - Service condition

**Service Condition**

At this step you need to set values for Input Pressure, Temperature, Massflow or Volumeflow.

Maximum allowable working pressure (MAWP)	-	psi-g
Set pressure	p	psi-g
Superimposed back pressure	pa <sub>f</sub>	0 psi-g
Built up back pressure	pa <sub>e</sub>	- psi
Overpressure	dp	10,00 %
Temperature	T	°R
Required massflow	qm,ab	- lb/h
Volume flow to be discharged (working condition)	qv <sub>b,ab</sub>	- ft <sup>3</sup> /h
Volume flow to be discharged (std condition) [T=60 °F P=14,7 psi]	qvn,ab	- SCFM

Options

Volume flow standard	ASME
Case for blow off	

Installations

Rupture disc correction factor	<input type="checkbox"/>	1,000
--------------------------------	--------------------------	-------

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 5. Step: Service condition

Create new sizing wizard - Service condition

**Service Condition**

At this step you need to set values for Input Pressure, Temperature, Massflow or Volumeflow.

Maximum allowable working pressure (MAWP)		-	psi-g
Set pressure	p	10	bar-g
Superimposed back pressure	paf	0	psi-g
Built up back pressure	pae	-	psi
Overpressure	dp	10,00	%
Temperature	T	20	°C
Required massflow	qm,ab	11.500	kg/h
Volume flow to be discharged (working condition)	qv,ab	28.412,535	ft³/h
Volume flow to be discharged (std condition) [T=60 °F P=14,7 psi]	qvn,ab	5.527,018	SCFM

Options

Volume flow standard	ASME
Case for blow off	

Installations

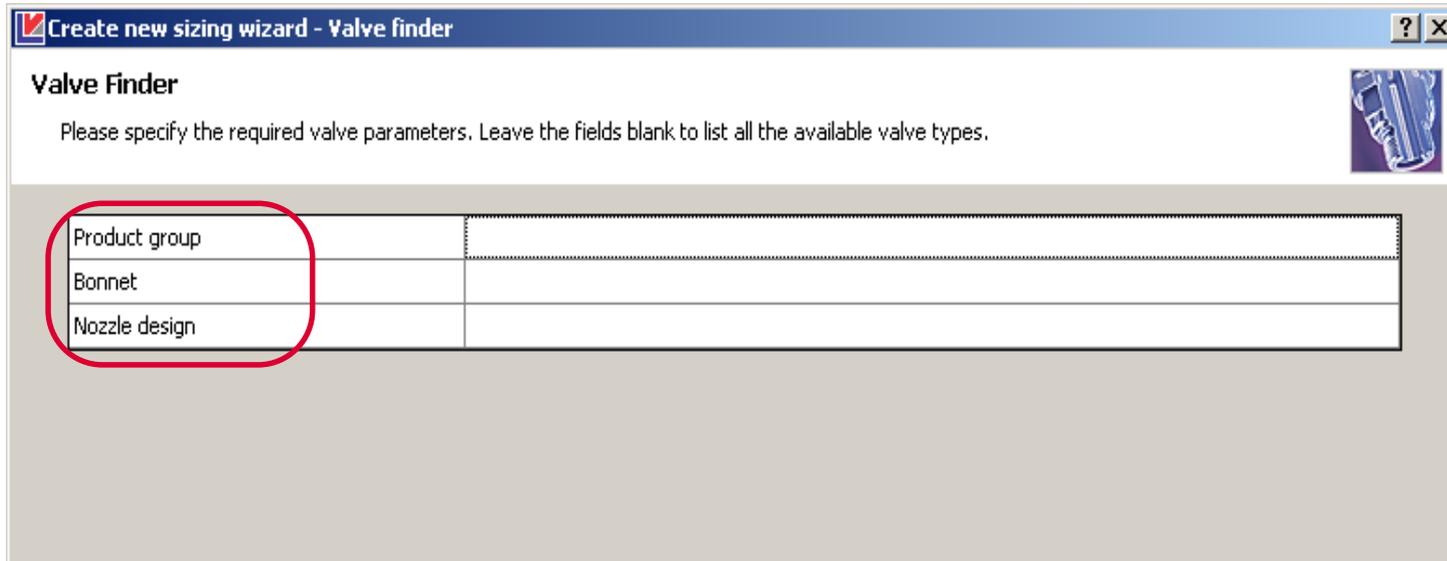
Rupture disc correction factor	<input type="checkbox"/>	1,000
--------------------------------	--------------------------	-------

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 6. Step: Valve Finder



**Valve Finder**

Please specify the required valve parameters. Leave the fields blank to list all the available valve types.

Product group			
Bonnet			
Nozzle design			

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 7. Step: Processing of all possible safety valves

Create new sizing wizard - Valve selection

**Valve Selection**

First, choose a valve group and then any one valve from that group.

Type: 441, 442 DIN | Diameter range: DN 20 - 200 | Body material: 1.0619 / SA 216 WCB

441, 442 Full... | NPS 1" - 4" | Lifting device: Cap H2

441, 442 Full... | DN 25 - 50

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
-74,18	2.969,642	4412.4512	25x40	23	Type 4412 DN 25
-58,95	4.721,113	4412.4522	32x50	29	Type 4412 DN 32
-33,17	7.685,141	4412.4532	40x65	37	Type 4412 DN 40
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50
75,73	20.209,281	4412.4552	65x100	60	Type 4412 DN 65
167,31	30.740,562	4412.4562	80x125	74	Type 4412 DN 80
313,17	47.514,265	4412.4572	100x150	92	Type 4412 DN 100
368,82	53.913,871	4412.4582	125x200	98	Type 4412 DN 125
662,73	87.713,894	4412.4592	150x250	125	Type 4412 DN 150

Select

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50

Total: capacity exceed 3,29 [%], certified massflow 11.878,566 [kg/h]

Remove

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 8. Step: Connections

Create new sizing wizard - Valve connections

Valve connections

Specify the inlet and outlet parameters.

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50

Possible inlet connections			Possible outlet connections		
Type	Flanged connection		Type	Flanged connection	
1303	Connection standard	acc. to DIN EN 1092	1353	Connection standard	acc. to DIN EN 1092
1304	DN / NPS	50	1354	DN / NPS	80
1305	PN / PR	PN 40	1355	PN / PR	PN 16
1306	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526...	1356	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526...

Selected inlet connection			Selected outlet connection		
Type	Flanged connection		Type	Flanged connection	
1303	Connection standard	acc. to DIN EN 1092	1353	Connection standard	acc. to DIN EN 1092
1304	DN / NPS	50	1354	DN / NPS	80
1305	PN / PR	PN 40	1355	PN / PR	PN 16
1306	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526 Form C)	1356	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526 Form C)

Buttons: Flange guide..., Select, Flange guide..., Select

Buttons: Help, Back, Next, Finish, Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## Flange Guide

Flange guide

Service condition			Additional service condition	
Set pressure	10	bar-g	Set pressure	- bar-g
Temperature	20	°C	Temperature	- °C

Flanges

Connection standard	acc. to DIN EN 1092
DIN	50

Legend  permissible pressure rating  non permissible pressure rating

Check Close

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 9. Step: Options

Create new sizing wizard - Valve accessories

Valve accessories

Select the required extra valve accessories.

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50

Available accessories

Add/Edit custom accessories...

<input type="checkbox"/>	H29	Heating jacket: material 1.4541, heating connect. male screwed G 3/8 DIN 2986 - 1.4571
<input type="checkbox"/>	H30	Heating jacket: material 1.4541, heating connect. male screwed G 3/4 DIN 2986 - 1.4571
<input type="checkbox"/>	H31	Heating jacket: material 1.4541, heating connection flange DN 15, PN 25 - 1.4571/1.4404
<input type="checkbox"/>	H32	Heating jacket: material 1.4541, heating connection flange DN 25, PN 25 - 1.4571/1.4404
<input type="checkbox"/>	H33	Bonnet spacer: heated
<input type="checkbox"/>	J18	Drain hole: G 1/4 plugged (plug screw 1.4401)
<input type="checkbox"/>	J19	Drain hole: G 1/2 plugged (plug screw 1.4401)
<input type="checkbox"/>	J20	O-ring disc: FFKM "C", (Kalrez)
<input type="checkbox"/>	J21	O-ring disc: "K", CR (Neoprene, Baypren)
<input type="checkbox"/>	J22	O-ring disc: "D", EPDM (Dutral, Kelkan, Vistalon)

Inspections

Add/Edit custom inspections...

<input type="checkbox"/>	H03	Certificate for testing of body acc. to DIN EN 10204-3.1
<input type="checkbox"/>	M33	Certificate for test pressure acc. to DIN EN 10204-3.2

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 10. Step: Materialist

Create new sizing wizard - Valve partlist

**Valve partlist**

Check out the list of the selected valve parts.

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50

Parts

	Pos No	Denomination	Q	Material (EU)	Material (US)	Certificate
12010	1	Body	1	1.0619	SA 216 WCB	<input type="checkbox"/>
12050	5	Seat	1	1.4404	316L	<input type="checkbox"/>
12070	7	Disc	1	1.4122	Hardened Stainless...	<input type="checkbox"/>
12080	8	Guide	1	1.0501/1.0038/1.4104	Steel	<input type="checkbox"/>
12090	9	Bonnet	1	0.7040	Ductile Gr. 60-40-18	<input type="checkbox"/>
12120	12	Spindle	1	1.4021	420	<input type="checkbox"/>
12140	14	Split ring	2	1.4104	SA 479 430	<input type="checkbox"/>
12160	16	Spring plate	1	1.0718/1.0570	Steel	<input type="checkbox"/>
12170	17	Spring plate	1	1.0718/1.0570	Steel	<input type="checkbox"/>
12180	18	Adjusting screw	1	1.4104	SA 479 430	<input type="checkbox"/>
12190	19	Lock nut	1	1.0718	Steel	<input type="checkbox"/>
12400	40	Cap H2	1	1.0718	Steel	<input type="checkbox"/>
12540	54	Spring	1	1.1200	Carbon steel	<input type="checkbox"/>
12550	55	Bolt	4	1.1181	Steel	<input type="checkbox"/>

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 11. Step: Valve Dimensions

Create new sizing wizard - Valve dimensions

**Valve dimensions**  
Dimensions for the valve.



Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
3,29	11.878,566	4412.4542	50x80	46	Type 4412 DN 50

1400	Discharge area	Ao	2,576	in <sup>2</sup>
1401	Discharge diameter	do	1,811	inch
1402	Centre to Face dimensions	a	5,906	inch
1403	Centre to Face dimensions	b	4,724	inch
1405	Height	H	22,402	inch
1406	Weight	M	48,502	lb

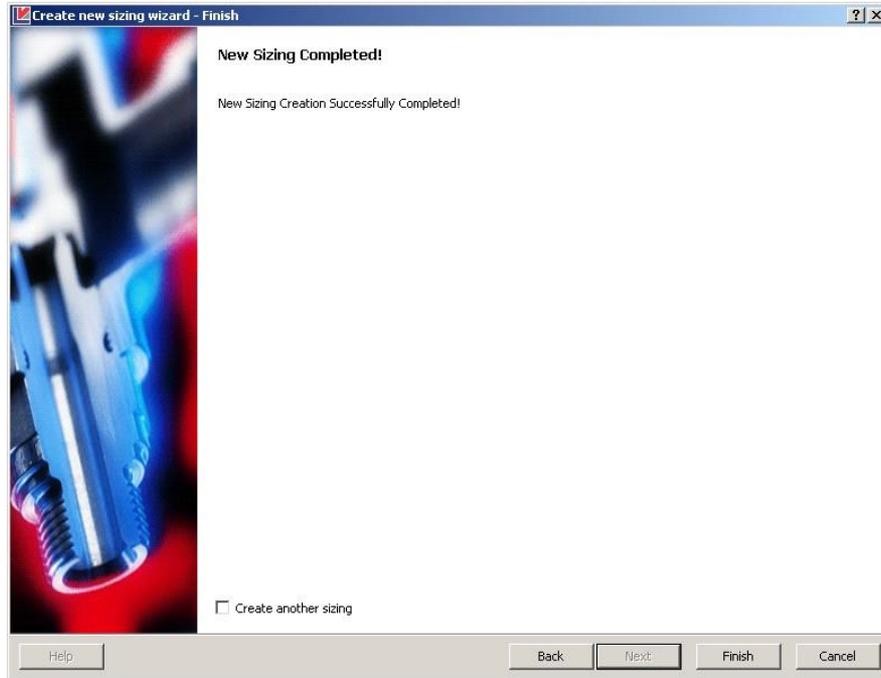
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# Sizing. Sizing according to ASME, (steam/gases)

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

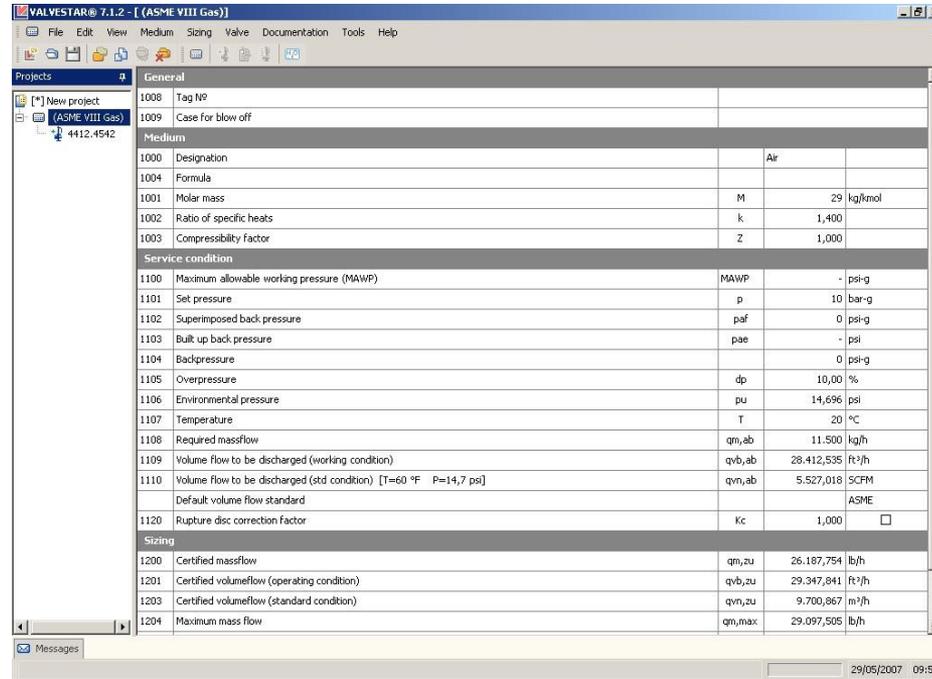
## 12. Step: Finish Sizing



# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 13. Step: Valve Calculation

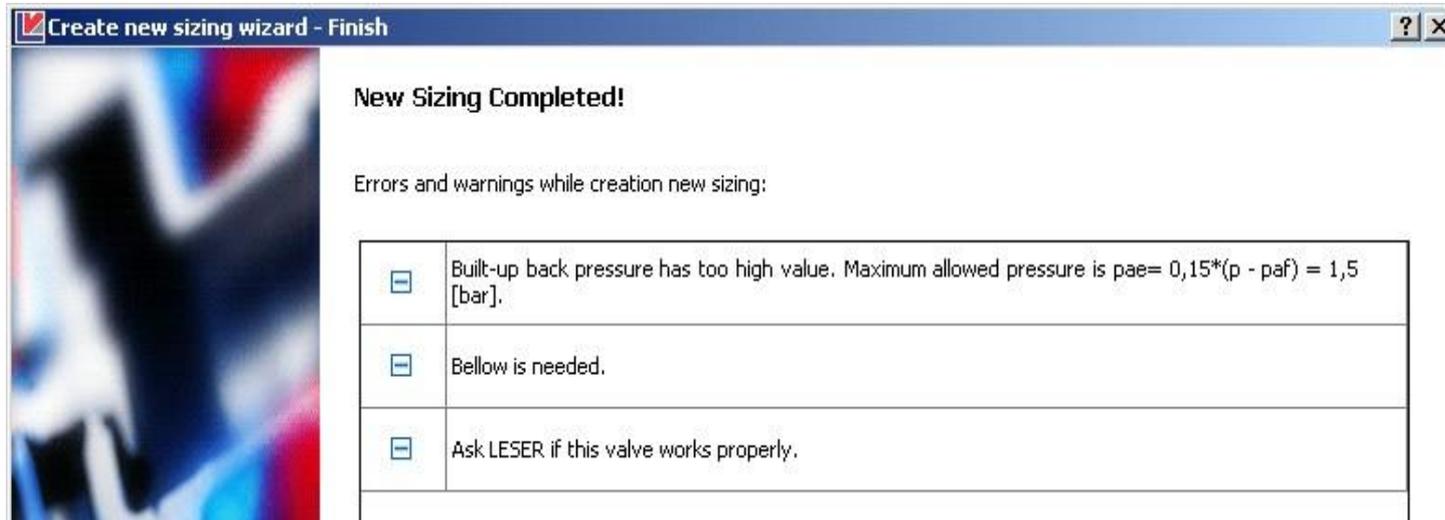


The screenshot shows the VALVESTAR@ 7.1.2 - (ASME VIII Gas) software interface. The main window displays a table of valve calculation parameters and results. The table is organized into sections: General, Medium, Service condition, and Sizing. The 'General' section includes Tag No (1008) and Case for blow off (1009). The 'Medium' section lists Designation (Air), Formula (1004), Molar mass (29 kg/mol), Ratio of specific heats (1,400), and Compressibility factor (1,000). The 'Service condition' section includes Maximum allowable working pressure (MAWP), Set pressure (10 bar-g), Superimposed back pressure (0 psi-g), Built up back pressure (- psi), Backpressure (0 psi-g), Overpressure (10,00 %), Environmental pressure (14,696 psi), Temperature (20 °C), Required massflow (11.500 kg/h), Volume flow to be discharged (working condition) (28.412,535 R<sup>3</sup>/h), Volume flow to be discharged (std condition) (5.527,018 SCFM), and Rupture disc correction factor (1,000). The 'Sizing' section includes Certified massflow (26.187,754 lb/h), Certified volumeflow (operating condition) (29.347,841 R<sup>3</sup>/h), Certified volumeflow (standard condition) (9.700,067 m<sup>3</sup>/h), and Maximum mass flow (29.097,505 lb/h).

Tag No	Description	Parameter	Value	Unit
1008	Tag No			
1009	Case for blow off			
<b>Medium</b>				
1000	Designation		Air	
1004	Formula			
1001	Molar mass	M	29	kg/mol
1002	Ratio of specific heats	k	1,400	
1003	Compressibility factor	Z	1,000	
<b>Service condition</b>				
1100	Maximum allowable working pressure (MAWP)	MAWP	-	psi-g
1101	Set pressure	p	10	bar-g
1102	Superimposed back pressure	paF	0	psi-g
1103	Built up back pressure	paE	-	psi
1104	Backpressure		0	psi-g
1105	Overpressure	dp	10,00	%
1106	Environmental pressure	pu	14,696	psi
1107	Temperature	T	20	°C
1108	Required massflow	qm,ab	11.500	kg/h
1109	Volume flow to be discharged (working condition)	qv,ab	28.412,535	R <sup>3</sup> /h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14,7 psi]	qvn,ab	5.527,018	SCFM
	Default volume flow standard			ASME
1120	Rupture disc correction factor	Kc	1,000	<input type="checkbox"/>
<b>Sizing</b>				
1200	Certified massflow	qm,zu	26.187,754	lb/h
1201	Certified volumeflow (operating condition)	qv,zu	29.347,841	R <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qvn,zu	9.700,067	m <sup>3</sup> /h
1204	Maximum mass flow	qm,max	29.097,505	lb/h

# Sizing. Sizing according to ASME, (steam/gases)

## 14 Step: ERRORS and Warnings



**Errors and warnings are shown at the end of a sizing or:**

during sizing, indicated by the **flashing yellow label**.

Click on the symbol for a listing of the errors and warnings.



# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Service condition:** Heavy Oil, Set pressure = 500 bar g, Temperature 20°C, required massflow = 100000kg/h, viscosity = 0,038 Pa s.

**Valve construction:** Type 526, Fullnozzle, Carbon Steel body (1.0619/WCB), closed bonnet, lifting device cap H2, stainless steel bellows design.

## 1. Step: Sizing Standard and additional calculation

**Create new sizing wizard - Sizing Type and Medium Selection**

**Sizing Type and Medium Selection**

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Liquid
Sizing standard	ASME VIII
Selected units	ASME VIII
CDTP Calculation	<input type="checkbox"/>

Additional calculations

	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure drop inlet line	<input type="checkbox"/>		<input type="checkbox"/>
Built up back pressure outlet pipe	<input type="checkbox"/>		<input type="checkbox"/>

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# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Medium database and medium selection

Medium selection

Use this page to select a medium.

Heavy fuel oil (-) 0 % Select New

Name	Formula	Density	%
Heavy fuel oil		950 kg/m <sup>3</sup>	100,00

Total percentage 100,00%

Remove

Designation	Heavy fuel oil	Density	ρ	59,307	lb/ft <sup>3</sup>
Type of mix	Volume	Viscosity	μ	0,038	Pa·s

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Service condition

Create new sizing wizard - Service condition

**Service Condition**

At this step you need to set values for Input Pressure, Temperature, Massflow or Volumeflow.

Maximum allowable working pressure (MAWP)		-	psi-g
Set pressure	p	50	bar-g
Superimposed back pressure	paf	0	psi-g
Built up back pressure	pae	-	psi
Overpressure	dp	10,00	%
Temperature	T	20	°C
Required massflow	qm,ab	1000000	kg/h
Volume flow to be discharged (working condition)	qv,ab	-	ft <sup>3</sup> /h

Options

Case for blow off

Installations

Rupture disc correction factor  1,000

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 4. Step: Valve Finder

Create new sizing wizard - Valve finder

### Valve Finder

Please specify the required valve parameters. Leave the fields blank to list all the available valve types.

Product group	API Series
Bonnet	
Nozzle design	

- High Performance
- API Series**
- Compact Performance
- Clean Service
- Critical Service
- Modulate Action
- S&R - Safety Valves for special or regional Application

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 5. Step: Processing of all possible safety valves

Create new sizing wizard - Valve selection

**Valve Selection**

First, choose a valve group and then any one valve from that group.

Type	Diameter range	Body material	Lifting device
526	NPS 1" - 8", Orifice D - T	1.0619 / SA 216 WCB	Cap H2

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
-17,16	82.840,645	5262.0482	1 1/2G3	22,5	Type 5262 Orifice G #600
-17,16	82.840,645	5262.0492	1 1/2G3	22,5	Type 5262 Orifice G #900
-17,16	82.840,645	5262.0502	2G3	22,5	Type 5262 Orifice G #1500
-17,16	82.840,645	5262.0512	2G3	22,5	Type 5262 Orifice G #2500
32,52	132.521,913	5262.1422	1 1/2H3	28,3	Type 5262 Orifice H #150
32,52	132.521,913	5262.1432	1 1/2H3	28,3	Type 5262 Orifice H #300 L
32,52	132.521,913	5262.1442	2H3	28,3	Type 5262 Orifice H #300
32,52	132.521,913	5262.1452	2H3	28,3	Type 5262 Orifice H #600
32,52	132.521,913	5262.1462	2H3	28,3	Type 5262 Orifice H #900

Selection chart... Select

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
32,52	132.521,913	5262.1442	2H3	28,3	Type 5262 Orifice H #300

Total: capacity exceed 32,52 [%], certified massflow 132.521,913 [kg/h]

Remove

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 6. Step: Connection

Create new sizing wizard - Valve connections

**Valve connections**

Specify the inlet and outlet parameters.

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
32,52	132.521,913	5262.1442	2H3	28,3	Type 5262 Orifice H #300

Possible inlet connections

Type	Flanged connection
1303 Connection standard	acc. to ASME B16.5
1304 DN / NPS	2"
1305 PN / PR	#300
1306 Flange facing	RF

Possible outlet connections

Type	Flanged connection
1353 Connection standard	acc. to ASME B16.5
1354 DN / NPS	3"
1355 PN / PR	#150
1356 Flange facing	RF

Flange guide... Select Flange guide... Select

Selected inlet connection

1303 Connection standard	acc. to ASME B16.5
1304 DN / NPS	2"
1305 PN / PR	#300
1306 Flange facing	RF

Selected outlet connection

1353 Connection standard	acc. to ASME B16.5
1354 DN / NPS	3"
1355 PN / PR	#150
1356 Flange facing	RF

Help Back Next Finish Cancel

# Sizing. Sizing according to ASME, (steam/gases)

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 7. Step: Sizing finished

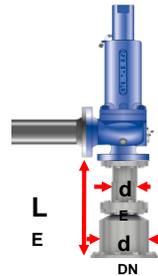


# Sizing of the inlet line. Attention: Inlet line with different cross sections

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

- According to AD 2000 A2 and ISO 4126-9 the provided formulas for the inlet pressure drop calculation consider only one cross section within the inlet line
- The inlet pressure drop calculation within VALVESTAR is based on the formulas described in the according standards
- In reality, the isometry of the inlet line shows sometimes different cross section
- VALVESTAR uses the inner diameter  $d_E$  which is related to the maximum developed pipe length  $L_E$  for the calculation of the inlet pressure drop
- If there are differing diameters ( $d_{DN}$ ) to  $d_E$  within the inlet line the resulting zeta values of those sections and components have to be transferred by the following formula:

- $$\zeta_{d_E} = \left(\frac{d_E}{d_{DN}}\right)^4 * \zeta_{d_{DN}}$$



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## Sizing of the inlet line. Attention: Inlet line with different cross sections

1. [Introduction](#) | 2. **Sizing** | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

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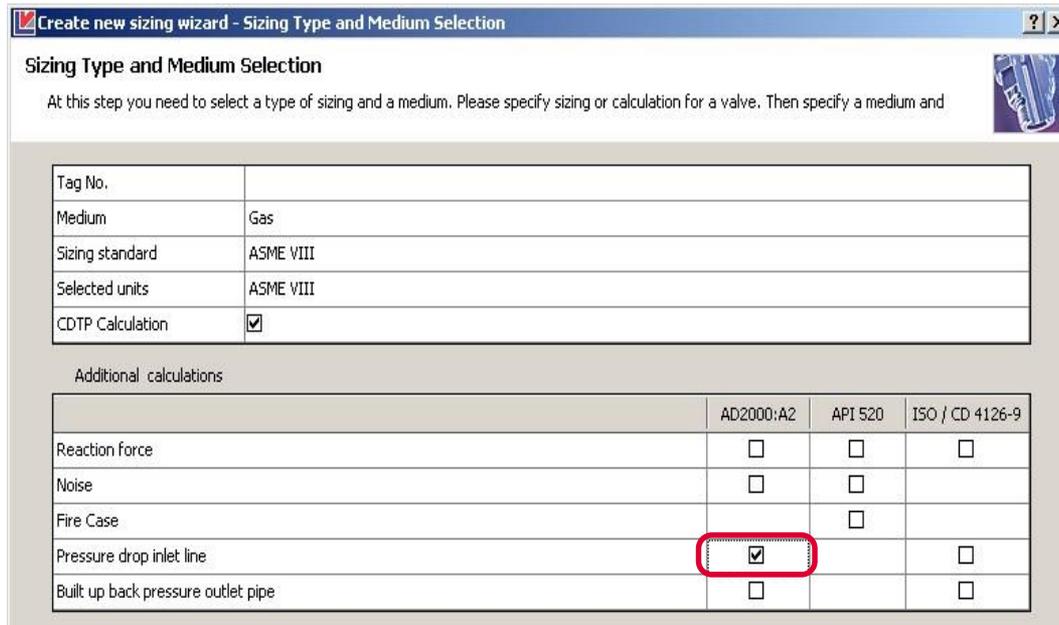
- The transferred zeta values can be inserted as shown in the next slides
- Without the transformation of zeta values, VALVESTAR can not be used correctly for cases with different cross sections

# Sizing of inlet pressure drop. (according AD 2000-Markblatt A2).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Additional calculation

When starting a new sizing:



**Create new sizing wizard - Sizing Type and Medium Selection**

**Sizing Type and Medium Selection**

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Gas
Sizing standard	ASME VIII
Selected units	ASME VIII
CDTP Calculation	<input checked="" type="checkbox"/>

Additional calculations

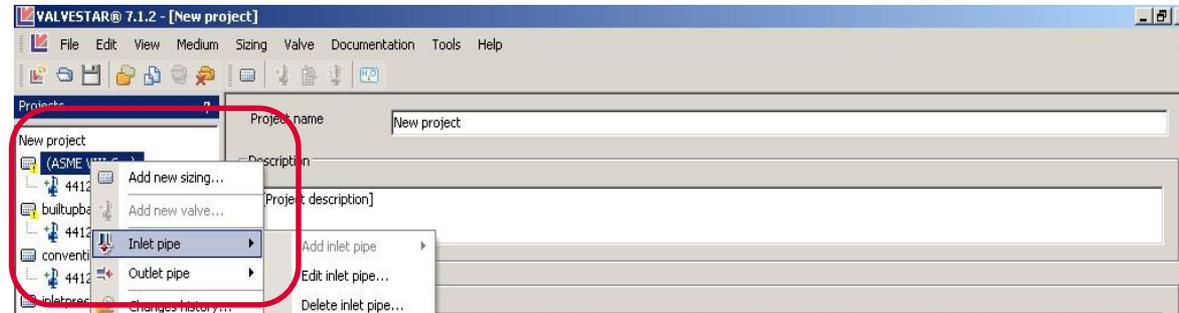
	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>	
Fire Case		<input type="checkbox"/>	
Pressure drop inlet line	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Built up back pressure outlet pipe	<input type="checkbox"/>		<input type="checkbox"/>

# Sizing of inlet pressure drop. (according AD 2000-Markblatt A2).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Additional calculation

You can also start inlet pressure drop calculation in menu



# Sizing of inlet pressure drop. (according AD 2000-Markblatt A2).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Dimension of inlet pipe and pipe components

**Create new sizing wizard - Inlet pipe components**

**Inlet Pipe Components**  
Specify the required inlet pipe components, their amount and technical characteristics.

Available pipe components  
Pipe bend DN 50 version 3 acc. to DIN 2605 part 1 - line 3

Radius	R	76	mm	Angle		90	°
Inner diameter	De	54,5	mm	Zeta		0,248	

Count: 1

Selected components

	Quantity	Zeta	Total
--	----------	------	-------

Pipe data

Length	Le	0,5	m	Equivalent pipe roughness	K	0,070	
				Allowed pressure loss based on p-paf (%)		3,00	%

# Sizing of inlet pressure drop. (according AD 2000-Markblatt A2).

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Dimension of inlet pipe and pipe components

**Create new sizing wizard - Inlet pipe**

**Inlet Pipe**  
Select inlet pipe

DN / NPS [mm]	Designation	Lmax [m]	$\Delta p$ [%]
54,5	Straight line DN 50 acc. to DIN 2605 part 1 - line 3	0,62	1,84
70,3	Straight line DN 65 acc. to DIN 2605 part 1 - line 3	3,47	0,45
82,5	Straight line DN 80 acc. to DIN 2605 part 1 - line 3	8,23	0,19
107,1	Straight line DN 100 acc. to DIN 2605 part 1 - line 3	32,88	0,05
134,5	Straight line DN 125 acc. to DIN 2605 part 1 - line 3	108,84	0,01

Select

Length of inlet pipe  
Inlet pipe diameter

Le	0,5	m
De	54,5	mm

Help Back Next Finish Cancel

# Sizing of built-up backpressure.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Dimension of inlet pipe and pipe components

When starting a new sizing:

**Create new sizing wizard - Sizing Type and Medium Selection**

### Sizing Type and Medium Selection

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Gas
Sizing standard	ASME VIII
Selected units	ASME VIII
CDTF Calculation	<input checked="" type="checkbox"/>

Additional calculations

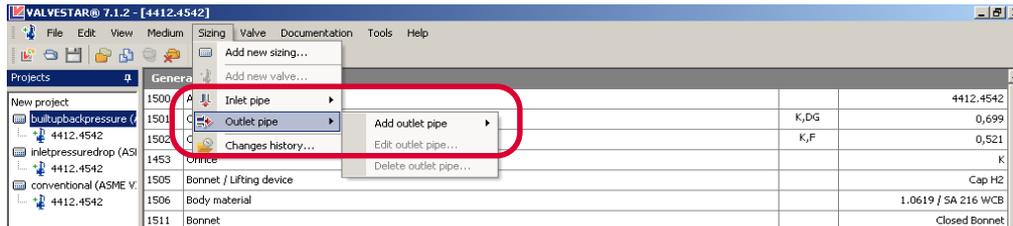
	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>	
Fire Case		<input type="checkbox"/>	
Pressure drop inlet line	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Built up back pressure outlet pipe	<input checked="" type="checkbox"/>		<input type="checkbox"/>

# Sizing of built-up backpressure.

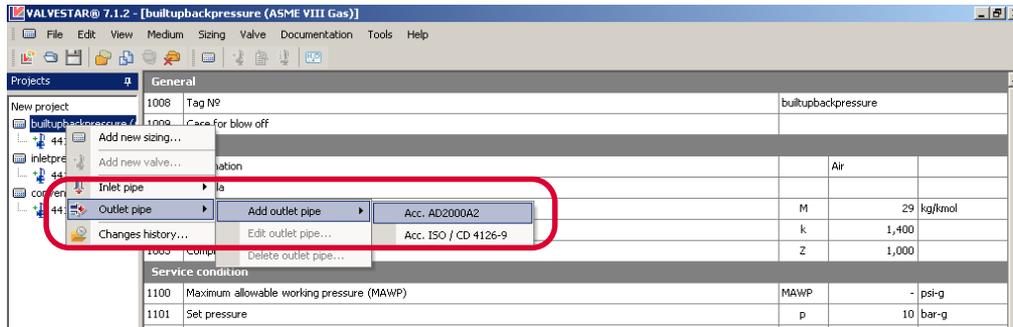
1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Dimension of outlet pipe and pipe components

You can also start built-up backpressure calculation in menu



... or start in project three



# Sizing of built-up backpressure.

1. Introduction | 2. **Sizing** | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Dimension of outlet pipe and pipe components

**Outlet Pipe designer**

	Pipe #1	Pipe #2	Pipe #3	Pipe #4
DN				
Diameter				
Roughness	0,070	0,070	0,070	0,070
Length	-	-	-	-
Max. length				

Eff. resistance  $\zeta$

Summary	Warnings	
Pressure drop of silencer $\Delta p$	-	psi
Coefficient of resistance permitted $\zeta_j$	-	
Built up back pressure pae	-	psi
Built-up backpressure ratio	-	%

OK Cancel

# Sizing of built-up backpressure.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Calculation and warning

The screenshot shows the 'Outlet Pipe designer' window. The 'Pipe #1' section is highlighted with a red box and contains the following data:

DN	DN 80	
Diameter	82,5	mm
Roughness	0,070	mm
Length	0,5	m
Max. length	0,4	m

Below the table is a 3D model of a valve assembly. The 'Eff. resistance  $\zeta$ ' row shows 0,114 for Pipe #1 and '-' for Pipes #2, #3, and #4.

The 'Summary' table is also highlighted with a red box:

Pressure drop of silencer	$\Delta p$	0,5	bar
Coefficient of resistance permitted	$\zeta_j$	0,114	
Built up back pressure	pae	1,557	bar
Built-up backpressure ratio		15,60	%

The 'Warnings' section contains the following text:

Warnings  
Built-up back pressure has too high value.  
Maximum allowed pressure is pae= 0,15\*(p - paf)  
= 1,5 [bar].  
Below is needed.  
Ask LESER if this valve works properly.

Buttons for 'Edit...', 'OK', and 'Cancel' are visible at the bottom of the interface.

# Fire case according to API RP 521.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Calculation and warning

**Service condition:** water, temperature = 20°C, Set pressure = 10bar g, effect of fire on the wetted surface of vessel, wetted surface = 10m<sup>2</sup>, no drainage, bare vessel, heat of evaporation 1998,5 kJ/kg

**Valve construction:** Type 526, full nozzle, Carbon Steel body (1.0619/WCB), closed bonnet, lifting device cap H2

## API RP 521

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Gas
Sizing standard	API 520
Selected units	AD 2000:A2 / RD 421
CDTF calculation	<input checked="" type="checkbox"/>

Additional calculations

	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Case	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure drop inlet line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Built up back pressure outlet pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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# Fire case according to API RP 521.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

## API RP 521

Create new sizing wizard - Medium selection

**Medium selection**

Use this page to select a medium.

water (fire case) (H2O) 0 %

Name	Formula	Molar mass	k	%	
water (fire case)	H2O	18	kg/kmol	1,3	100,00

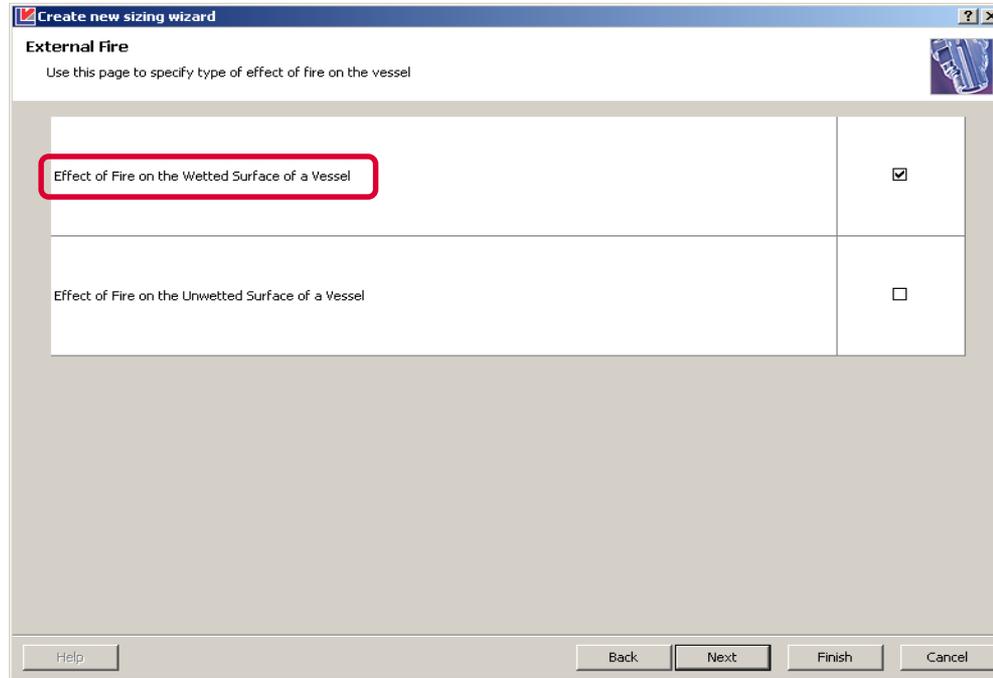
Total percentage 100,00%

Designation	water (fire case)	Molar mass	M	18	kg/kmol
Type of mix	Volume	Ratio of specific heats	k	1,300	
		Compressibility factor	Z	1,000	

# Fire case according to API RP 521.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

## API RP 521



The screenshot shows a software window titled "Create new sizing wizard" with a sub-header "External Fire". Below the sub-header is the instruction: "Use this page to specify type of effect of fire on the vessel". There is a small icon of a vessel in the top right corner. The main area contains a table with two rows. The first row is highlighted with a red border and has a checked checkbox. The second row has an unchecked checkbox. At the bottom of the window are buttons for "Help", "Back", "Next", "Finish", and "Cancel".

Effect of Fire	Selected
Effect of Fire on the Wetted Surface of a Vessel	<input checked="" type="checkbox"/>
Effect of Fire on the Unwetted Surface of a Vessel	<input type="checkbox"/>

# Fire case according to API RP 521.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

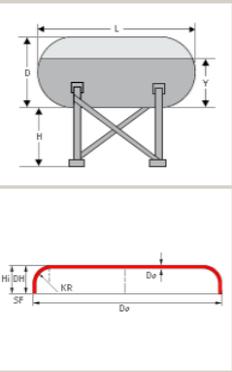
## API RP 521

Create new sizing wizard - Fire case

**Fire case**

Use this page to specify a type and size of a vessel, its head design, the height of a medium in the vessel along with other related

Calculation type		Wetted	
Type of vessel		Horizontal	
Vessel head design		Flat head	
Vessel elevation	H	-	m
Vessel diameter	D	-	m
Vessel length	L	-	m
Liquid depth	Y	-	m
Effective liquid level	Yeff	-	m
Wetted surface, calculated	Awet	-	m <sup>2</sup>
Wetted surface, manual	Awet	10	m <sup>2</sup>
Drainage presence		No	
Type of isolation		Bare vessel	
Environment factor	F	1,000	
Heat of evaporation	Hvap	1,998,5	kJ/kg
Minimum required mass flow	W	844,512	kg/h



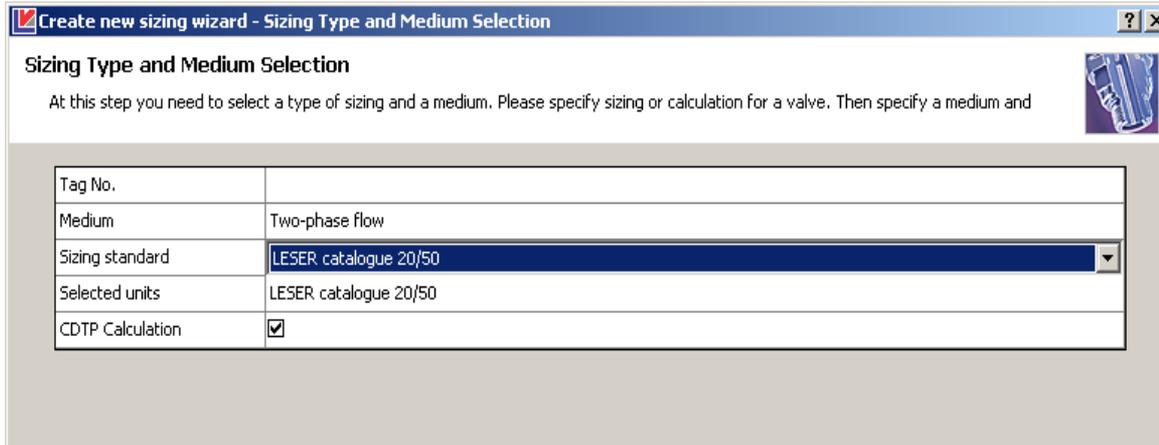
Help Back Next Finish Cancel

## Two Phase Flow. LESER mixed formula.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Service condition:** hot water, temperature = 150°C, Set pressure = 10bar g, required massflow = 10000kg/h

**Valve construction:** Type 441, semi nozzle, Carbon Steel body (1.0619/WCB), closed bonnet, lifting device cap H2, evaporation while depressuring from 10bar g to environmental pressure in case of blow off.



**Create new sizing wizard - Sizing Type and Medium Selection**

**Sizing Type and Medium Selection**

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Two-phase flow
Sizing standard	LESER catalogue 20/50
Selected units	LESER catalogue 20/50
CDTF Calculation	<input checked="" type="checkbox"/>

# Two Phase Flow. LESER mixed formula.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Create new sizing wizard - Service condition**

**Service Condition**

At this step you need to set values for Input Pressure, Temperature, Massflow or Volumeflow.

Set pressure	p	10	bar-g
Superimposed back pressure	paf	0	bar-g
Overpressure	dp	10,00	%
Temperature	T	150	°C
Required massflow	qm,ab	10000	kg/h
Saturated state		<input type="checkbox"/>	

Options

Case for blow off

**Create new sizing wizard - Valve finder**

**Valve Finder**

Please specify the required valve parameters. Leave the fields blank to list all the available valve types.

Product group	High Performance
Bonnet	
Nozzle design	

# Two Phase Flow. LESER mixed formula.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Create new sizing wizard - Valve selection**

**Valve Selection**

First, choose a valve group and then any one valve from that group.

Type	Diameter range	Body material
441, 442 ANSI	NPS 1" - 4"	1.0619 / SA 216 WCB
441, 442 DIN	DN 20 - 200	Lifting device
441, 442 Full...	NPS 1" - 4"	Cap H2

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
-30,01	6.999,137	4412.4502	20x40	18	Type 4412 DN 20
14,28	11.427,603	4412.4512	25x40	23	Type 4412 DN 25
81,68	18.167,513	4412.4522	32x50	29	Type 4412 DN 32
195,74	29.573,514	4412.4532	40x65	37	Type 4412 DN 40
357,10	45.710,414	4412.4542	50x80	46	Type 4412 DN 50
677,68	77.768,19	4412.4552	65x100	60	Type 4412 DN 65
1082,94	118.294,057	4412.4562	80x125	74	Type 4412 DN 80
1728,42	182.841,655	4412.4572	100x150	92	Type 4412 DN 100
1974,68	207.468,248	4412.4582	125x200	98	Type 4412 DN 125

Select

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
14,28	11.427,603	4412.4512	25x40	23	Type 4412 DN 25

Total: capacity exceed 14,28 [%], certified massflow 11.427,603 [kg/h]

Remove

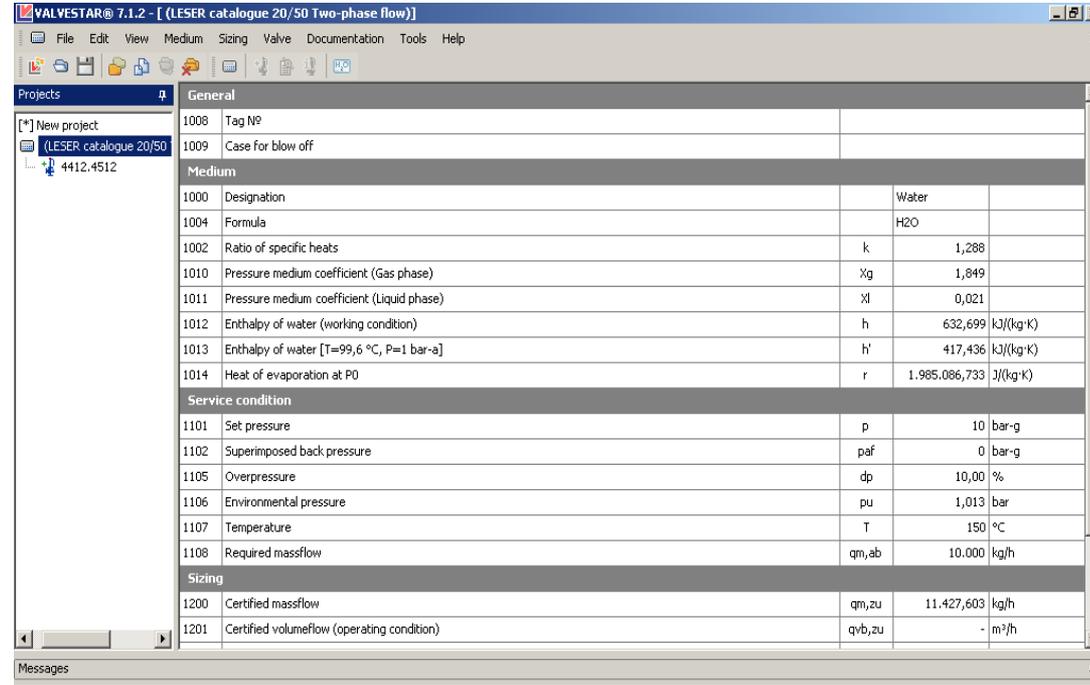
Help Back Next Finish Cancel

All the next steps until finish are not shown.

# Two Phase Flow. LESER mixed formula.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## Result: Documentation on screen



The screenshot shows the VALVESTAR software interface. The main window displays a table of parameters for a project titled "(LESER catalogue 20/50)". The table is organized into sections: General, Medium, Service condition, and Sizing. The parameters include Tag No, Case for blow off, Designation, Formula, Ratio of specific heats, Pressure medium coefficient (Gas phase), Pressure medium coefficient (Liquid phase), Enthalpy of water (working condition), Enthalpy of water [T=99,6 °C, P=1 bar-a], Heat of evaporation at P0, Set pressure, Superimposed back pressure, Overpressure, Environmental pressure, Temperature, Required massflow, Certified massflow, and Certified volumeflow (operating condition).

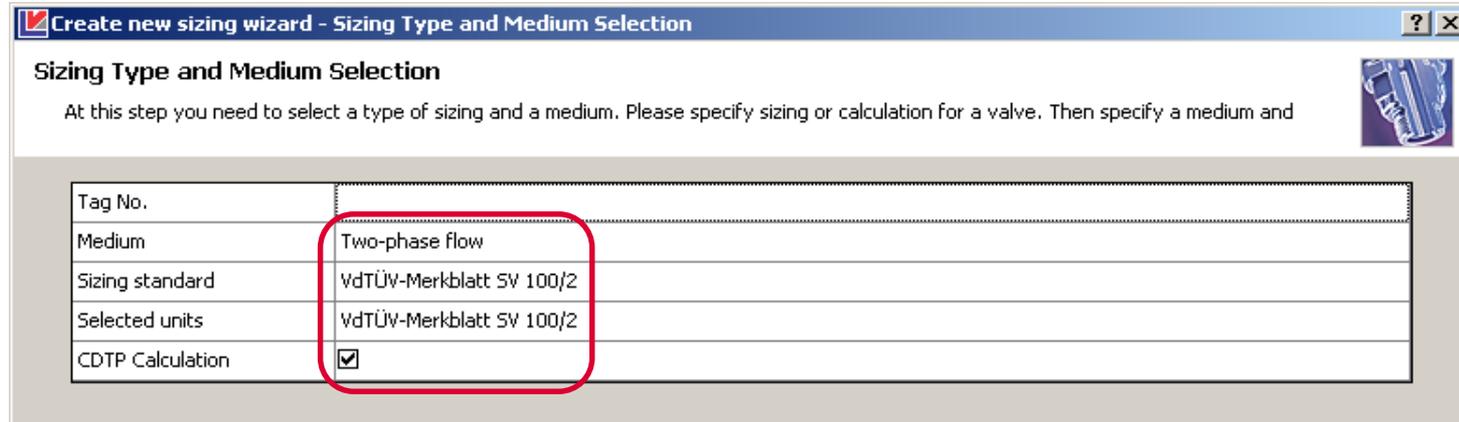
General				
1008	Tag No			
1009	Case for blow off			
Medium				
1000	Designation		Water	
1004	Formula		H2O	
1002	Ratio of specific heats	k	1,288	
1010	Pressure medium coefficient (Gas phase)	Xg	1,849	
1011	Pressure medium coefficient (Liquid phase)	Xl	0,021	
1012	Enthalpy of water (working condition)	h	632,699	kJ/(kg·K)
1013	Enthalpy of water [T=99,6 °C, P=1 bar-a]	h'	417,436	kJ/(kg·K)
1014	Heat of evaporation at P0	r	1.985.086,733	J/(kg·K)
Service condition				
1101	Set pressure	p	10	bar-g
1102	Superimposed back pressure	paf	0	bar-g
1105	Overpressure	dp	10,00	%
1106	Environmental pressure	pu	1,013	bar
1107	Temperature	T	150	°C
1108	Required massflow	qm,ab	10.000	kg/h
Sizing				
1200	Certified massflow	qm,zu	11.427,603	kg/h
1201	Certified volumeflow (operating condition)	qv,b,zu	-	m³/h

# Two Phase Flow. VdTÜV Merkblatt 100.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Service condition:** Butane, Set pressure = 10bar g, required massflow = 10000kg/h

**Valve construction:** Type 441, semi nozzle, Carbon Steel body (1.0619/WCB), closed bonnet, lifting device cap H2



**Create new sizing wizard - Sizing Type and Medium Selection**

**Sizing Type and Medium Selection**

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Two-phase flow
Sizing standard	VdTÜV-Merkblatt SV 100/2
Selected units	VdTÜV-Merkblatt SV 100/2
CDTF Calculation	<input checked="" type="checkbox"/>

# Two Phase Flow. VdTÜV Merkblatt 100.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Create new sizing wizard - Medium selection**

**Medium selection**  
Use this page to select a medium.

Butane (n) (C4 H10) 0 %

Name	Formula	Molar mass	k	%	
Butane (n)	C4 H10	58,1	kg/kmol	1,09	100,00

Total percentage 100,00%

Designation	Butane (n)	Molar mass	M	58,1	g/kmol
Type of mix	Volume	Ratio of specific heats	k	1,090	
		Compressibility factor	Z	1,000	

# Two Phase Flow. VdTÜV Merkblatt 100.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

Create new sizing wizard - Service condition

### Service Condition

At this step you need to set values for Input Pressure, Temperature, Massflow or Volumeflow.

Set pressure	p	10	bar-g
Overpressure	dp	10,00	%
Required massflow	qm,ab	10000	kg/h

Options

Case for blow off	
-------------------	--

Remark: According to J.C. LEUNG [1] it is proved that the function  $Y = \%$  for pressures between 4 bar und 150 bar in double logarithmic coordinate system is following nearly a straight line also for chemical different mediums, like propane, propen, n-butane, n-butene and water. Other mediums shall be estimated according to [1], because there might be other courses for Y.

Help Back Next Finish Cancel

# Two Phase Flow. VdTÜV Merkblatt 100.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Create new sizing wizard - Valve finder**

### Valve Finder

Please specify the required valve parameters. Leave the fields blank to list all the available valve types.

Product group	High Performance
Bonnet	
Nozzle design	

- High Performance
- API Series
- Compact Performance
- Clean Service
- Critical Service
- Modulate Action
- S&R - Safety Valves for special or regional Application

# Two Phase Flow. VdTÜV Merkblatt 100.

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**Create new sizing wizard - Valve selection**

**Valve Selection**

First, choose a valve group and then any one valve from that group.

Type	Diameter range	Body material
441, 442 ANSI	NPS 1" - 4"	1.0619 / SA 216 WCB
441, 442 DIN	DN 20 - 200	Lifting device
441, 442 Full...	NPS 1" - 4"	Cap H2

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
-47,97	5.203,188	4412.4502	20x40	18	Type 4412 DN 20
-15,05	8.495,329	4412.4512	25x40	23	Type 4412 DN 25
35,06	13.505,807	4412.4522	32x50	29	Type 4412 DN 32
119,85	21.985,077	4412.4532	40x65	37	Type 4412 DN 40
239,81	33.981,317	4412.4542	50x80	46	Type 4412 DN 50
478,13	57.813,204	4412.4552	65x100	60	Type 4412 DN 65
779,40	87.940,307	4412.4562	80x125	74	Type 4412 DN 80
1259,25	135.925,267	4412.4572	100x150	92	Type 4412 DN 100
1442,33	154.232.782	4412.4582	125x200	98	Type 4412 DN 125

Select

Capacity exceed [%]	Certified massflow [kg/h]	Article No.	DN inlet x DN outlet	d0	Description
35,06	13.505,807	4412.4522	32x50	29	Type 4412 DN 32

Total: capacity exceed 35,06 [%], certified massflow 13.505,807 [kg/h]

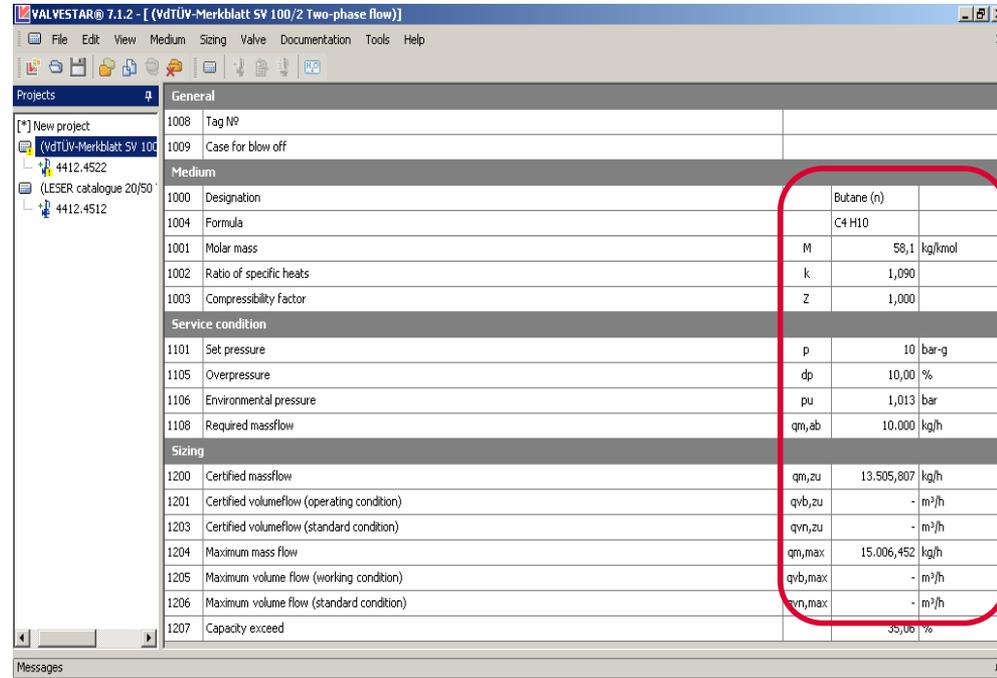
Remove

Help Back Next Finish Cancel

# Two Phase Flow. VdTÜV Merkblatt 100.

1. Introduction | 2. Sizing | 3. Fire | 4. **Two Phase** | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## Result: Documentation on screen



The screenshot shows the VALVESTAR@ 7.1.2 software interface. The main window displays a table with project configuration data. The 'Medium' section is highlighted with a red rounded rectangle. The table contains the following data:

General			
1008	Tag NP		
1009	Case for blow off		
Medium			
1000	Designation	Butane (n)	
1004	Formula	C4 H10	
1001	Molar mass	M	58,1 kg/kmol
1002	Ratio of specific heats	k	1,090
1003	Compressibility factor	Z	1,000
Service condition			
1101	Set pressure	p	10 bar-g
1105	Overpressure	dp	10,00 %
1106	Environmental pressure	pu	1,013 bar
1108	Required massflow	qm,ab	10.000 kg/h
Sizing			
1200	Certified massflow	qm,zu	13.505,807 kg/h
1201	Certified volumeflow (operating condition)	qv,b,zu	- m³/h
1203	Certified volumeflow (standard condition)	qv,n,zu	- m³/h
1204	Maximum mass flow	qm,max	15.006,452 kg/h
1205	Maximum volume flow (working condition)	qv,b,max	- m³/h
1206	Maximum volume flow (standard condition)	qv,n,max	- m³/h
1207	Capacity exceed		35,06 %

# Two Phase Flow. Omega method according API 520 Appendix D.

[1. Introduction](#) | [2. Sizing](#) | [3. Fire](#) | **[4. Two Phase](#)** | [5. Add. Sizing](#) | [6. Reporting and Settings](#) | [7. Translation](#) | [8. Data Change](#) | [9. Copy and Paste](#) | [10. Internet](#) | [11. Spares](#)

---

**Service condition:** Propene; Set pressure = 10bar g,  
required massflow = 10000kg/h

**Valve construction:** Type 441, semi nozzle, Carbon Steel  
body (1.0619/WCB),  
closed bonnet, lifting device cap H2

**LESER**

The-Safety-Valve.com

# Additional Sizings, Noise Level, Reaction Forces.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Reaction force and noise level

**Create new sizing wizard - Sizing Type and Medium Selection**

### Sizing Type and Medium Selection

At this step you need to select a type of sizing and a medium. Please specify sizing or calculation for a valve. Then specify a medium and

Tag No.	
Medium	Gas
Sizing standard	ASME VIII
Selected units	ASME VIII
CDTP Calculation	<input checked="" type="checkbox"/>

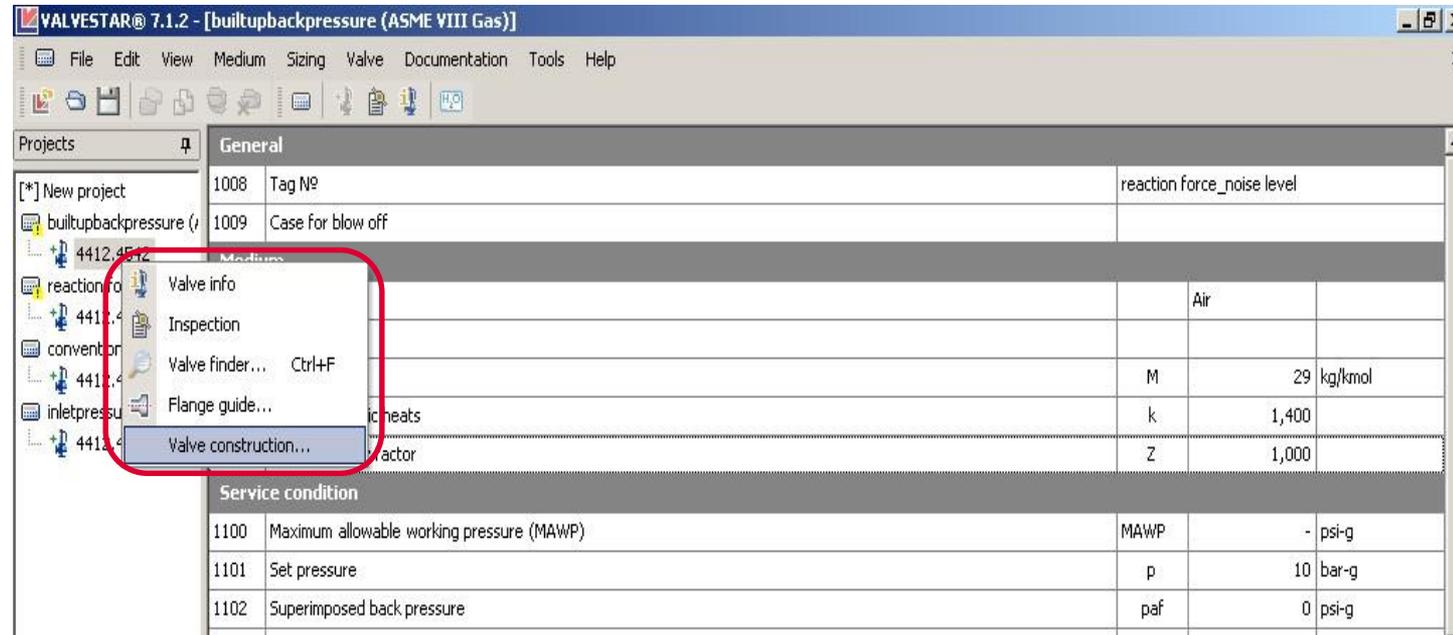
Additional calculations

	AD2000:A2	API 520	ISO / CD 4126-9
Reaction force	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Fire Case		<input type="checkbox"/>	
Pressure drop inlet line	<input type="checkbox"/>		<input type="checkbox"/>
Built up back pressure outlet pipe	<input type="checkbox"/>		<input type="checkbox"/>

# Additional Sizings, Noise Level, Reaction Forces.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Reaction force and noise level



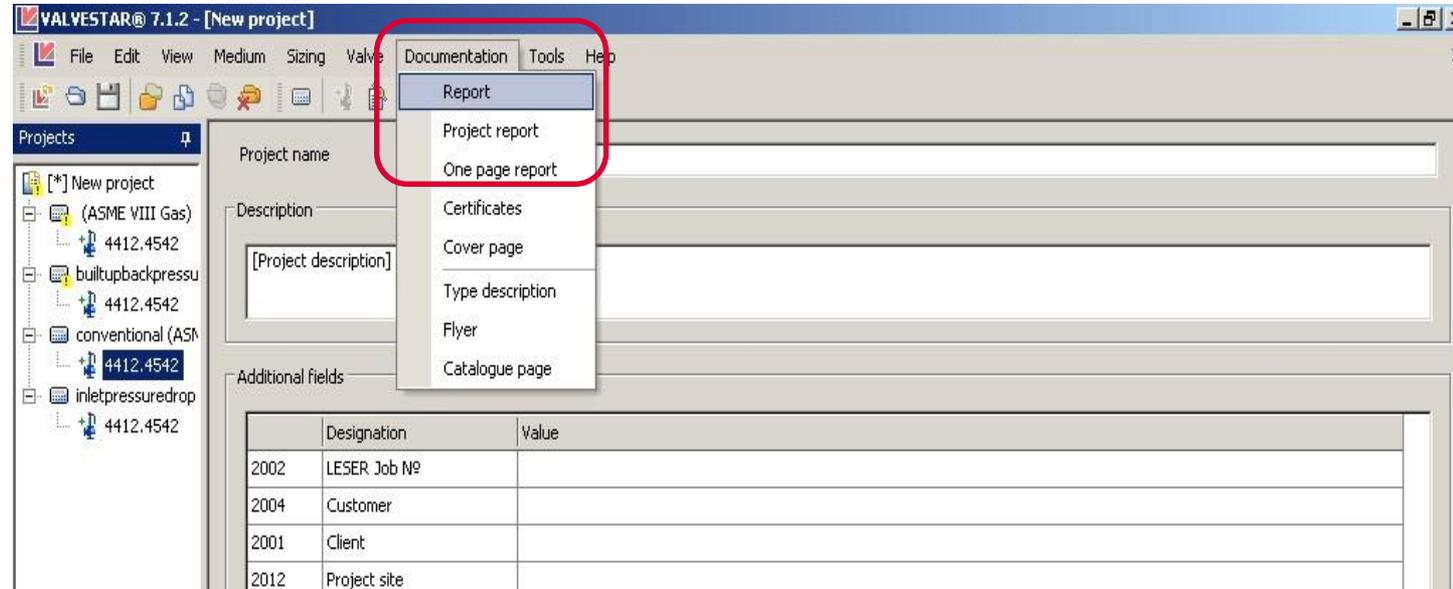
The screenshot shows the VALVESTAR@ 7.1.2 software interface. The main window displays a table with project configurations. A context menu is open over the 'reaction force' entry, with 'Valve construction...' highlighted. The table includes columns for Tag No, Case, Medium, and Service condition.

Tag No	Case	Medium	Service condition
1008	Tag No	reaction force_noise level	
1009	Case for blow off		
		Air	
		M	29 kg/kmol
		k	1,400
		Z	1,000
1100	Maximum allowable working pressure (MAWP)	MAWP	- psi-g
1101	Set pressure	p	10 bar-g
1102	Superimposed back pressure	paf	0 psi-g

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Create a report



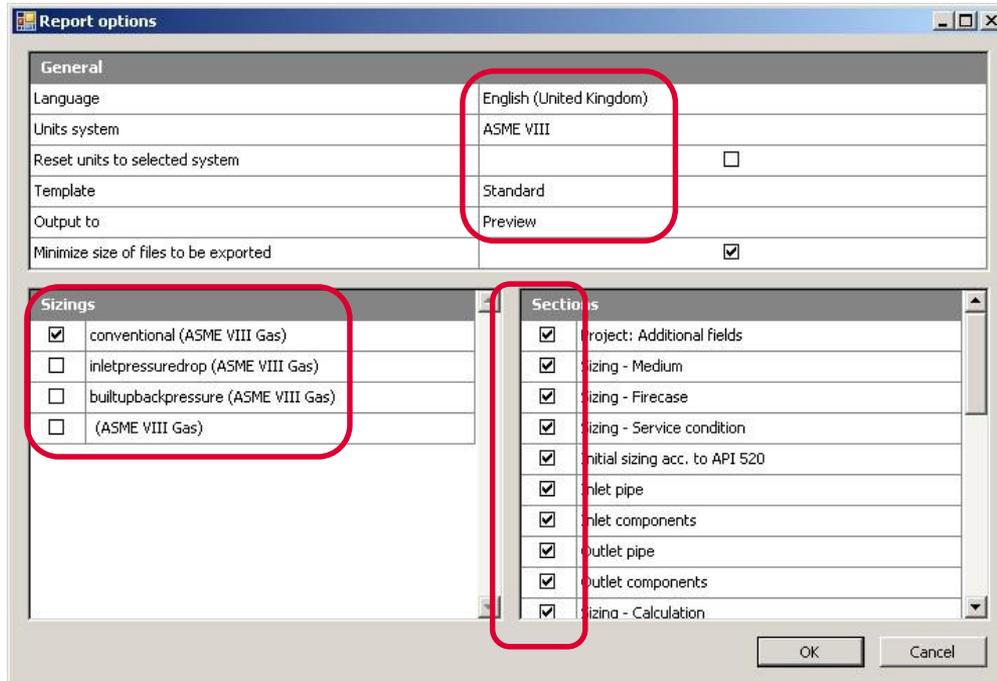
**LESER**

The-Safety-Valve.com

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Create a report



# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

**Report options**

**General**

Language	English (United Kingdom)
Units system	ASME VIII
Reset units to selected system	<input type="checkbox"/>
Template	Standard
Output to	Preview
Minimize size of files to be exported	<input checked="" type="checkbox"/>

**Sizings**

<input checked="" type="checkbox"/>	(ASME VIII Gas)
-------------------------------------	-----------------

**Main sections**

- Sizing - Medium
- Sizing - Service condition
- Sizing - Calculation
- Valves
- Valve - General
- Inlet connection

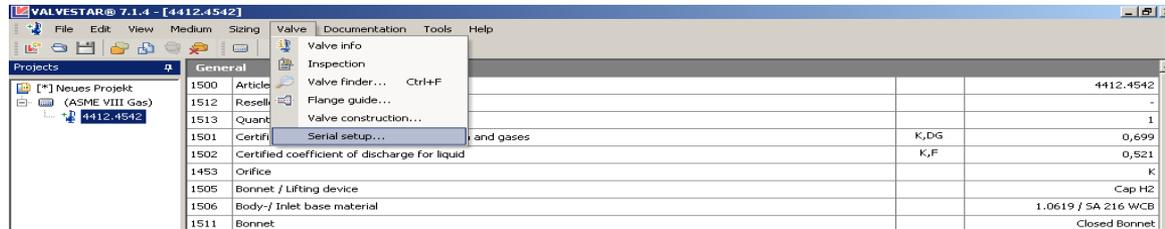
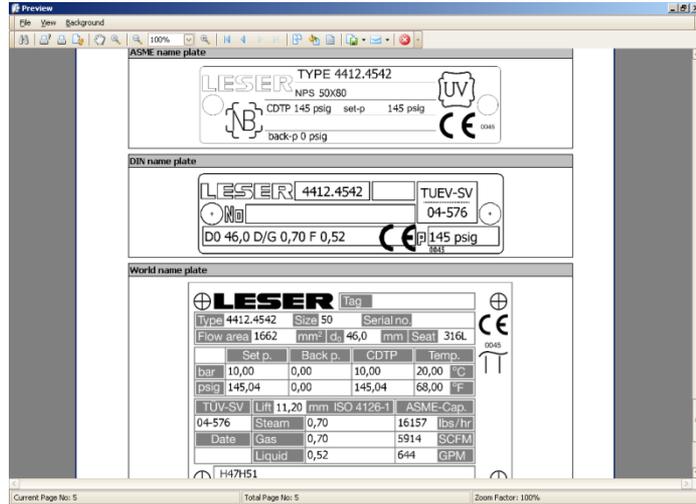
**Additional sections**

- Comments
- Coloured
- Sectional with item no
- ASME nameplate
- DIN nameplate
- World nameplate

OK Cancel

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

Nº	Tag Nº	Article Nº	Order code	Serial number	Date
1		4412.4542	4412.4542-10 bar-g-H47H51 ...	2000000	Samstag , 23. F

Preview

ASME name plate

DIN name plate

World name plate

Type	Size	Serial no.	CE	
4412.4542	50	2000000	0045	
Flow area	166 mm <sup>2</sup>	d <sub>1</sub> 46,0 mm		Seat 316L
Set p.	Set p.	Set p.	Temp.	
bar	10,00	0,00	10,00	20,00 °C
psig	145,04	0,00	145,04	68,00 °F
TUV-SV	Lift	mm ISO 4126-1	ASME-Cap.	
04-576	Stream	0,70	16157 lbs/hr	
Date	Gas	0,70	5914 SCFM	
23/02/2008	Liqu	0,52	644 GPM	

Current Page No: 5 Total Page No: 5 Zoom Factor: 100%

**LESER**

The-Safety-Valve.com

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 1. Step: Create a report

**LESER**  
The-Safety-Valve.com

Sizing acc. to  
ASME VIII for Gas  
VALVESTAR® - v.7.1.522.0

Page: 1 of 5  
Date: 05/29/2007 09:39:25  
Project: New project  
Tag No.: conventional  
LESER Job N°

Sizing - Medium			
1000	Designation		Air
1004	Formula		
1001	Molar mass	M	29 kg/kmol
1002	Ratio of specific heats	k	1,400
1003	Compressibility factor	Z	1,000

Sizing - Service condition			
1100	Maximum allowable working pressure (MAWP)	MAWP	
1101	Set pressure	p	10 bar-g
1102	Superimposed back pressure	paf	0 psi-g
1103	built up back pressure	pae	
1104	Backpressure		0 psi-g
1105	Overpressure	dp	10,00 %
1106	Environmental pressure	pu	14,696 psi
1107	Temperature	T	20 PC
1108	Required massflow	qm,ab	11,500 kg/h
1109	Volume flow to be discharged (working condition)	qv,ab	28,412,535 R³/h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14,7 psi]	qm,ab	5,527,018 SCFM
1120	Rupture disc correction factor	Kc	1,000

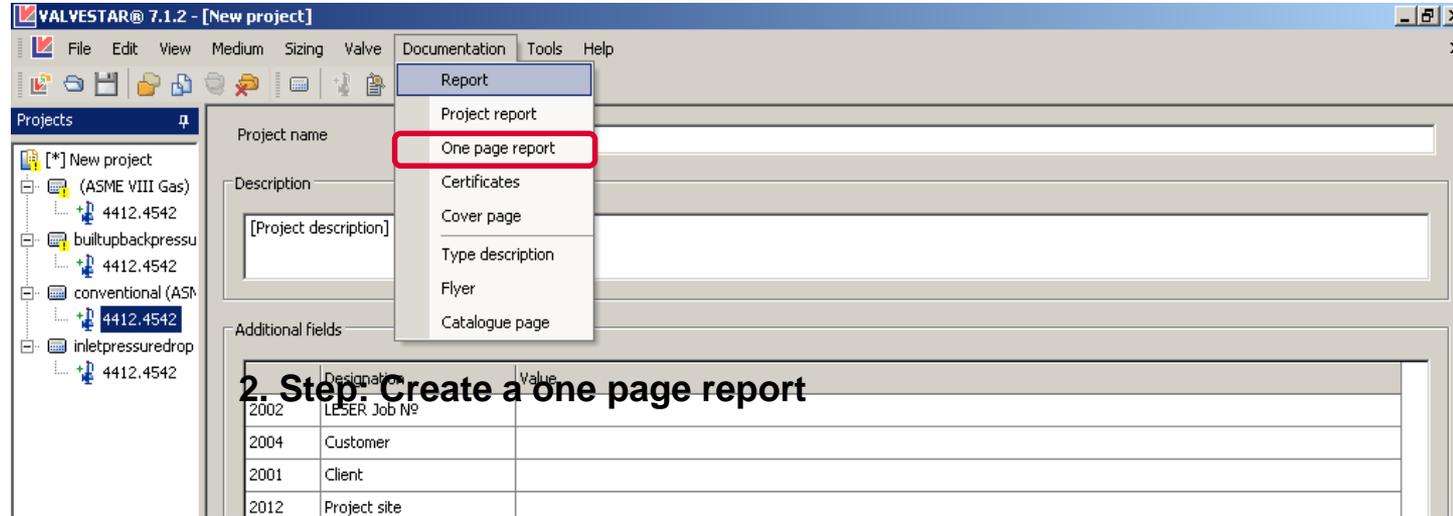
Sizing - Calculation			
1200	Certified massflow	qm,zu	26,187,754 lb/h

Current Page No: 1 | Total Page No: 5 | Zoom Factor: 100%

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Create a one page report



The screenshot shows the VALVESTAR@ 7.1.2 software interface. The 'Report' menu is open, and 'One page report' is highlighted with a red rectangle. The main window displays a project configuration form with fields for Project name, Description, and Additional fields. The 'Additional fields' section contains a table with the following data:

Designation	Value
2002	LESER Job No
2004	Customer
2001	Client
2012	Project site

## 2. Step: Create a one page report

**LESER**

The-Safety-Valve.com

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Create a one page report

**One page report options**

Header data	
Order No	
Serial No	
Customized No	
Customer No	
LESER Order Code	4412.4542-10 bar-g-H47H51-3.1
Remark	

Settings	
Language	English (United Kingdom)
Units system	ASME VIII
Reset units to selected system	<input type="checkbox"/>
Template	Vertical
Output to	Preview
Minimize size of files to be exported	<input type="checkbox"/>

OK Cancel

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 2. Step: Create a one page report

**Order Data**

LESER  
The Safety Valve

Order No.: conventional  
Tag No.:  
Serial No.:  
Customized No.:

Customer No.:

LESER  
The Safety Valve

Contact:  
Phone:  
Fax:  
E-mail:

LESER Order Specification  
Safety relief valve in acc. to  
ASME VIII

**LESER Order Code** 4412.4542-10 bar-g-H47H51-3.1

**Part List**

PosNo	Denomination	Q	Material	ASME	Material DIN	DN
1	Body	1	SA 216 WC6B	1.0019		
5	Seat	1	316L	1.4404		
7	Disc	1	Hardened Stainless	1.4122		
8	Guide	1	Steel	1.0501/1.0038/1.41		
9	Bonnet	1	Ductile Gr. 60-40	180 2040		
12	Spindle	1	402	1.4021		
18	Adjusting screw	1	SA 479 430	1.4104		
40	Cap H2	1	Steel	1.0718		
54	Spring	1	Carbon steel	1.1200		
56	Nut	1	4-2H	1.0501		
60	Gasket	1	Graphite/1-401	1.4401	1.4401	
61	Ball washer	1	Hardened Stainless	1.3541/1.4401		

MTC: Material Test Certificates  
LESER CGA (Certificate Global Application)  
if required MTC required

**TYPE** 4412.4542

**VALVE DIMENSION**

Type	Scale	ISO
Inlet	Rating	PN 40
Inlet	Facing	DIN EN 1092-1 For
Outlet	Scale	PN 16
Outlet	Rating	PN 16
Outlet	Facing	DIN EN 1092-1 For
Flow diameter	d1	1.3113 inch
Weight	M	48.502 lb
Dimension	a	5.906 inch
Dimension	b	4.724 inch
Dimension	H	22.402 inch
Set pressure	P	10 bar-g
Set pressure	psid	145.030 [bar-g]

**REVISION**

Name	Date	Rev.No
Default user	05/29/2007	1

Approved by LESER/SB/SDARY

Approved by customer

Date: 29/05/2007 Date: / /

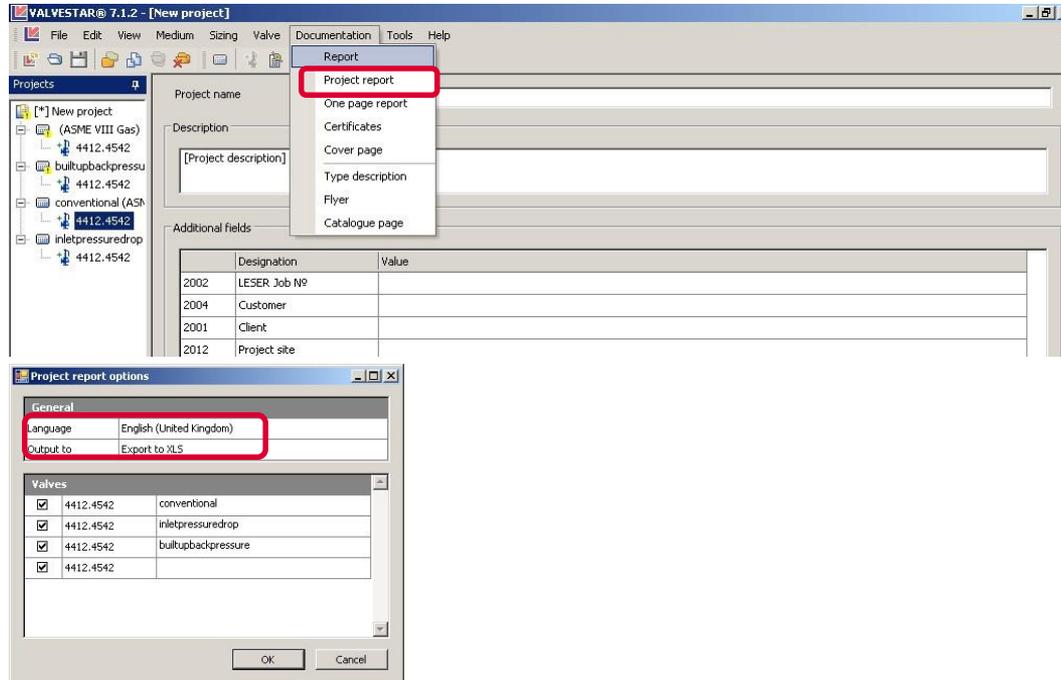
Signature: / / Signature: / /

Current Page No: 1 Total Page No: 1 Zoom Factor: 76%

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## 3. Step: Create a project report



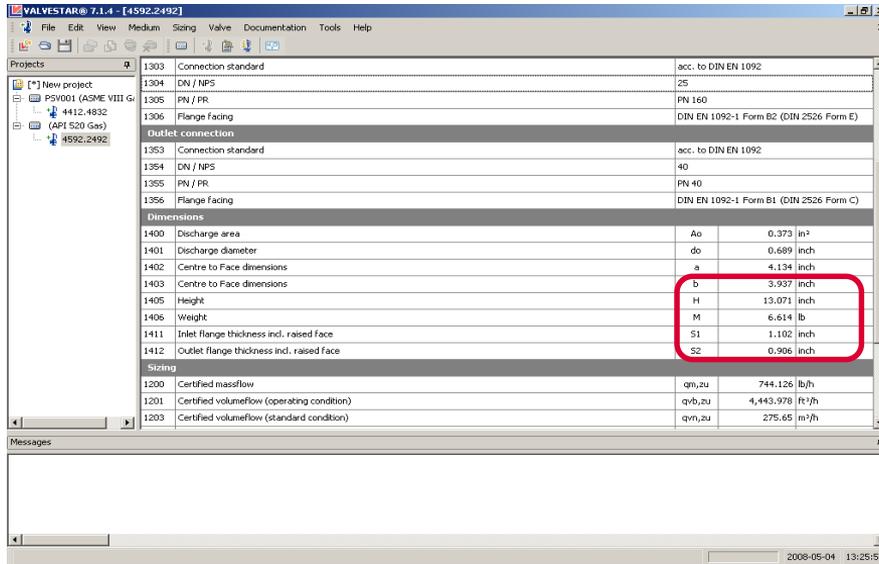


# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is new for dimensions S1, S2, c?

These data have been added to the database for all slip on flange based safety valve and all full nozzle safety valve to get the correct bolt length or thread length.



The screenshot shows the VALVESTAR 7.1.4 software interface. The main window displays a table of dimensions for a safety valve. The dimensions S1 and S2 are highlighted with a red box. The table is organized into sections: Connection standard, Outlet connection, Dimensions, and Sizing.

Connection standard			
1303	Connection standard	acc. to DIN EN 1092	
1304	DN / NPS	25	
1305	PN / PR	PN 160	
1306	Flange facing	DIN EN 1092-1 Form B2 (DIN 2526 Form E)	
Outlet connection			
1353	Connection standard	acc. to DIN EN 1092	
1354	DN / NPS	40	
1355	PN / PR	PN 40	
1356	Flange facing	DIN EN 1092-1 Form B1 (DIN 2526 Form C)	
Dimensions			
1400	Discharge area	Ao	0.373 in <sup>2</sup>
1401	Discharge diameter	do	0.689 inch
1402	Centre to Face dimensions	a	4.134 inch
1403	Centre to Face dimensions	b	3.937 inch
1405	Height	H	13.071 inch
1406	Weight	M	6.614 lb
1411	Inlet flange thickness incl. raised face	S1	1.102 inch
1412	Outlet flange thickness incl. raised face	S2	0.906 inch
Sizing			
1200	Certified massflow	qm,zu	744.126 lb/h
1201	Certified volumeflow (operating condition)	qv,b,zu	4,443.978 ft <sup>3</sup> /h
1203	Certified volumeflow (standard condition)	qv,n,zu	275.65 m <sup>3</sup> /h

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## How I find it in the documentation

In the report full-version the additional dimensions are listed if these are available

The screenshot shows a software report window titled "Preview" with a menu bar (File, View, Background) and a toolbar. The report content is organized into several sections:

- Inlet connection:**

1303	Connection standard		acc. to DIN EN 1092
1304	DN / NPS		25
1305	PN / PR		PN 160
1306	Flange facing		DIN EN 1092-1 Form B2 (DIN 2526 Form E)
- Outlet connection:**

1353	Connection standard		acc. to DIN EN 1092
1354	DN / NPS		40
1355	PN / PR		PN 40
1356	Flange facing		DIN EN 1092-1 Form B1 (DIN 2526 Form C)
- Valve - Dimensions:**

1400	Discharge area	A <sub>0</sub>	0.373 in <sup>2</sup>
1401	Discharge diameter	d <sub>0</sub>	0.689 inch
1402	Centre to Face dimensions	a	4.134 inch
1403	Centre to Face dimensions	b	3.937 inch
1405	Height	H	13.071 inch
1406	Weight	M	6.614 lb
1411	Inlet flange thickness incl. raised face	S1	1.102 inch
1412	Outlet flange thickness incl. raised face	S2	0.906 inch
- Lift:**

1507	Standard		0.154 inch
------	----------	--	------------
- Valve - Calculation:**

1200	Certified massflow	qm,zu	744.126 lb/h
1201	Certified volume flow (operating condition)	qv,b,zu	4,443.978 ft <sup>3</sup> /h
1203	Certified volume flow (standard condition)	qm,zu	275.65 m <sup>3</sup> /h
1204	Maximum mass flow	qm,max	826.806 lb/h
1205	Maximum volume flow (working condition)	qv,b,max	4,937.753 ft <sup>3</sup> /h
1206	Maximum volume flow (standard condition)	qv,max	306.278 m <sup>3</sup> /h

At the bottom of the window, it shows "Current Page No: 2", "Total Page No: 6", and "Zoom Factor: 100%".

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## How I find it in the documentation

In the one-page report the additional dimensions are listed if these are available

The screenshot displays a software interface for a LESER report. The main content area is divided into several sections:

- LESER Logo:** The Safety-Valve.com logo is prominently displayed at the top left.
- Product Information:** A table lists the product as a "Safety relief valve Compact Performance Type 459".
- Order Data:** Fields for Order No., Tag No., and Serial No. are present.
- LESER Order Code:** The code is listed as #632.2492-15 psi-g-132149-3.1.
- Name and Date:** The name is "AD 2000 Martini A2" and the date is "2008-05-04 13:23:50".
- Part List Table:** A detailed table lists components such as Inlet body, Outlet body, Disc, Gasket, Bonnet, Spindle, Adjusting screw, Cap HS, Spring, and Ball washer, along with their quantities, materials, and dimensions.
- Dimensions Table:** A table lists dimensions: Flow diameter (0.8393 inch), Weight (6.614 lb), and other dimensions (a, b, H, S1, S2).
- Technical Drawing:** A schematic drawing of the valve is shown with callouts for various parts and dimensions.
- Material Test Certificates:** A section for Material Test Certificates (MTC) is visible, with a note that they are not required for this application.

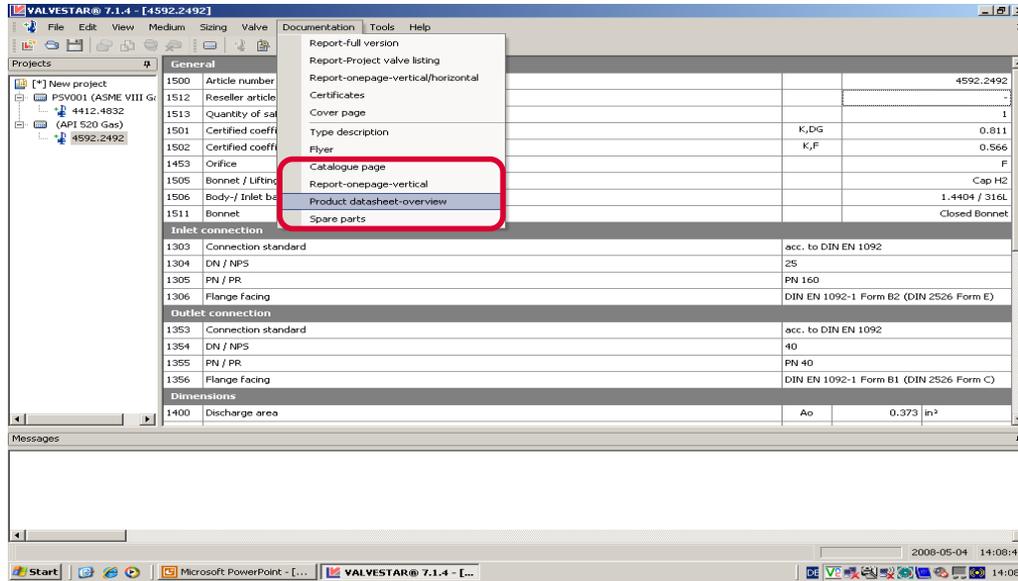
The report is displayed in a "Preview" window with a zoom factor of 80%. The status bar at the bottom indicates "Current Page No: 1", "Total Page No: 1", and "Zoom Factor: 80%".

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the Product datasheet ?

The product datasheet is an overview of a single safety valve and its main features like drawing, dimensions and weight, possible options, approval, ...

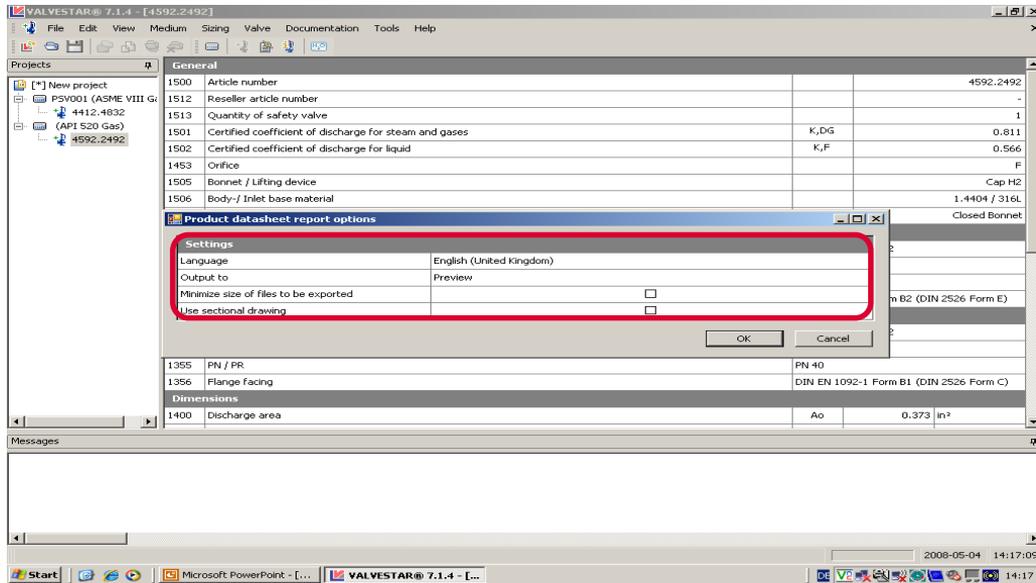


# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the Product datasheet ?

For product datasheet two different drawings as main drawing could be selected: coloured drawing as standard and sectional drawing if needed.





# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the Product datasheet ? With sectional drawing

**LESER** The-Safety-Valve.com  
Productdatasheet

**Valve Design and Dimensions**

LESER-Art.-No. 14926-2492

Productgroup Compact Performance

Design Type

Code base

Flow diameter

d0	17.5	0.689	mm/inch
	0.310		mm/inch

Orifice

a	105	4.134	mm/inch
b	100	3.937	mm/inch

Dimension

c	0	0	mm/inch
S1			mm/inch
S2			mm/inch
H	332	13.071	mm/inch
M	3	0.118	mm/inch

Weight

M	3	0.118	kg/lb
---	---	-------	-------

Standard

DN	PN	Facing	Standard
Inlet	25	PN 16/DIN EN 1092-1	acc. to DIN EN 1092
Outlet	40	PN 40 / DIN EN 1092-1	acc. to DIN EN 1092

**Valve Partlist**

Item	Denomination	Q	DIN/ASME
1	Inlet body	1	1.4404 / 316L
2	Outlet body	1	1.0619 / SA 216 WCB
7	Disc	1	1.4122 / Hardened Stainless
8	Guide	1	1.0601 / 0039 / 1.4104 / Steel
9	Bonnet	1	1.0619 / SA 216 WCB
12	Spindle	1	1.4021 / 420
18	Adjusting screw	1	1.4104 / SA 479 430
40	Cap Hz	1	1.0718 / Steel
54	Spring	1	1.1200 / Carbon steel
61	Ball washer	1	1.3541 / 1.4401 / Hardened St

**Drawing**

**Options**

Item	Denomination	Q	DIN/ASME

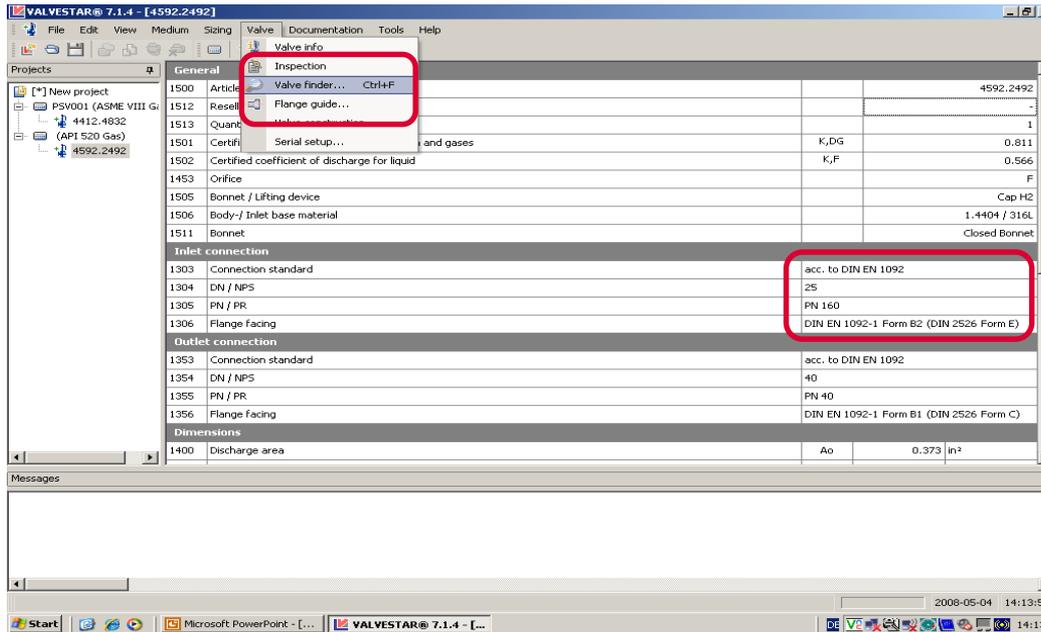
Current Page No: 1      Total Page No: 1      Zoom Factor: 100%

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is different to a report or one-page report?

The product datasheet is also available without sizing, with the feature “Valve finder”



# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is different to a report or one-page report?

All possible options are listed and shown

**LESER** The-Safety-Valve.com  
Productdatasheet

**Valve Design and Dimensions**  
LESER-Art.-No. 4592-2492  
Productgroup Compact Performance  
Design Type  
Code base  
Flow diameter  
Orifice  
Dimension  
Weight  
Standard DN PN Facing Standard  
Inlet  
Outlet  
Drawing

**Valve Partlist**

Item	Denomination	Q	DIN/ASME
1	Inlet body	1	1.4404 / 316L
2	Outlet body	1	1.0619 / SA 216 WC6
7	Disc	1	1.4122 / Hardened Stainless
8	Guide	1	1.0601 / 1.0038 / 1.034 / Steel
9	Bonnet	1	1.0619 / SA 216 WC6
12	Spindle	1	1.4021 / 420
18	Adjusting screw	1	1.4104 / SA 479-430
40	Cap H2	1	1.0718 / Steel
54	Spring	1	1.1200 / Carbon steel
61	Ball washer	1	1.3541 / 1.4401 / Hardened St

**Options**

H29	325	344
348	349	L20

Current Page No: 1 | Total Page No: 1 | Zoom Factor: 100%

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report one-page-vertical ?

This report is an advanced one-page report with additional data which are necessary for completeness

The screenshot shows the VALVESTAR software interface. A menu is open over the 'General' tab, listing various report options. The 'Product datasheet-overview' option is highlighted. Below the menu, a table displays technical data for the selected project.

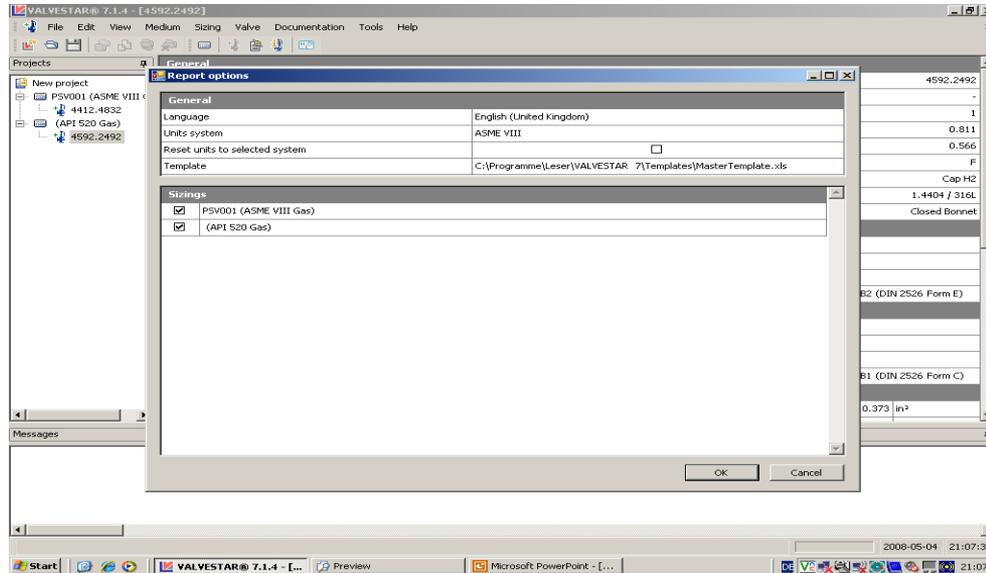
Article number	4592.2492
1500	Article number
1512	Reseller article
1513	Quantity of sales
1501	Certified coefficient
1502	Certified coefficient
1453	Orifice
1505	Bonnet / Lifting
1506	Body- / Inlet body
1511	Bonnet
<b>Inlet connection</b>	
1303	Connection standard
1304	DN / NPS
1305	PN / PR
1306	Flange facing
<b>Outlet connection</b>	
1353	Connection standard
1354	DN / NPS
1355	PN / PR
1356	Flange facing
<b>Dimensions</b>	
1400	Discharge area

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report onepage-vertical ?

This report is available as xls-file to change data for future redesign. The source of template is preset.

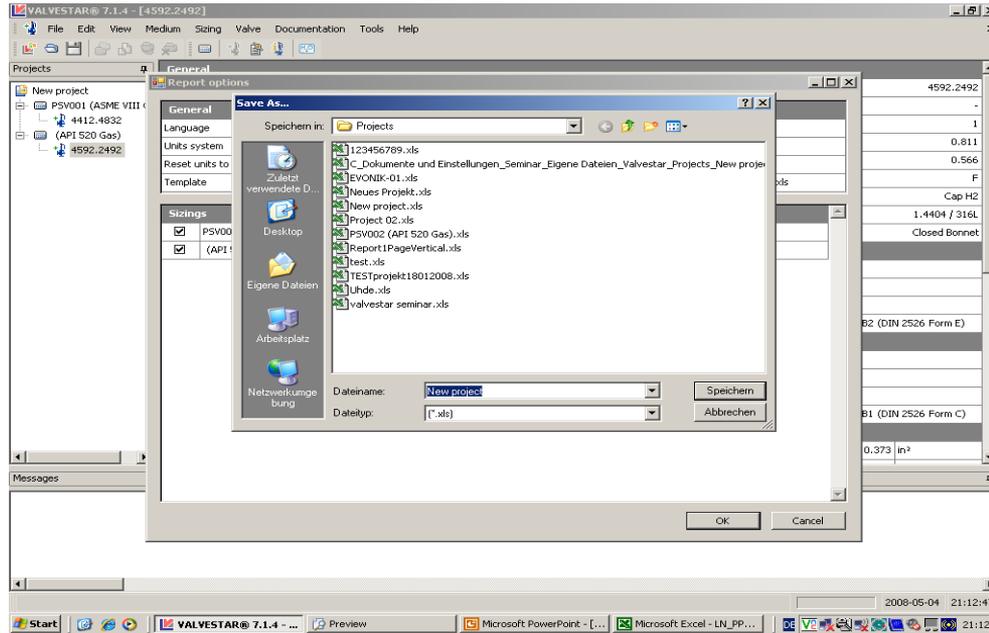


# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report one-page-vertical ?

### Define a file

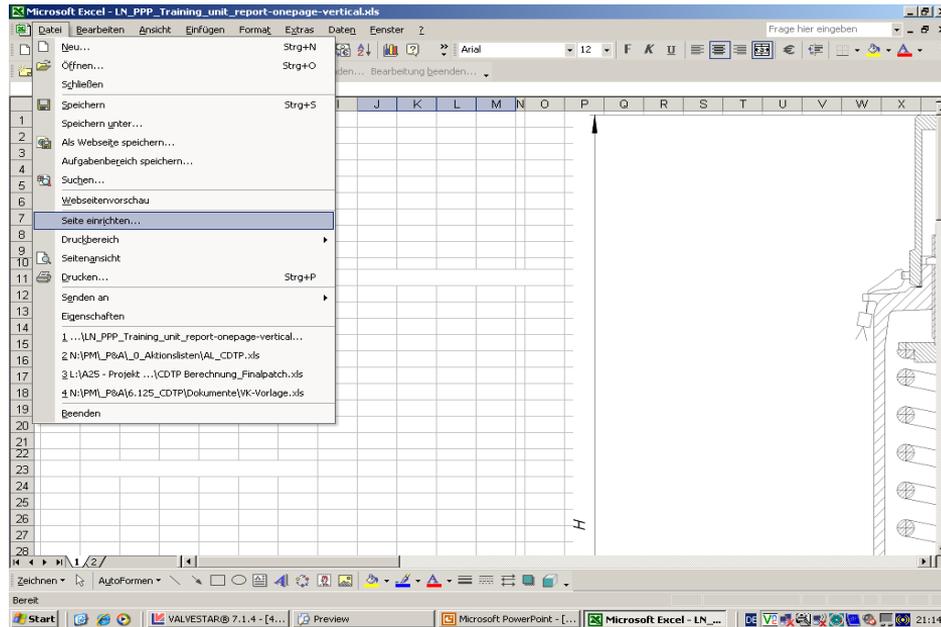


# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report one-page-vertical ?

The page has to be adjusted to an A4-format

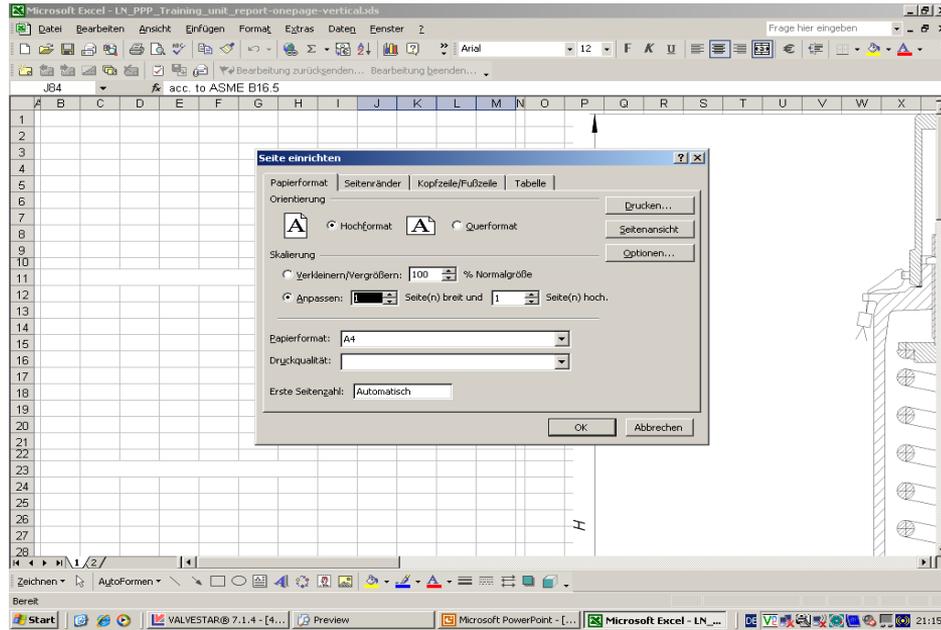


# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report one-page-vertical ?

The page has to be adjusted to an A4-format



# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the report one-page-vertical ?

The EXCEL-file can be added with additional data from user. Main data are picked from sizing data

The screenshot displays a Microsoft Excel spreadsheet titled "Microsoft Excel - LN\_PPP\_Training\_unit\_report-onepage-vertical.xls". The spreadsheet is divided into several sections:

- Design and Dimensions:** Includes fields for Part No. (4412 4832), Order Code (4412.4832-15 psi-g H65H79-3.1), Design Type, Code Basis, and Set pressure (15 psi-g).
- Flow diameter:** Lists dimensions d<sub>1</sub> (1.457 inch), a (4.882 inch), b (4.764 inch), and c.
- Dimension:** Lists dimensions s<sub>1</sub>, s<sub>2</sub>, and H (19.528 inch).
- Weight:** Lists dimensions m (35.274 lb) and n.
- Material:** Lists material specifications for Inlet (1.192, 3.100, 3.100) and Outlet (1.192, 3.100).
- Revision:** Lists revision details including date (2008-05-04) and prepared by (2000-Muskelur).
- Valve Partlist:** A table listing parts with columns for Item, Description, qty, Recommended Spare Subject No., DIN / ASME, and MTC. The table includes parts like Body, Seat, Disc, Guide, Bonnet, Spindle, Split ring, Spring plate, Adjusting screw, Lock nut, Lock nut, Spring, Bolt, Nut, Pin, Securing ring, and Gasket.
- LESER Logo:** The LESER logo is prominently displayed in the center of the spreadsheet.
- Order Information:** Includes fields for Order No., Order Date, and Order Status.

# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## What is the feature “name plate”?

Three current nameplates

are printed in the

“report full-version”

The screenshot displays a software window with a toolbar at the top and a main content area. The main content area is divided into three sections, each showing a different nameplate format for a valve. The top section is the ASME nameplate, the middle is the DIN nameplate, and the bottom is the World nameplate. The ASME nameplate includes the LESER logo, type number 4412.4832, size 1 1/2"x2 1/2", and pressure ratings. The DIN nameplate shows the LESER logo, type number 4412.4832, and various technical specifications. The World nameplate is a detailed table of specifications including flow area, set pressure, back pressure, CDTP, temperature, lift, steam flow, date, and liquid flow. The bottom of the window shows a status bar with 'Total Page No: 6' and 'Zoom Factor: 75%'.

Sizing acc. to		Page:	Page:
ASME VIII for Gas		Date:	2008-05-04 13:00:55
VALVESTAR® - v.7.1.4_06_07D		Project:	New project
		Tag No:	PSV001
		LESER Job No:	

**ASME nameplate**

LESER TYPE 4412.4832  
NPS 1 1/2"x2 1/2"  
CDTP 15 psig set-p 15 psig  
back-p 0 psig

**DIN nameplate**

LESER 4412.4832 TUEV-SV  
04-576  
D0 37.0 D/G 0.70 F 0.52 p 15 psig

**World nameplate**

Type	4412.4832	Size	1 1/2"	Serial no.	
Flow area	1075	mm <sup>2</sup>	d <sub>0</sub>	37.0	mm
Seat					316L
Set p.		Back p.	CDTP	Temp.	
bar	1.03	0.00	1.03	20.00	°C
psig	15.00	0.00	15.00	68.00	°F
TUV-SV	Lift	9.00	mm	ISO 4126-1	ASME-Cap.
04-576	Steam	0.70		1870	lbs/hr
Date	Gas	0.70		684	SCFM
	Liquid	0.52		140	GPM

H65H79

Total Page No: 6 Zoom Factor: 75%

**LESER**

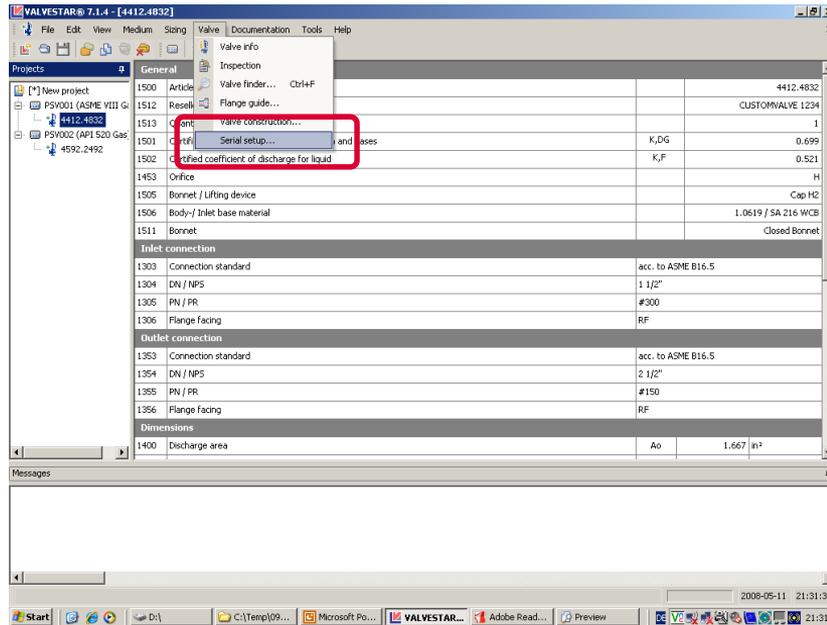
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# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## How can I add data to the initial “name plate”?

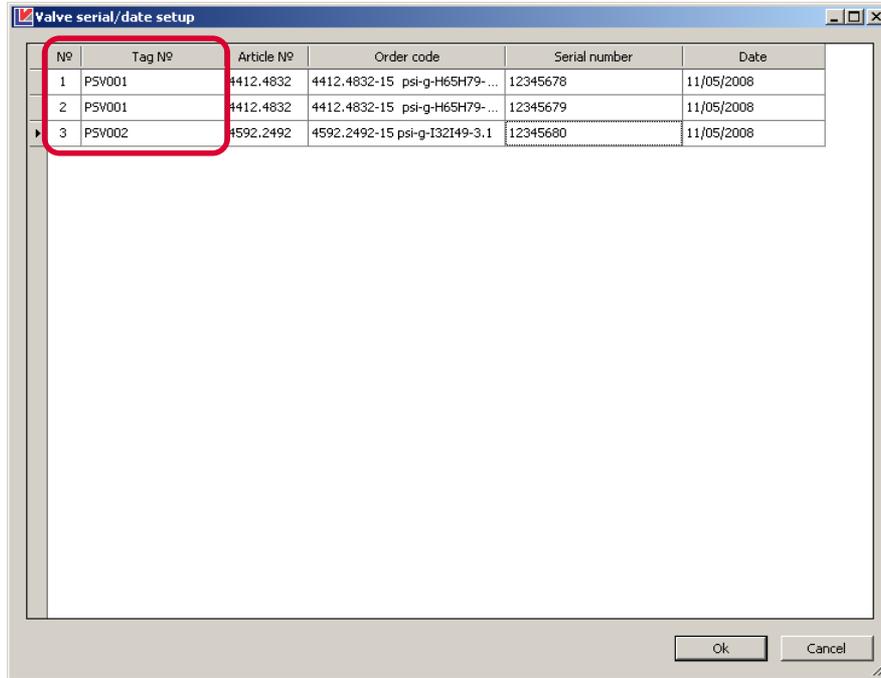
It is possible to add serial numbers and date of delivery later



# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## How can I add data to the initial “name plate”?



The screenshot shows a dialog box titled "Valve serial/date setup" with a table containing the following data:

Nº	Tag Nº	Article Nº	Order code	Serial number	Date
1	PSV001	4412.4832	4412.4832-15 psi-g-H65H79-...	12345678	11/05/2008
2	PSV001	4412.4832	4412.4832-15 psi-g-H65H79-...	12345679	11/05/2008
3	PSV002	4592.2492	4592.2492-15 psi-g-I32I49-3.1	12345680	11/05/2008

The first two rows of the table are highlighted with a red box. The dialog box also features "Ok" and "Cancel" buttons at the bottom.

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# Reporting.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

## After adding, what is new on “name plate”?

90%

VALVESTAR® - v.7.1.4\_06\_07.0 Tag No: PSV001  
LESER Job No:

**ASME nameplate**

TYPE 4412.4832  
LESER  
CDTP 15 psig set-p 15 psig  
12345678 05/08  
back-p 0 psig  
UV  
CE  
0045

This nameplate is valid for additional serial numbers, 12345679

**DIN nameplate**

LESER 4412.483 05/08 TUV-SV  
12345678 04-576  
D0 37.0 D/G 0.70 F 0.52  
CE  
15 psig  
0045

This nameplate is valid for additional serial numbers, 12345679

**World nameplate**

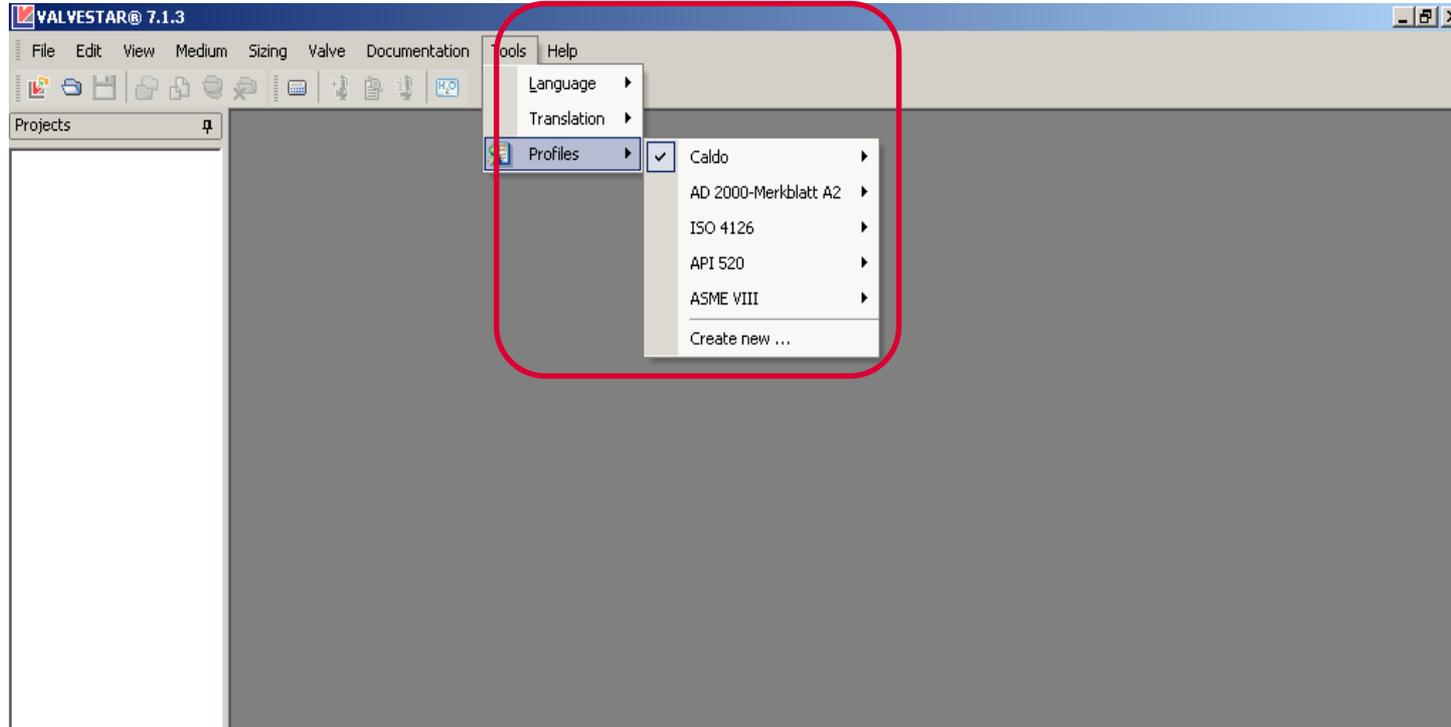
LESER Tag PSV001  
Type 4412.4832 Size 1 1/2" Serial n. 12345678  
Flow area 1075 mm<sup>2</sup> d<sub>0</sub> 37.0 mm  
Set p. Back p. CDTP Temp.  
bar 1.03 0.00 1.03 20.00 °C  
psig 15.00 0.00 15.00 68.00 °F  
TUV-SV Lift 9.00 mm ISO 4126-1 ASME-Cap.  
04-576 Steam 0.70 1870 lbs/hr  
Date Gas 0.70 684 SCFM  
05/08 Liqui 0.52 140 GPM  
H65H79

This nameplate is valid for additional serial numbers, 12345679

Total Page No: 6 Zoom Factor: 80%

# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

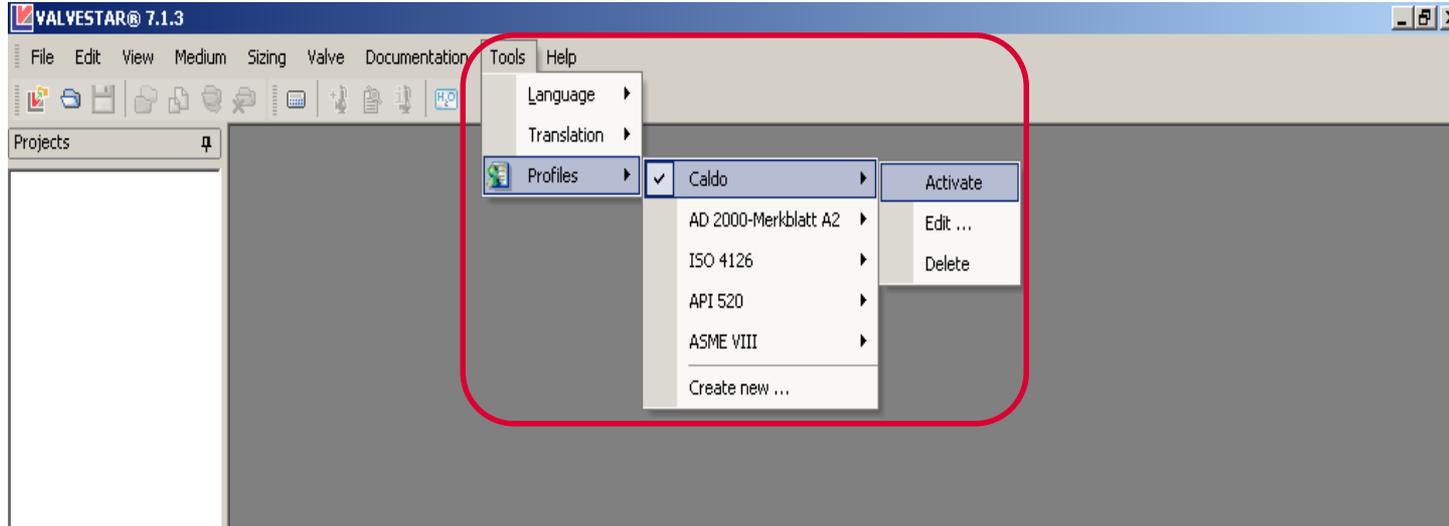


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# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

The screenshot shows a 'Profile' dialog box with the following fields and values:

Field	Value
Company	LESER GmbH & Co. KG
Street	
City	
Zip	
State	
Country	
E-mail	
Phone	
Phone mobile	
Fax	
Company logo	LESER The-Safety-Valve.com
Company logo 2	LESER The-Safety-Valve.com

# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

General	User information	Configuration	Unit settings	Valve settings	Volume flow standards	Preferences for report
User name	Andreas Caldonazzi					
Short name for revision	Caldo					
E-mail						
Phone						
Phone mobile						
Fax						
Approved by customer						

Name	Default user	Andreas Caldonazzi			
Date	08/15/2007 07:25:16	08/17/2007 11:47:28			
Rev.No	1	2			

General	User information	Configuration	Unit settings	Valve settings	Volume flow standards	Preferences for report
Environmental pressure		1,013 bar				
Decimal separator		.				
Group separator		.				
Application mode		Super user				
Isentropic exponent source		DIN EN ISO 4126-1				
Default sizing standard		DIN EN ISO 4126-1				
Default volume flow standard		DIN ISO 2533				
Projects storage		N:\PMI_MA\Cal				
Default paper size		A4				
Automatic updates		Daily				

# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

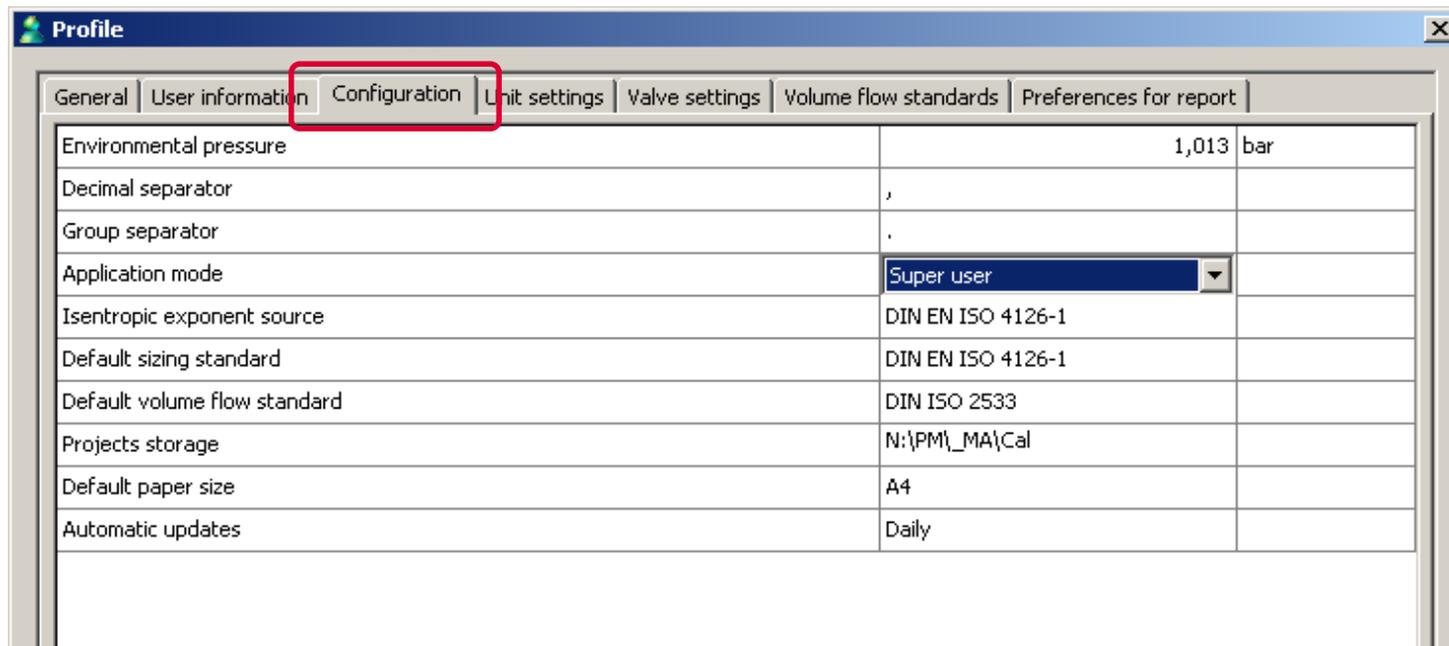
The screenshot shows a software window titled 'Profile' with a tabbed interface. The 'User information' tab is selected and highlighted with a red box. The form contains the following fields:

User name	Andreas Caldonazzi
Short name for revision	Caldo
E-mail	
Phone	
Phone mobile	
Fax	
Approved by customer	

Name	Default user	Andreas Caldonazzi		
Date	08/15/2007 07:25:16	08/17/2007 11:47:28		
Rev.No	1	2		

# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



The screenshot shows a software window titled "Profile" with a close button in the top right corner. Below the title bar is a tabbed interface with the following tabs: "General", "User information", "Configuration" (highlighted with a red box), "Unit settings", "Valve settings", "Volume flow standards", and "Preferences for report". The "Configuration" tab is active and displays a table of settings.

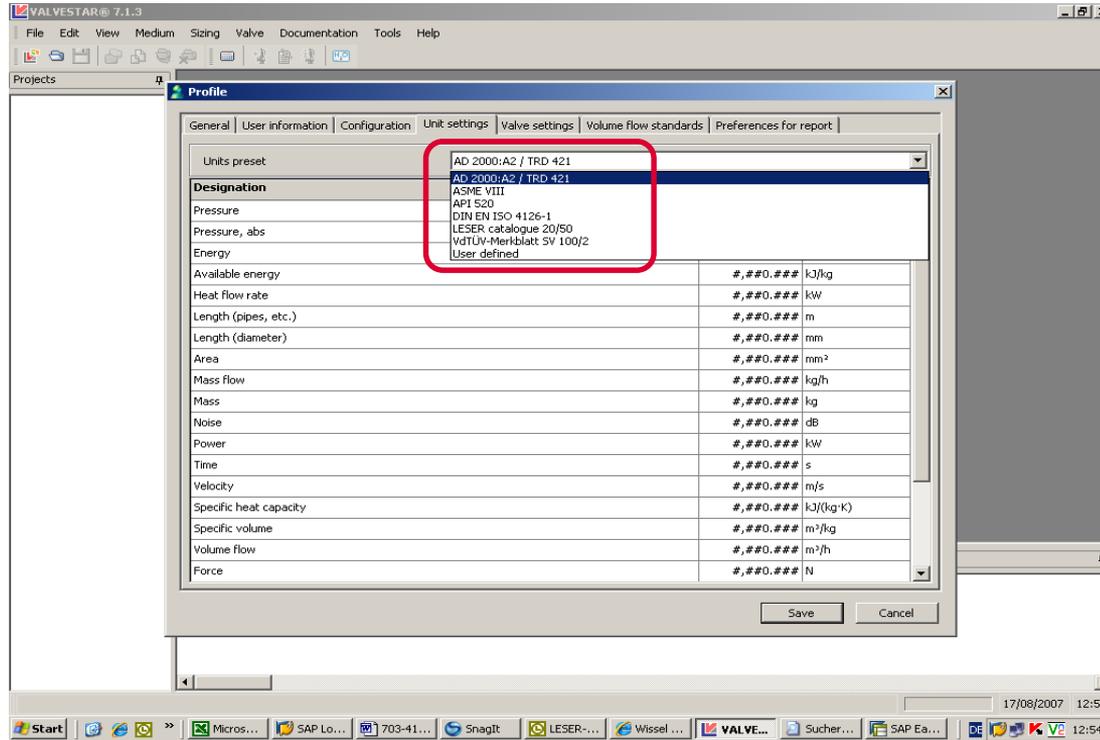
Environmental pressure		1,013 bar
Decimal separator	,	
Group separator	.	
Application mode	Super user	
Isentropic exponent source	DIN EN ISO 4126-1	
Default sizing standard	DIN EN ISO 4126-1	
Default volume flow standard	DIN ISO 2533	
Projects storage	N:\PM\_MA\Cal	
Default paper size	A4	
Automatic updates	Daily	

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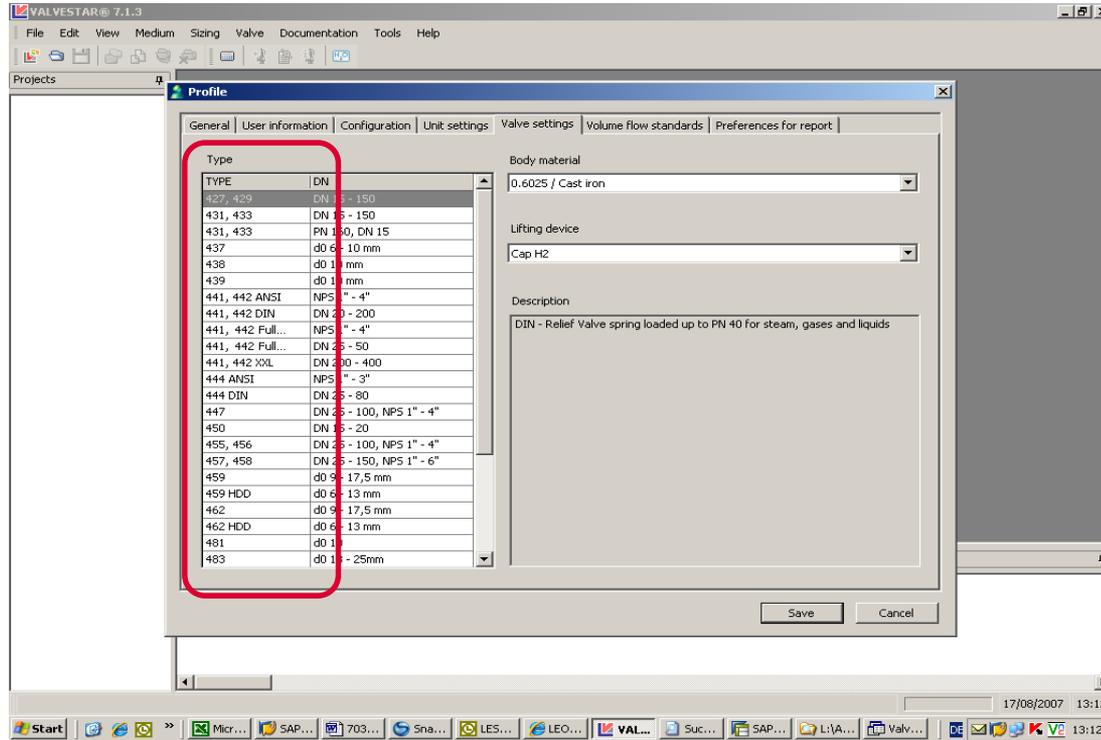
# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



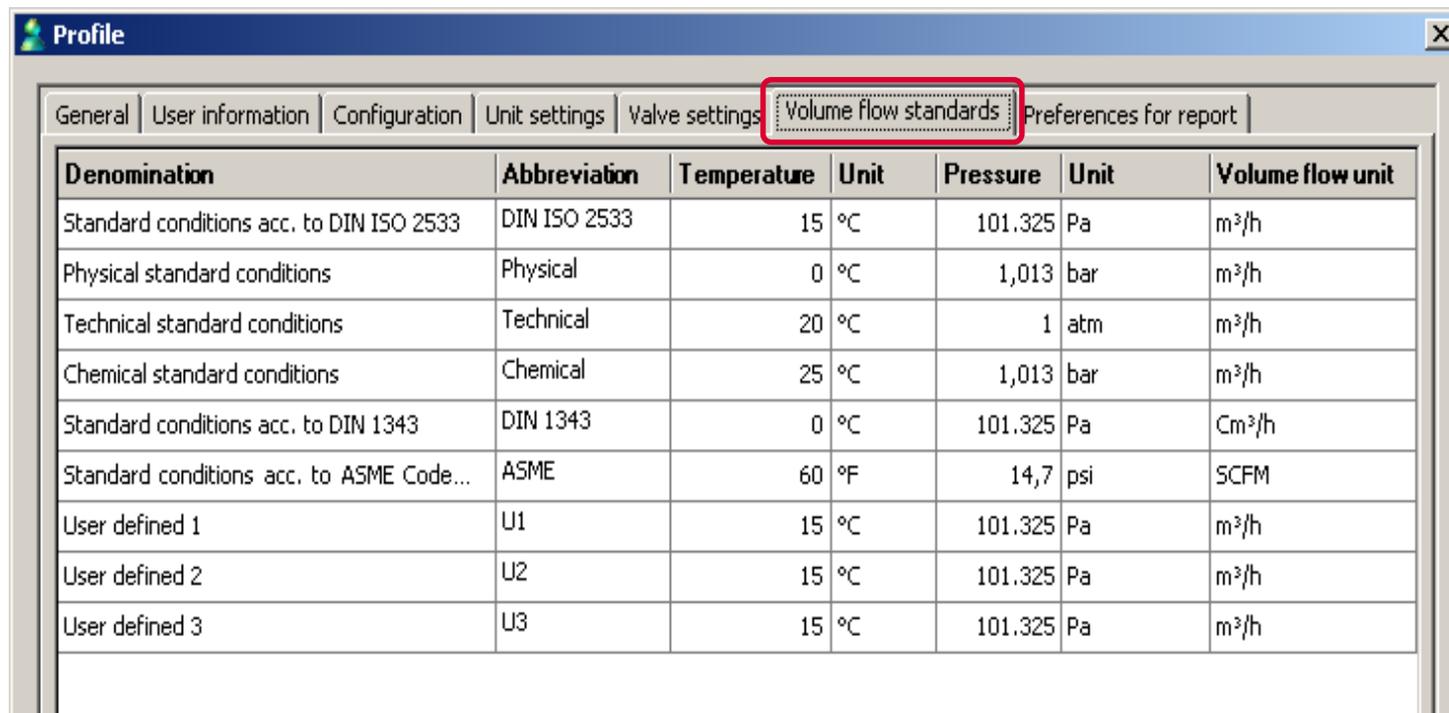
# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



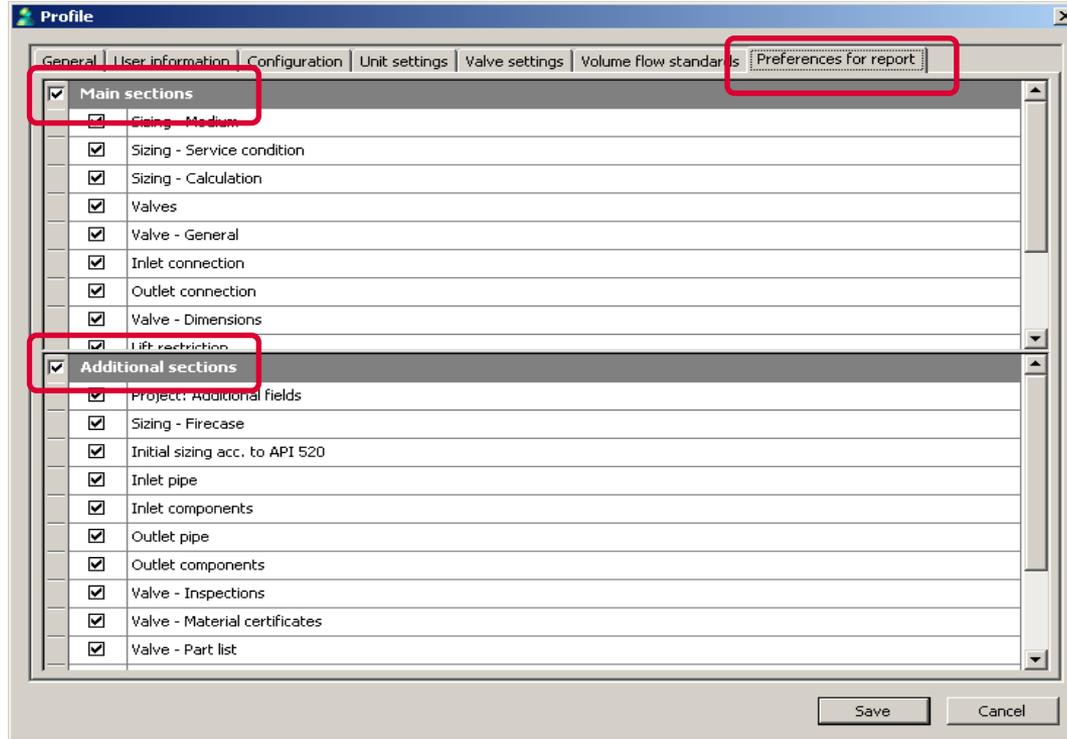
Denomination	Abbreviation	Temperature	Unit	Pressure	Unit	Volume flow unit
Standard conditions acc. to DIN ISO 2533	DIN ISO 2533	15 °C		101.325	Pa	m³/h
Physical standard conditions	Physical	0 °C		1,013	bar	m³/h
Technical standard conditions	Technical	20 °C		1	atm	m³/h
Chemical standard conditions	Chemical	25 °C		1,013	bar	m³/h
Standard conditions acc. to DIN 1343	DIN 1343	0 °C		101.325	Pa	Cm³/h
Standard conditions acc. to ASME Code...	ASME	60 °F		14,7	psi	SCFM
User defined 1	U1	15 °C		101.325	Pa	m³/h
User defined 2	U2	15 °C		101.325	Pa	m³/h
User defined 3	U3	15 °C		101.325	Pa	m³/h

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# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



# Settings. Profiles.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

The screenshot shows the 'Profile' dialog box with the 'Preferences for optioncode' tab selected. The dialog is divided into two main sections: 'Inspection' and 'Material certificates'. Both sections contain a table of items with checkboxes for selection. Red boxes highlight the 'Inspection' tab, the 'Inspection' table, and the 'Material certificates' table.

**Inspection**

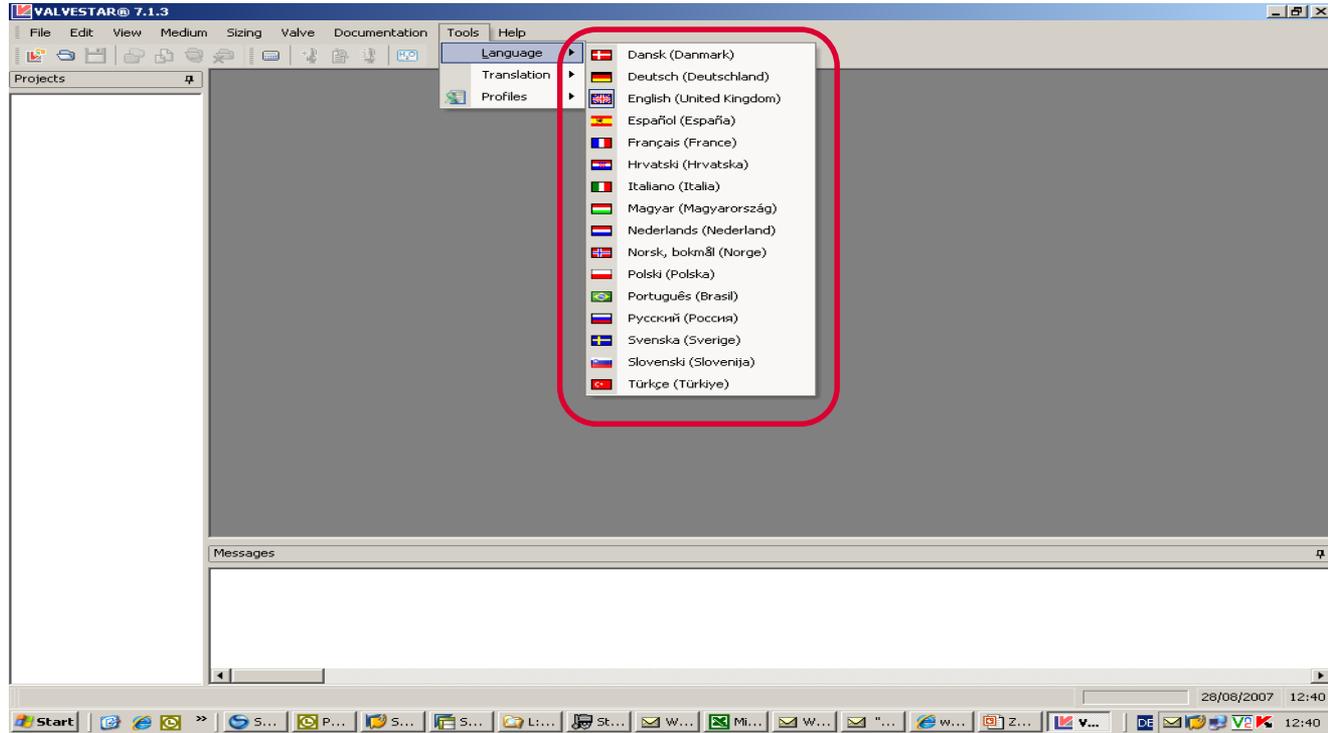
H03	LESER CGA: Inspection certificate 3.1 acc. to DIN EN 10204, Declaration of conformity acc. to PED...	<input type="checkbox"/>
M33	Certificate for test pressure acc. to DIN EN 10204-3.2	<input type="checkbox"/>
N04	test report special surface Ra value in µm	<input type="checkbox"/>

**Material certificates**

H01	Material test certificate for body acc. to DIN EN 10204-3.1	<input type="checkbox"/>
L23	Material test certificate for disc acc. to DIN EN 10204-3.1	<input type="checkbox"/>
L24	Inspection certificate stud/nut: EN 10204-3.1.B	<input type="checkbox"/>
L30	Material test certificate for bonnet acc. to DIN EN 10204-3.1	<input type="checkbox"/>
L31	Material test certificate for Cap / lever cover acc. to DIN EN 10204-3.1	<input type="checkbox"/>
L34	Inspection certificate outlet body: EN 10204-3.1.B	<input type="checkbox"/>
L59	Inspection certificate seat/nozzle: EN 10204-3.1.B	<input type="checkbox"/>
L60	Inspection certificate spring: EN 10204-3.1.B	<input type="checkbox"/>
N07	Material test certificate for studs acc. to DIN EN 10204-3.1	<input type="checkbox"/>
N08	Material test certificate for nuts acc. to DIN EN 10204-3.1	<input type="checkbox"/>

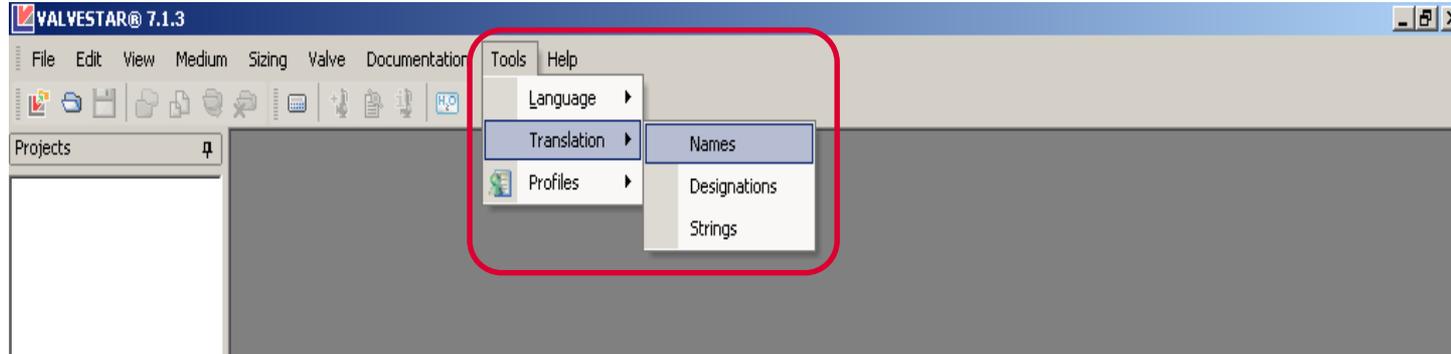
# Language.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. **Reporting and Settings** | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)



# Translation.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. **Translation** | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)

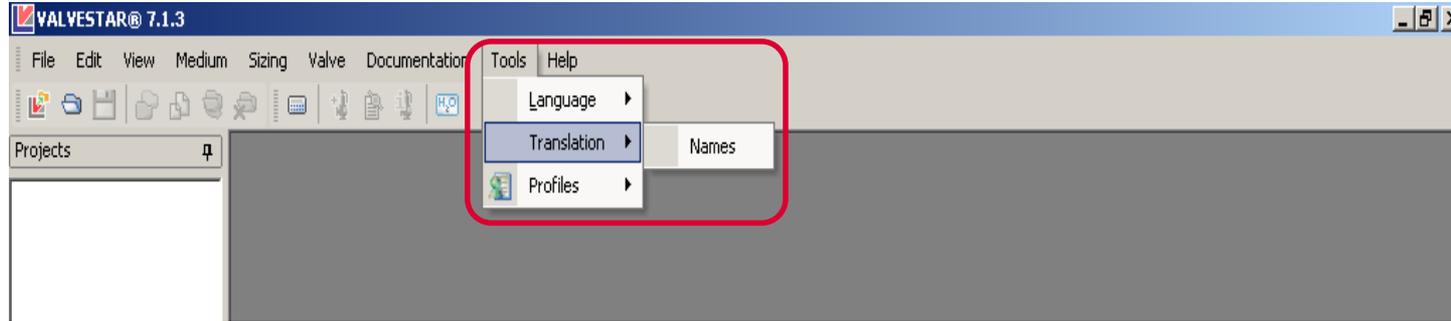


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# Translation.

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. **Translation** | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. [Internet](#) | 11. [Spares](#)



# How to change data.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

The screenshot shows the VALVESTAR 7.1.3 software interface. The main window displays a data table for project 'PSV 005 (ASME VIII Gas)'. The table is organized into sections: 'Medium', 'Service condition', and 'Nachrichten'. The 'Service condition' section is highlighted with a red box, showing the following data:

Tag No.	Parameter	Value	Unit
1100	Maximum allowable working pressure (MAWP)		psi-g
1101	Set pressure	15	psi-g
1102	Superimposed back pressure	0	psi-g
1103	Built up back pressure		psi

The 'Medium' section shows the following data:

Tag No.	Parameter	Value	Unit
1000	Designation	Butane (n)	
1004	Formula	C4 H10	
1001	Molar mass	58,1	kg/kmol
1002	Ratio of specific heats	1,090	
1003	Compressibility factor	1,000	

# How to change data.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

VALVESTAR@ 7.1.3 - [5262.5902]

File Edit View Medium Sizing Valve Documentation Tools Help

Projekte

- [\*] Project 2007
  - PSV 001 (ASME VIII Gas)
    - 5262.5902
  - PSV 002 (ASME VIII Gas)
    - 5262.5902
  - PSV 003 (ASME VIII Gas)
    - 5262.5902
  - PSV 004 (ASME VIII Gas)
    - 5262.5902
  - PSV 005 (ASME VIII Gas)
    - 5262.5902

General			
1500	Article number		5262.5902
1501	Certified coefficient of discharge for steam and gases	K,DG	0,801
1502	Certified coefficient of discharge for liquid	K,F	0,579
1453	Orifice		N
1505	Bonnet / Lifting device		Cap H2
1506	Body material		1.0619 / SA 216 WCB
1511	Bonnet		Closed Bonnet
Inlet connection			
1303	Connection standard		acc. to ASME B16.5
1304	DN / NPS		4"
1305	PN / PR		#150
1306	Flange facing		RF
Outlet connection			
1353	Connection standard		acc. to ASME B16.5
1354	DN / NPS		6"
1355	PN / PR		#150
1356	Flange facing		RF
Dimensions			
1400	Discharge area	Ao	5,303 in²
1401	Discharge diameter	do	2,598 inch
1402	Centre to Face dimensions	a	7,756 inch

Nachrichten

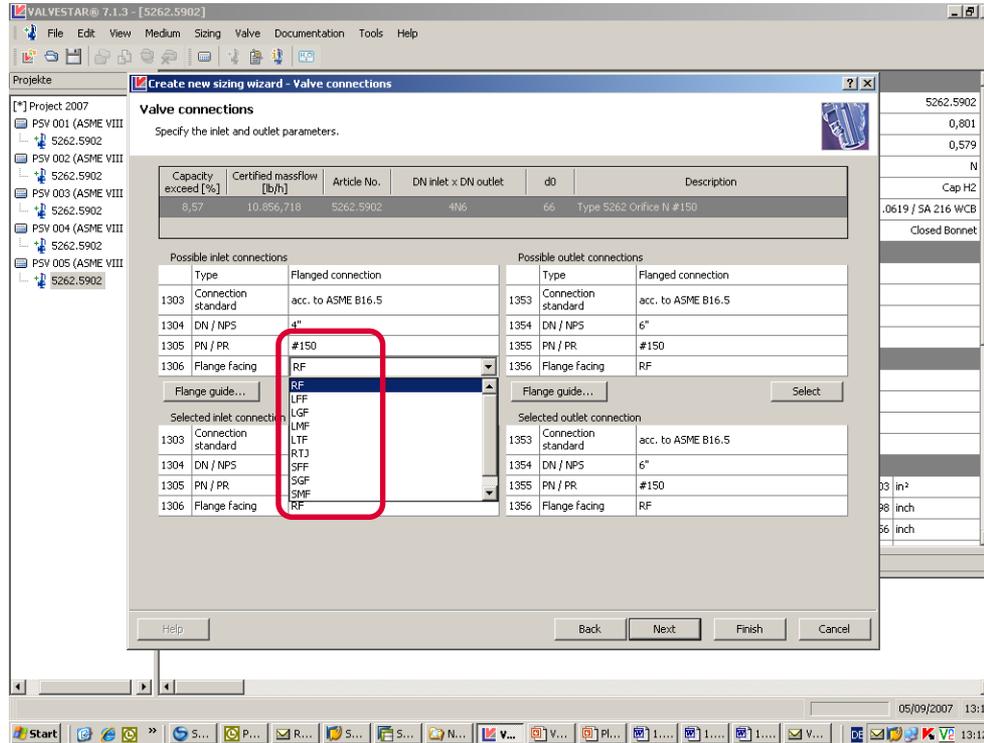
05/09/2007 13:06

Start S... P... R... S... N... V... Pl... 1... 1... 1... V... DE 13:06

Not possible to change

# How to change data.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares



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## How to manually input a reseller article no.

First: Do a standard sizing

The screenshot shows the VALVESTAR 7.1.4 software interface. The main window displays a table of project parameters. The table is organized into sections: General, Inlet connection, Outlet connection, and Dimensions. The 'General' section includes fields for Article number (4412.4832), Reseller article number, Quantity of safety valve (1), Certified coefficient of discharge for steam and gases (Kv,DG 0.699), Certified coefficient of discharge for liquid (Kv,F 0.521), Orifice (H), Bonnet / Lifting device (Cap H2), Body-/ Inlet base material (1.0619 / SA 216 WCB), and Bonnet (Closed Bonnet). The 'Inlet connection' section includes Connection standard (acc. to ASME B16.5), DN / NPS (1 1/2"), PN / PR (#300), and Flange facing (RF). The 'Outlet connection' section includes Connection standard (acc. to ASME B16.5), DN / NPS (2 1/2"), PN / PR (#150), and Flange facing (RF). The 'Dimensions' section includes Discharge area (Ao 1.667 in²). The interface also shows a Messages pane at the bottom and a status bar with the date 2008-05-04 and time 13:03:24.

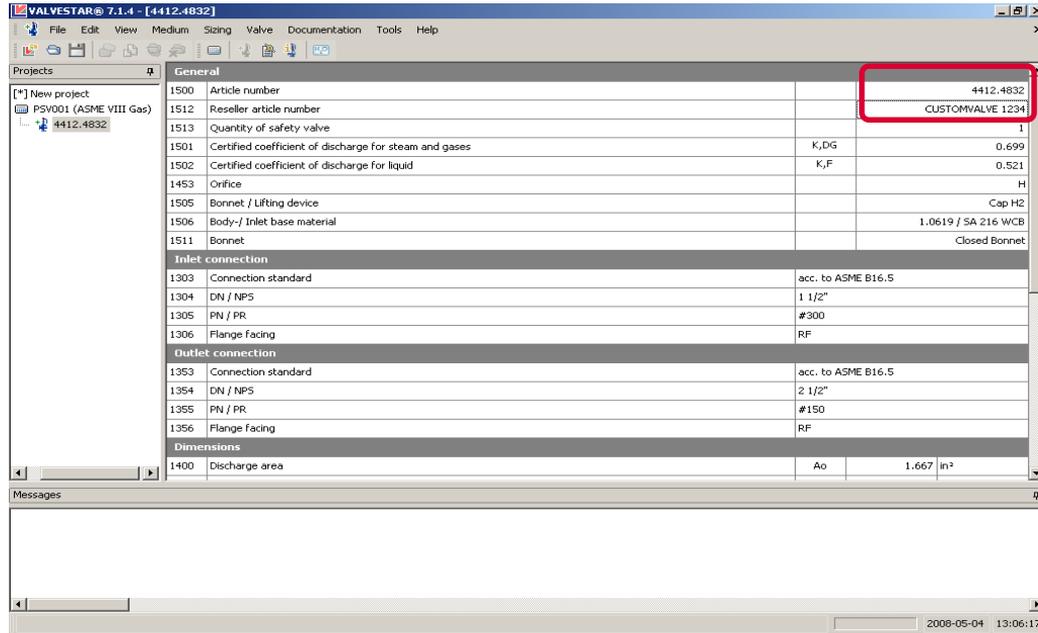
ID	Parameter	Value
1500	Article number	4412.4832
1512	Reseller article number	-
1513	Quantity of safety valve	1
1501	Certified coefficient of discharge for steam and gases	Kv,DG 0.699
1502	Certified coefficient of discharge for liquid	Kv,F 0.521
1453	Orifice	H
1505	Bonnet / Lifting device	Cap H2
1506	Body-/ Inlet base material	1.0619 / SA 216 WCB
1511	Bonnet	Closed Bonnet
<b>Inlet connection</b>		
1303	Connection standard	acc. to ASME B16.5
1304	DN / NPS	1 1/2"
1305	PN / PR	#300
1306	Flange facing	RF
<b>Outlet connection</b>		
1353	Connection standard	acc. to ASME B16.5
1354	DN / NPS	2 1/2"
1355	PN / PR	#150
1356	Flange facing	RF
<b>Dimensions</b>		
1400	Discharge area	Ao 1.667 in²

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## How to manually input a reseller article no.

Second: Add a reseller article no.



# Copy and Paste.

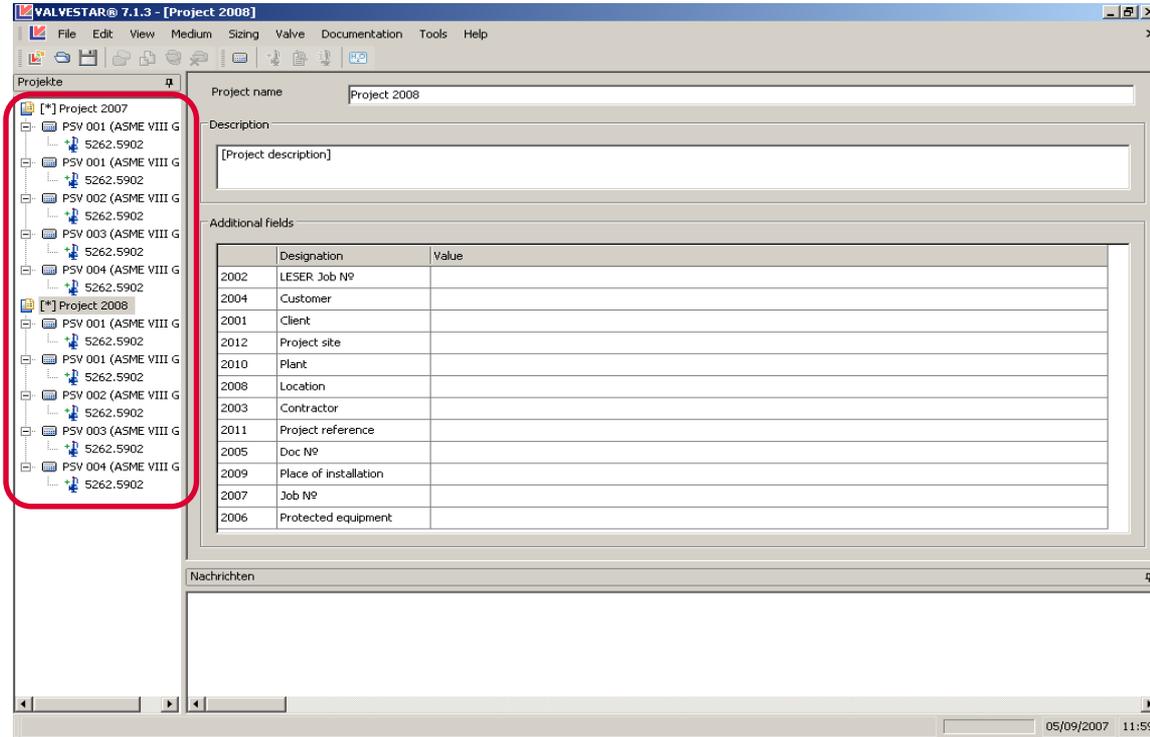
1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

The screenshot shows the VALVESTAR 7.1.3 software interface. The 'Edit' menu is open, and the 'Copy' option (Ctrl+C) is highlighted with a red rectangular box. The main window displays a table of properties for a medium, with a 'Medium' section highlighted. The table includes various parameters such as Designation, Formula, Molar mass, Ratio of specific heats, Compressibility Factor, and Service condition parameters like MAWP, Set pressure, and Temperature.

Medium			
1000	Designation		Butane (n)
1004	Formula		C4 H10
1001	Molar mass	M	58,1 kg/kmol
1002	Ratio of specific heats	k	1,090
1003	Compressibility Factor	Z	1,000
Service condition			
1100	Maximum allowable working pressure (MAWP)	MAWP	- psi-g
1101	Set pressure	p	15 psi-g
1102	Superimposed back-pressure	paf	0 psi-g
1103	Built up back pressure	paе	- psi
1104	Backpressure		0 psi-g
1105	Overpressure	dp	3,00 psi
1106	Environmental pressure	pu	14,696 psi
1107	Temperature	T	400 °F
1108	Required massflow	qm,ab	10,000 lb/h
1109	Volume flow to be discharged (working condition)	qv,ab	48,564,256 ft³/h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14,7 psi]	qvn,ab	1,088,13 SCFM
	Default volume flow standard		ASME

# Copy and Paste.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

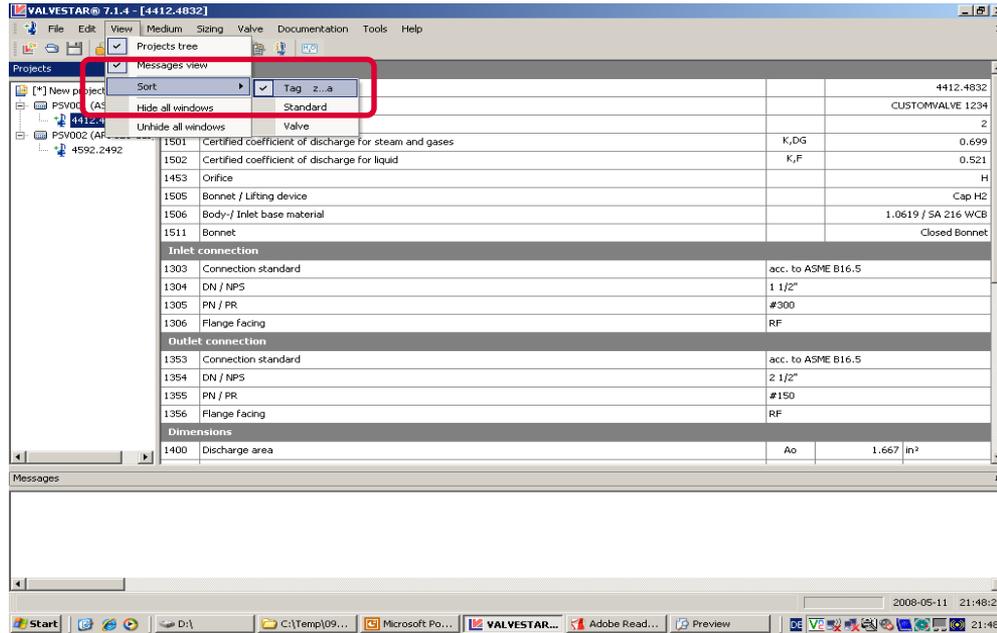


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## What are the features for better handling?

### Sort function in menu "View"

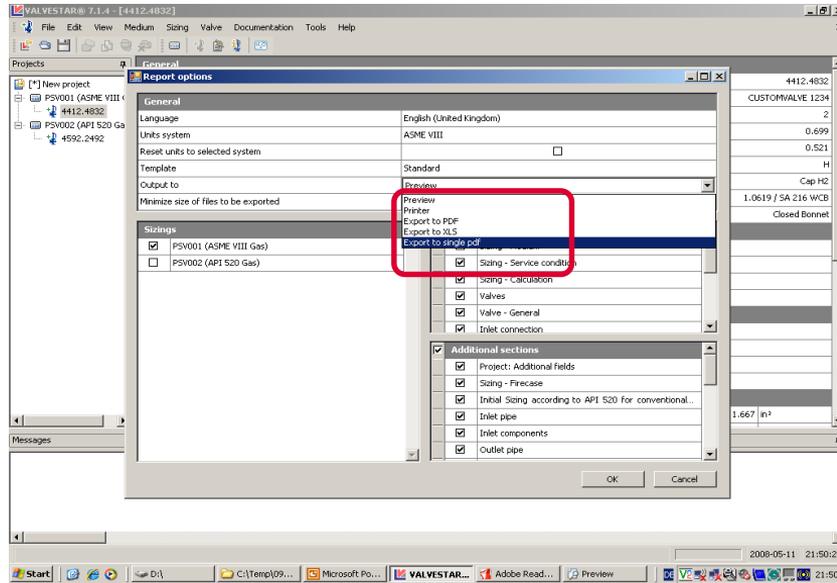


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## What are the features for better handling?

Printing in one pdf-file for all sizings of one project can be done with documentation  
“report full-version”



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## Where is the pdf-filed automatically?

Filed in the project storage”

The screenshot shows the Adobe Reader interface with a PDF document titled "New project.pdf". The document contains technical data for a valve, including a header with the LESER logo and project details, and three main data tables: Sizing - Medium, Sizing - Service condition, and Sizing - Calculation.

LESER		Sizing acc. to ASME VIII for Gas VALVESTAR® - v.7.1.4_06_07.0		Page:	1 of 6
The Safety-Valve.com		Date:	2008-05-04 13:00:55	Project:	New project
		Tag No.:	PSV001	LESER Job No:	

Sizing - Medium			
1000	Designation		Air
1004	Formula		
1001	Molar mass	M	29 kg/kmol
1002	Ratio of specific heats	k	1.400
1003	Compressibility factor	Z	1.000

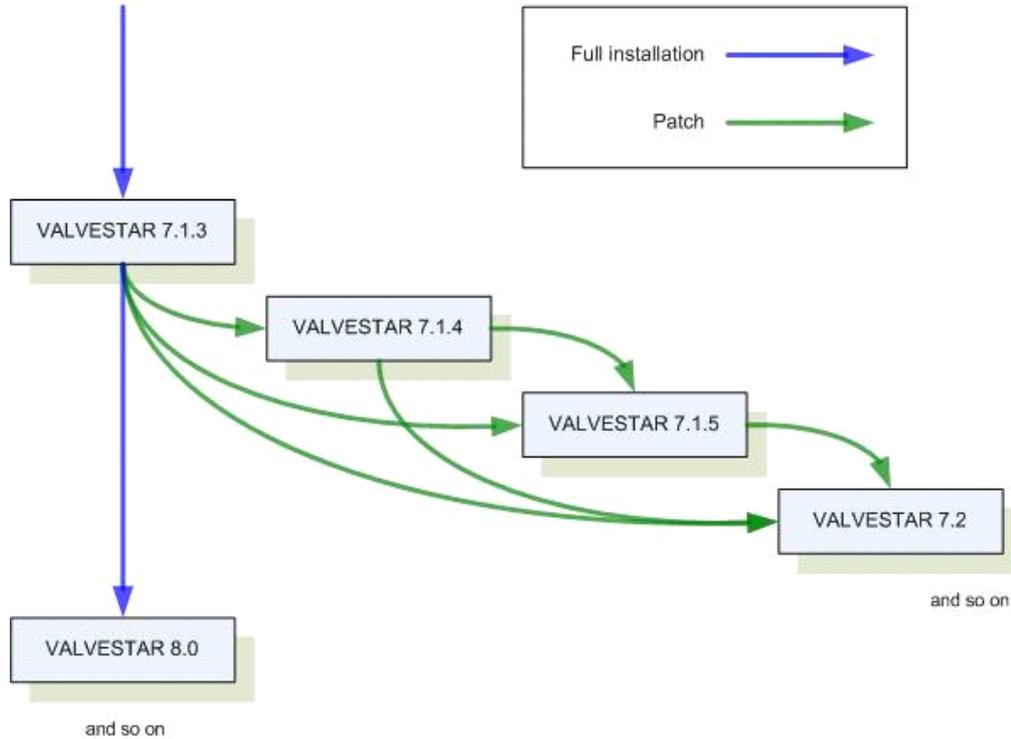
Sizing - Service condition			
1100	Maximum allowable working pressure		
1101	Set pressure	p	15 psi-g
1102	Superimposed back pressure	paf	0 psi-g
1103	Built up back pressure	pae	
1104	Backpressure		0 psi-g
1105	Overpressure	dp	3.000 psi
1106	Environmental pressure	pu	14.696 psi
1107	Temperature	T	68 °F
1108	Required massflow	qm,ab	2,500 lb/h
1109	Volume flow to be discharged (working condition)	qv,ab	14,930.196 ft³/h
1110	Volume flow to be discharged (std condition) [T=60 °F P=14.7 psi]	qvm,ab	545.003 SCFM
1120	Rupture disc correction factor	Kc	1.000

Sizing - Calculation			
1200	Certified massflow	qm,zu	3,030.786 lb/h
1201	Certified volumeflow (operating condition)	qv,zu	18,100.09 ft³/h

# Update via Internet.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares





# Update via Internet. Homepage – www.leser.com.

1. Introduction | 2. Sizing | 3. Fire | 4. Two Phase | 5. Add. Sizing | 6. Reporting and Settings | 7. Translation | 8. Data Change | 9. Copy and Paste | 10. Internet | 11. Spares

The screenshot shows the LESER website homepage. At the top, there is a navigation bar with the LESER logo and the tagline "The Safety-Valve.com". Below this, there are several menu categories: ABOUT LESER, PRODUCTS, SERVICES, TOOLS, NEWS, and CAREER. The SERVICES menu is expanded, showing options like Webservices, VALVESTAR®, CERTIFICATES, Acceptance Inspections, Seminars, ONTIME, Catalogue order, Optionfinder, Spare part finder, Order status, and Pressure change. A large banner image features a close-up of a valve with the text "IGHTNESS" and "Technology for reliable tightness 99%". Below the banner, there are sections for "WELCOME TO LESER" (Safety valves for all industrial applications), "CONTACTS IN YOUR COUNTRY" (LESER GMBH & CO. KG), "LESER PRODUCTS" (High Performance, API, Compact Performance, High Efficiency), and "NEWS".

# Update via Internet. [www.leser.com/en/services/valvestar](http://www.leser.com/en/services/valvestar).

1. [Introduction](#) | 2. [Sizing](#) | 3. [Fire](#) | 4. [Two Phase](#) | 5. [Add. Sizing](#) | 6. [Reporting and Settings](#) | 7. [Translation](#) | 8. [Data Change](#) | 9. [Copy and Paste](#) | 10. **Internet** | 11. [Spares](#)

The screenshot displays the LESER VALVESTAR website interface. At the top, there is a navigation menu with links for ABOUT LESER, PRODUCTS, SERVICES, TOOLS, NEWS, and CAREER. Below the menu, a breadcrumb trail indicates the current location: You are here: > LESER GmbH & Co. KG > Services > VALVESTAR®.

### VALVESTAR®

VALVESTAR® is the LESER-developed program for sizing of safety valves. It takes into account all leading global standards and codes. In addition to calculation and sizing, the program also offers variable, industry-arranged reports for technical documentation and archiving. VALVESTAR® is unique in nature, scope, and quality. More than 1200 users are already using either VALVESTAR® or VALVESTAR® Web.

If you have questions please contact:  
Andreas Cabianchi  
E-Mail: [valvestar@leser.com](mailto:valvestar@leser.com)

#### PROGRAM HIGHLIGHTS

##### SIZING

- Sizing of safety valves in accordance with the leading global standards and codes (i.e. API 520, ASME Sec. VIII Div. 1, ISO 4120-1/ -4, AD 2000-Merkblatt A2).
- Calculation two-phase flow in accordance with API 520 Appendix C and the case according to API 521
- Calculates inlet pressure loss, back pressure, reaction forces, and noise level.

##### DOCUMENTATION

- Various types of documents are selectable (i.e. Project Reports, single-page reports, and ISA data sheets)
- Customizable report layouts (customer logo, address, etc.)
- Exportable in different data formats (i.e. HLS, HTML, PDF, etc.)
- Integrated parts lists and sectional drawings of all LESER safety valves
- Spare parts lists - spreadsheet

##### DESIGN USER USE

- User friendly wizard function leads you step by step through the sizing process
- Microsoft .Net architecture offers the most modern graphical user interface for simple operation and better performance.

##### PRESETS

Customizable user interface:

- User-specific profile set-up with pre-selectable units of measure, calculation methods, and more...
- More than 15 selectable languages.

#### THE FOLLOWING OPTIONS ARE AVAILABLE TO YOU:

VALVESTAR® Web	web-based use of VALVESTAR® without need of administrative rights	to <a href="#">VALVESTAR® web</a>
Download VALVESTAR®	Download VALVESTAR® 7.3.0 as a program (approx. 200 MB)	
Update	Updates your version to VALVESTAR® 7.3.0 (i.e. 10 MB; requires 7.2.3)	

CONTACTS IN YOUR COUNTRY

LESER GmbH & Co. KG  
Eingetragene Gesellschaft  
Telefon: +49 62 2105 200  
[All contacts](#)

ENGINEERING  
The technical handbook

MAINTENANCE  
The maintenance handbook

VALVESTAR Web - Microsoft Internet Explorer bereitgestellt von LESER GmbH & Co KG

http://www.valvestar.com/UI/MainForm/Workspace/Authentication/Authentication.aspx

FILE Bearbeiten Ansicht Favoriten Extras ?

VALVESTAR Web

**LESER** The Safety-Valve.com

New user registration Language

### About LESER VALVESTAR @

VALVESTAR @, the sizing program for safety valves developed by LESER, supports all leading worldwide codes and standards.

In addition to calculations and sizing the program provides user designed and configurable individual reports for technical documentation and archiving.

VALVESTAR @ is unique in form, functionality and quality.

[www.leser.com](http://www.leser.com)

### Agreement

The VALVESTAR @ software is based on the existing Safety Valve construction standards currently enforced in the Federal Republic of Germany, USA and other countries.

Liability for damages suffered as a result of using VALVESTAR @ is restricted to intention. Any further liability is excluded.

Agree

### Authentication (Why Authentication?)

Please provide authentication information

Login:

Password:

LESER provides authenticated user free disk space at the VALVESTAR server

- to save projects
- to save personally settings

LESER guarantee safe data and do not give data to third party

The Software is for free use, no costs for the user and no user licence is necessary.

javascript:void(0);

Internet 100%

# Spare Parts.

## What is the new feature spare parts?

Two different listings of spare parts are available. Listing while single sizing in the “report full-version” and a spir list of complete project spare parts.

LESER is free to upgrade materials without further notice.

Part number	PosNo	Denomination	Startup	2 year oper.	5 year oper.
210.9939.0000	7	Disc 441 DN 40/ 37	1 per 5 valves	2 per 5 valves	1 per valve
241.1039.0000	12	Spindle 16x 307	0	0	1 per 5 valves
480.0705.0000	57	pin 4x24	15 per 5 valves	30 per 5 valves	15 per valve
500.1007.0000	60	Gasket V40	1 per valve	1 per valve	2 per valve
510.0205.0000	61	Ball D 9	1 per 5 valves	2 per 5 valves	1 per valve

Name AD 2000-Merkblatt A2  
Date 2008-05-04 13:00:55  
Rev. No. 1

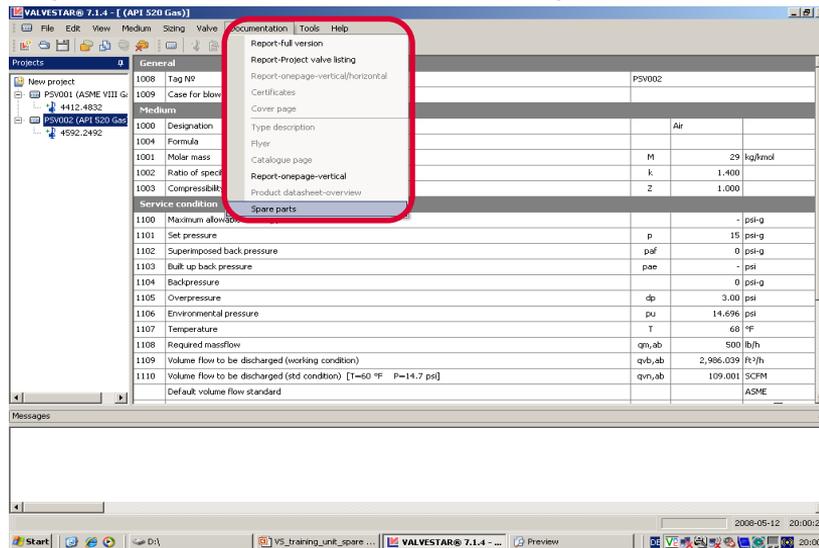
Current Page No: 3 Total Page No: 6 Zoom Factor: 122%

# Spare Parts.

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## What is a spir list and how I generate a spir list?

A spir list is a summerize of spare parts which are generated of a complete project. If equal parts are used in different sized valves this will affect the maximum quantity of parts which are shown in the spir list



# Spare Parts.

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## What is a spir list and how I generate a spir list?

Page: 1 of 2  
Date:   
Project: New project  
LESER Job N°

Tag No:	Article No	Count
PSV001 (ASME VIII Gas) PSV001	4412.4832	1
PSV002 (API 520 Gas) PSV002	4592.2492	1

Part number	Denomination	Used in types	Count		
			Startup	2 year oper.	5 year oper.
136.3649.9211	Inlet body 459 D017.5 V60		0	0	1
200.2239.9000	Disc 459 D0 17.5		0	0	1
210.9939.9000	Disc 441 DN 40/ 37		0	0	1
241.1039.0000	Spindle 16x 307		0	0	1
242.4539.0000	Spindle 12x 202		0	0	1
480.0505.0000	pin 3x20		3	6	1
480.0705.0000	pin 4x24		3	6	1
500.1007.0000	Gasket V40		1	1	1
500.2407.0000	Gasket T459		1	1	1
510.0105.0000	Ball D 6		0	0	1
510.0205.0000	Ball D 9		0	0	1

Current Page No: 1 Total Page No: 2 Zoom Factor: 122%

Page: 2 of 2  
Date:   
Project: New project  
LESER Job N°

Article No	4412.4832	Count			
Part number	PosNo	Denomination	Startup	2 year oper.	5 year oper.
210.9939.9000	7	Disc 441 DN 40/ 37	0	0	1
241.1039.0000	12	Spindle 16x 307	0	0	1
480.0705.0000	57	pin 4x24	3	6	1
500.1007.0000	60	Gasket V40	1	1	1
510.0205.0000	61	Ball D 9	0	0	1

Article No	4592.2492	Count			
Part number	PosNo	Denomination	Startup	2 year oper.	5 year oper.
136.3649.9211	1	Inlet body 459 D017.5 V60	0	0	1
200.2239.9000	7	Disc 459 D0 17.5	0	0	1
242.4539.0000	12	Spindle 12x 202	0	0	1
480.0505.0000	57	pin 3x20	3	6	1
500.2407.0000	60	Gasket T459	1	1	1
510.0105.0000	61	Ball D 6	0	0	1

Current Page No: 2 Total Page No: 2 Zoom Factor: 122%

# VALVESTAR<sup>®</sup> 7

Thank you for your attention.

