

VALVIO



Hints to use VALVIO Bedienungstipps für VALVIO

Built to Endure





Settings | Einstellungen

02

Calculations | Berechnungen

Documents | Dokumente

03

Help | Hilfe

04





Settings | Einstellungen

02

Calculations | Berechnungen

Documents | Dokumente

03

Help | Hilfe

04

Settings | Einstellungen



HEROSE VALVIO			
Sile Calculate View Windows Options	? New calculation	~ Find	~
🔁 🗈 🚔 🛛 🔜 😼 📖 Previous	HEROSE VALVIO	elect valve 🐁 Specifica	tion sheet Documentation 🔂 E-mail to Herose
Navigation	E-mail to Herose		-+ 3
Medium (*)	VALVIO homepage		New calculation
Calculation header	S License		
Medium selection and state	Update check	nd state	-+
Physical constants	© About]	Single phase 💌

File Calculate View Window	ws Options ? New calculation	V Find V
🖞 🗊 🚔 • 🔚 😼 🛌	Language	🕅 Select valve 🔛 Specification sheet 📄 Documentation 📄 E-mail to Herose
vigation	Program options	
	Edit export templates	ader 🕂 🗟
Medium	User-defined fields •	ACCORDING 1
Calculation header	×	
Program options		
 Program options Dialog box settings 	You can select the sche	
 Program options Dialog box settings PDF options 	You can select the sche	
 Program options Dialog box settings PDF options Defaults 	You can select the sche	mes here which are used as default for new calculations.
 Program options Dialog box settings PDF options Defaults Folders 	You can select the sche	- ×
 Program options Dialog box settings PDF options Defaults Folders File extensions 	You can select the sche	mes here which are used as default for new calculations.

EN (metric)

> Language

- Options
- Language
- Select your favorite language

> Updates

- > ?
- > Update check

Select your preferred rhythm for Updates

- > Unit of Measurement
 - > Options
 - > Program options
 - > Defaults

Select your standard default values and unit of measurement

- > Sprache
- Extras
- > Sprache
- Wählen Sie ihre Sprache aus

> Updates

- > ?
- > Updateprüfung

Wählen Sie Ihren gewünschten Update Rhythmus aus

- > Maßeinheiten
 - > Extras
 - > Programmoptionen
 - > Standardeinstellungen

Wählen Sie Ihre Standardwerte und -einheiten



Built to Endure © 2025 HEROSE

Default pipe class:

Templates Thermodynamics





Settings | Einstellungen

02

Calculations Berechnungen

Documents | Dokumente

03

Help | Hilfe

04



Parameter Overview | Parameter Übersicht

Parameters: Overview

A parameter input field normally has the following structure:



Figure: Structure of an input field

Each parameter has a long identifier and a short caption. The long caption provides an explanation of the parameter, while the short identifier is generally the name of a variable.

The input box shows the current value of a parameter. This value may be variable. In order to change the value, select the input box and enter another meaningful value in it. A selected input box has a colored background (usually pastel yellow).

To the left of the input box you may see icons with the following meanings:

+	Missing parameters generally result in an error.
	Errors indicate that the calculation cannot be performed completely and possibly not at all (e.g. if a parameter has been given a meaningless value or if it cannot be calculated).
8	Alarms indicate that the calculation result may not be satisfactory. E. g. this can mean a device should not be used this way because it may be damaged.
!	Warnings are output if it may not be possible to perform the calculation correctly (e.g. in the event of choked flow or deviations from a standard).
8	Hints are messages which are probably not relevant (e.g. approximate values). They generally indicate the cause of a minor inaccuracy.
~	Confirmations indicate that the parameters of a calculation are consistent, so that the device can be used standard-conform. Please note that confirmations are not available in all modules and all cases. They are intended for complex constellations to confirm the conclusiveness of the calculation.
	Calculated values are identified by a calculator icon. Click on this button if you want to represent the parameter on a graph as a function of an input parameter.
8	You can overwrite some calculated values with your own (measured) values. In this case, the calculator icon is struck through. Click on this button if you want to restore the value calculated by HEROSE VALVIO.
Ģ	Values that have been looked up are identified by a sheet of paper. Looked up means that the value determined by HEROSE VALVIO is not based on a calculation, but has been taken from a table (possibly an internal one).
X	You can overwrite some looked-up values with your own (measured) values. In this case, the paper icon is struck through. Click on this button if you want to restore the value determined by HEROSE VALVIO.
Û	If a note is attached to a parameter, this is indicated by a paper clip. Click on this button to open a dialog box in which you can edit the note.



Parameter Overview | Parameter Übersicht

To the right of an input box you may see a button (-) with which you can select a value. Click on this button if you want to use an interactive accessibility function. Das Dreieck an der rechten Seite eines Feldes bietet die Möglichkeit eine Auswahl zu treffen.





Parameter Overview | Parameter Übersicht

The final element of a value parameter is the unit. Click on this buttonbar(g)you want to change the measure unit.An der rechten Seite des Eingabefeldes befindet sich ein blau hinterlegter Button, der die Möglichkeit bietet die Einheit zu ändern.

Pressures			-+ 4
Set pressure	pSet	25,0	bar(g)
Overpressure	fpA		%
Relieving pressure	p0	25	bar(g)
Back pressure	pb	[%] bar(g)	^
Superimposed back pressure	pu	bar(a) mbar(a)	
Properties at relieving condition	ns	Pa(a)	
Temperature of fluid	t1	MPa(a)	
Vapor pressure	pv	at(a)	
Vapor temperature	tv	atm(a) kp/cm²(a)	
Real gas factor	z	N/m²(a)	
Density of fluid	6	N/mm*(a) Torr(a)	
Isentropic exponent	ж	mmHg(a)	
Oynamic viscosity	n	mmH2O(a)	
O Kinematic viscosity	v	ftH2O(a)	
		inHg(a) inH2O(a) Ibf/ft²(a) kgf/cm²(a)	~



Calculation process with mandatory fields Ablauf einer Berechnung mit Pflichtfeldern



- > Mandatory fields are marked red
- You can get additional Information regarding the Parameters under Help
- Overview is showing you the current calculation and error messages
- > To select a valve and set more filters, click "Select valve"
- > Pflichtfelder sind rot markiert
- > Die Hilfe zeigt Ihnen Informationen zu dem Feld
- Die Übersicht zeigt Ihnen die aktuelle Berechnung und Fehlermeldungen
- > Um weitere Filter zu setzten und ein Ventil auszuwählen, klicken Sie auf "Ventil auswählen"





- > The best fitting suggestion is grayed out and bolt font
- > With using the filters, you can limit the suggestions
- Der passendste Vorschlag ist fett gedruckt und grau hinterlegt
 Über die Filter können Sie weitere Einschränkungen vornehmen





- If the sizing is correct, the main comment within the overview is green
 - > Please note the hints on the bottom left corner
 - Wenn Ihre Berechnung korrekt ist, erscheint ein grüner Kommentar in dem Reiter Übersicht
 - > Bitte beachten Sie die Hinweise in der unteren linken Ecke



Article numbers | Artikelnummern



Help

Ok

Cancel

Apply



Additional non- mandatory fields | Weitere Berechnungsfelder

HEROSE VALVIO • File Calculate View Windows Options Nedpation Registration Regist	Non-mandatory fields Previous page Calculation header Identifier	Cocumentation C. Fmail to Herose S S S	- J X
HEROSE VALVIO * File Calculate View Windows Options To a state of the	Non-mandatory fields Find	Documentation 🕞 E-mail to Herose 🛛 😹 🚟	-
Needium Activation header Aredium Calculation header Medium selection and state Physical constants Design parameters Pressure Pressure relief valve	Calculation header Identifier Author Editor Customer Contact person Telephone Email Project Tag No Service Quotation No Order No	Non-mandatory fields Image: Constraint of the constraint of th	Constraints of the calculation and can be displayed in the calculation mask. You can edit the user-defined data in the calculation mask.

- > To see / change additional parameters, you can click on the plus (+).
- > Please note the Error Messages if the parameters are not fitting.
- > You can use the Help to get background information regarding a parameter.
- > Es öffnen sich für jeden Bereich Felder, die Sie nach belieben ausfüllen können.
- Beachten Sie die Fehlermeldungen bei widersprüchlichen Eingaben.
- Nutzen Sie die Hilfe, um die genaue Bedeutung eines Parameters erklärt zu bekommen.



Additional non- mandatory fields | Weitere Berechnungsfelder



- > You have the possibility to turn of or change the overpressure.
- > Sie haben die Möglichkeit die Funktion Drucksteigerung auszuschalten oder den Standardwert von 10% anzupassen.

Built to Endure © 2025 HEROSE

Calculations | Berechnungen

Special cases | Sonderfälle

Calculation header		-+ 🌢
Identifier	New calculation (1)	
Tag No		
Medium selection and state		-+ 6
Medium	+	
Gas	Gas, dry (Standard cor	nditions) 🔹
✓ Sizing according to fire case		
Operating temperature	tOp 🔸	°C

Vessel data		-+ 6	🚱 Help 🗏 Image 🔒 Overview 🚯 Fire 🗳 Graphs
Vessel shape	Cylindrical	•	
Orientation	Horizontal	•	• L;
Vessel head design	Flat	-	
Diameter	d +	m	đ
Cylinder length	Ls +	m	
Overall length	Lt 🛢	m	· · · · · · · · · · · · · · · · · · ·
Liquid level	f 🔸	m	
Elevation	н 🔸	m	Ľ Š
Wetted area	A 🛢 🛢	m²	

Vessel data			- + 4	😔 Help 📧 Image 🚯 Overview 🔞 Fire 🛍 Graphs			
/essel shape	Cylindrical		-	FIRE contingency view			
Drientation	Horizontal		•	Identifier		New calculati	ion (1)
lessel head design	Flat		-				
Nameter	d 🔸		m	Process data			
Cylinder length	Ls 🔶		m	Density of fluid	P	*	kg/m*
Overall length	Lt 😫		m	Molar mass	M	φ	kg/kmc
iurface area	A 🖬 🗖		m ²	Real gas factor	Z		-
Fire case			-+ -	Isentropic exponent Temperature of fluid	н t1	•	- *C
alculation method	Unwetted		-	Set pressure	pSet		bar(g)
Recommended maximum wal	temperature Tw +		°C	Sizing according to fire case		Yes	
Fire sizing factor	F 9	0,045		Mass flow rate	qm		kg/h
Mass flow rate	om 🔋		ko/h	Tank			

- > To calculate a safety valve in a fire case, activate the click box **Fire case**.
- > Für die Behälter Auslegung im Brandfall setzten Sie den Haken bei Brandfall.

- > With a click on Image, you will get a graphic description of the Vessel data that is required for a Fire case calculation.
- Mit einem Klick auf Bilder in der Symbolleiste erhalten Sie eine grafische Darstellung zu den geforderten Maßen des Behälters.
- With a click on Fire you will get an overview about all your data entered for this Fire case. You can <u>export</u> the data in Excel and PDF.
- Mit einem Klick auf Brandfall in der Symbolleiste erhalten Sie eine Übersicht über Ihre Daten zu diesem Brandfall. Sie können diese Daten in Excel und PDF exportieren.







> VALVIO will ask you for the Vessel data:

Shape: a) spherical or b) cylindrical

Orientation: c) horizontal or d) vertical

Head design: e) flat or f) ellipsoidal 2:1 or g) hemispherical

Lage: c) horizontal oder d) vertikal

Behälterboden: e) flach oder f) ellipsoid 2:1 oder g) halbkugelförmig

> VALVIO will ask you for the Vessel data:

Form: a) rund oder b) zylindrisch





Settings | Einstellungen

02

Calculations | Berechnungen

Documents | Dokumente

03

Help | Hilfe

04

Documentation | **Dokumentation**



Data export | Daten Export

> File

- > Export and send
- > Choose if you want to export and safe or send the file
- > Choose the format you want to export or send
- You can also use the short track and click on the Excel / PDF sign in the toolbar

> Datei

- > Exportieren und Senden
- > Wählen Sie, ob Sie die Datei exportieren oder versenden möchten
- Wählen Sie das Format (PDF oder Excel) indem Sie die Datei exportieren oder versenden möchten
- Alternativ können Sie auch auf das Excel / PDF Logo in der Toolbar klicken

HEROSE VALVIO - Calculation with mandatory fields.CSR	_	đ	×
Sile Calculate View Windows Options ? Calculation with mandatory fields 🗸 Find 🗸			
🖹 🗊 🚔 🔻 🔚 😹 🖏 🏂 🛌 🔤 Previous page 🔜 Next page 🙌 Select valve 📄 Documentation 🕞 E-mail to Herose 🛛 🌉 🔛 👟 🐱 💌 🖃 💌 📰			
Navigation			

Documentation | **Dokumentation**



Datenblätter | Data Sheets







Settings | Einstellungen

02

Calculations | Berechnungen

Documents | Dokumente

03

Help | Hilfe

04

Hilfe | Help

Calculator

- Calculator symbol
- Use Standard Calculator or Units converter

> Help

- > ?
- VALVIO manual
- Use the VALVIO manual to check the meaning of a parameter or a furmula behind a calculation
- The Search (Find) allows you to find a parameter withing the calculation

> Taschenrechner

- Taschenrechner Symbol
- Sie können einen normalen Taschenrechner oder einen Einheitenrechner nutzen

Hilfe

> ?

- VALVIO-Bedienung
- Die VALVIO-Bedienung gibt Ihnen Hilfe einen Parameter oder eine Formel zu verstehen
- Die Suche hilft Ihnen einen Parameter in der Berechnung zu finden und zu verändern



File Calculate View Windows Op!	tions ? Calculation with mandatoey fields	 Find
5 10 = • • = 0 = 10	HEROSE VALVIO	Specification sheet Documentation C F-mail to Herose
	VALVIO manual	
avigation	E-mail to Herose	- + o
Medium	S VALVIO homepage	Calculation with mandatoey fields
	S License	
Calculation header	Undate check od state	
Medium selection and state Physical constants	C About	Single phase 🔹
HEROSE VALVIO - Calculation with ma	indatoev fields CSR *	
Sile Calculate Man Mindows Or	ations 3 Calculation with mandatoev fields	God U
Prile calculate view windows Op	soons : calculation with mandatoley neids	Minimum analysis languages toning
🖄 💽 🥣 🕶 🔚 😼 🖛 🗔 Pr	revious page 🔜 Next page 🙌 Select valve 🦿	Specifi Minimum operating temperature - cmin
avigation	0	Molar mass - M
	Calculation header	
		Narrowest flow cross-section - A0
Medium	(a) Identifier	Narrowest flow cross-section - A0 Narrowest flow diameter - d0
Medium	Identifier Author	Narrowest flow cross-section - A0 Narrowest flow diameter - d0 Nominal diameter of inlet - DN1
Medium Calculation header	Identifier Author	Narrowest flow cross-section - A0 Narrowest flow diameter - d0 Nominal diameter of inlet - DN1 Nominal diameter of outlet - DN2
Medium Calculation header Medium selection and state	Identifier Author Editor	Narrowest flow cross-section - A0 Narrowest flow diameter - d0 Nominal diameter of inlet - DN1 Nominal diameter of outlet - DN2 Opening characteristics
Medium Calculation header Medium selection and state	 Identifier Author Editor Tag No. 	Narrowest flow cross-section - A0 Narrowest flow diameter - d0 Nominal diameter of routet - DN1 Nominal diameter of cutlet - DN2 Opening characteristics Opening pressure - pOp
Medium Calculation header Medium selection and state Physical constants	Identifier Author Editor Tag No. Author	Narrovest flow cross-section - A0 Narrovest flow diameter - d0 Nominal diameter of inlet - DN1 Nominal diameter of outlet - DN2 Openating pressure - p0- Openating pressure - p0- Openating temperature - Op
Medium Calculation header Medium selection and state Physical constants Design parameters	Identifier Author Editor Tag No. Medium selection and state	Narowest flow coss-section - A0 Narowest flow clameter - d0 Nominal clameter of net - DN1 Nominal clameter of net - DN2 Opening characteristics Openating tensore - p0p Openating tensore - p0p Openating tensore - p0p
Medium Calculation header Medium selection and state Physical constants Design parameters Pressures	Identifier Author Editor Tag No. Medium selection and state Phase	Narrowest flow conservation - A0 Narrowest flow clameter - d0 Norminal diameter of outlet - DN2 Opening characteristics Openating pressure - p0p Operating temperature - t0p Overpressure - fpA Phase
Medium Calculation header Medium selection and state Physical constants Design parameters Pressures Pressures	Identifier Author Editor Tog No. Medium selection and state Phase Medium	Narrowet flow consestion - A0 Narrowet flow dameter - 00 Nominal diameter of niet - DN1 Nominal diameter of niet - DN2 Opening characteristics Operating perseare = 00 Operating perseare = 00 Operating temperature = 10p Overpressue = 10A Phase Physical constants
Medium Calculation header Medium selection and state Physical constants Design parameters Pressures Properties at relieving conditions	Identifier Author Editor Editor Tag No. Medium selection and state Phase Medium Ketim	Nanrowest flow conservation - A0 Nanrowest flow clameter - 00 Normial alameter of ouler - DN1 Normial alameter of ouler - DN2 Opening characteristics Opening sentence #p00 Opening temperature - P00 Opening temperature - P00 Op
Medium Calculation header Medium selection and state Physical constants Design parameters Pressures Properties at relieving conditions Required flow capacity	Identifier Author Editor Tag No. Medium selection and state Phase Medium State	Narrowest flow conservation - A0 Narrowest flow dameter - 00 Norminal diameter of Iniet - DN1 Operating diameter of Iniet - DN2 Operating pressure - (50 Operating pressure - 10 Operating pressure - 10 Operating temperature - 10 Operating temperature - 10 Operating constants Physics flow - Fr Perssure (cas - PN
Medium Calculation header Medium selection and state Physical constants Design parameters Pressures Properties at relieving conditions Required flow capacity	Identifier Author Editor Tag No. Medium Selection and state Phase Medium State Gal	Nanrowest flow conservation - A0 Nanrowest flow diameter - 00 Normial aliameter of outer - DN1 Normial aliameter of outer - DN2 Opening characteristics Operating terelevet + (00 Operating terelevet +

Questions

> Fragen

- > Any questions? Send us an Email!
- > Noch Fragen? Senden Sie uns eine E-Mail



If you have any questions about VALVIO, please feel free to contact us. Kontaktieren Sie uns gerne, wenn Sie Fragen zu VALVIO haben.

@valvio-support@herose.com

Built to Endure