

Groth Online Sizing System User Guide

GROTH
CORPORATION
a Continental Disc company

SIZING PROGRAM

SMART RELIEF...SAFE SOLUTIONSSM

Email
user@mysite.com

Password
••••••

Login Register

[Forgot Password?](#)

GROTH
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a Continental Disc company

SIZING PROGRAM

Works best utilizing Mozilla Firefox

SMART RELIEF...SAFE SOLUTIONSSM

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Initial registration access request:

Access to the online sizing program is restricted and users must register and be approved before the sizing program can be used.

To register on for site access navigate to the following site URL and click the 'Register' button. Fill in the requested information and click the 'Submit' button.

Site URL: <http://166.78.101.111>

PLEASE ENTER YOUR INFORMATION TO MAKE A REQUEST FOR AN ACCOUNT.

Company Name:

First Name:

Last Name:

Email:

Phone Number:

Address:

Address 2:

Address 3:

City:

State:

Zip Code:

Country Code:

1. Once the information has been submitted you will receive the following notification:

“Your request for access to the site has been received and is not under review. If your request is approved you should receive notification within 1-2 days”

2. After the account is approved you will receive another email with a temporary password and instructions and you may begin using the sizing program.

Note: if you ever forget your password just click the 'Forgot Password?' link on the login page and a new temporary password will be emailed to you.

Logging In:

On the main site page enter your registered email address and password and click the Login Button.



The image shows the login page for the Groth Corporation Sizing Program. On the left, there is a logo for Groth Corporation, a Continental Disc company, with the text "SMART RELIEF...SAFE SOLUTIONS SM". The main heading is "SIZING PROGRAM". On the right, there is a login form with fields for "Email" (containing "user@mysite.com") and "Password" (containing "••••"). Below the fields are buttons for "Login" (highlighted with a red box), "Register", and "Forgot Password?". Red arrows point from the "Forgot Password?" link to the "Password" field.

Main Form:

The main form has three menu items and will default to managing projects when you first log in. The menu items are:

1. Edit Profile – Allows you to modify your profile information.
2. Manage Projects – Create and edit sizing projects for valves and tanks.
3. Manage Users – Admin only. Authorize users and set security level.

Note: if you do not have access to one or more of these options you will get the following message when you try to select the option:

ACCESS NOT GRANTED

YOU HAVE
ATTEMPTED TO
ACCESS A PAGE THAT
YOU DO NOT HAVE
PERMISSION TO
VIEW.

IF YOU FEEL YOU
GOT THE MESSAGE
IN ERROR, PLEASE
VERIFY YOU ARE
LOGGED INTO AN
ACCOUNT WITH
ACCESS AND TRY
AGAIN.

Edit Profile:

Edit profile allows you to update your personal information or change your password.

Edit Profile
Manage Projects
Manage Users

MY PROFILE

First Name:	<input type="text" value="Fred"/>
Last Name:	<input type="text" value="Fredburger"/>
Email:	<input type="text" value="ffredburger@excite.com"/>
Phone:	<input type="text" value="816-213-5516"/>
Address:	<input type="text" value="3160 W Heartland Dr."/>
Address 2:	<input type="text"/>
Address 3:	<input type="text"/>
City:	<input type="text" value="Liberty"/>
State:	<input type="text" value="Mo"/>
Zip Code:	<input type="text" value="64068"/>
Country:	<input type="text" value="USA"/>

1. To change your pass work click on the 'Change Password' button. Enter the new password and confirmation and click the 'Update' button.

- To update your personal information, make any modifications that you would like and click the 'Submit' button.
- To cancel out of making changes click on the 'Back' button.

Manage Projects:

Manage projects allows you to create new projects. Each project can have multiple valve and tank sizings.

- To create a new project click the 'New Project' button, enter the project information and click the 'Create' button.

My Projects

Customer:

Project Name:

Description:

Client Project Id:

- Once the project has been created it will show on your queue.

<input type="button" value="View Details"/>	Project Name	Customer	Description	Date Created
<input type="button" value="View Details"/>	Project #1	MyCustomer	Large Tank Project	01/26/2016

- To add valve or tank sizings to the projects click on the 'View Details' Button.

Project Details:

Project details is the form where all of the work is done. Valve and tank sizings can created, updated, archived and printed.

Customer:

Customer Project Id:

Project Name:

Created By:

Date Created:

Last Modified By:

Last Modified Date:

Description:

Archived: Yes No

1. Create Valve Sizing. – Create a valve sizing calculation for pressure, vacuum or both flow requirements.

SIZING INPUT TYPE	Both		← Select Pressure, Vacuum or Both
Required Flow Needed			
BASIC SIZING INFO	Relief Valve		← Select a valve size or pick 'Smallest' to have it automatically selected
Type:			
Preferred Size:	Smallest		
Name:	Valve Sizing#1		← Enter name and other identifiers that will be on the printed copy for your reference.
Tank:	TNK-1000		
Tag Number:	T1001		
Atmospheric Pressure:	1	atm abs.	← Atmospheric Pressure is required.
Maximum Process Pressure (Optional):	0	psig	
Description:	Valve sizing #1 for Large Tank Project.		

2. Create Tank Sizing – Create a tank sizing calculation for normal venting, fire relief or both vent requirements.

TANK VENTING INFO	Tank Sizing#1	
Name:		
Tank:	TNK-1000	
Tag Number:	T1001	
Description:	Tank Sizing #1 for Large tank project.	

VENTING CALCULATIONS:	PRESET UNIT OF MEASURE:
Select One	Preset USC (U.S. Customary) UOM
Select One	Preset SI (Metric) UOM
Normal Venting	Reset
Fire Relief	
Both	

Valve Sizing:

The valve sizing input form is where all of the required inputs for the valve sizing calculation are entered.

Notes:

- Timeout – The system will timeout after 15 minutes if it doesn't detect any input. The sizing is not saved until you click the 'Create Sizing' button, so if you get interrupted the form will clear and reset forcing you to start over.
1. **Media Type** – Select a process media or enter a user specified media.

MEDIA TYPE INFO	
Process Media:	<input type="text" value="Air"/>
Sizing Fluid Name:	<input type="text" value="Air"/>
Molecular Weight of Vapor(MW):	<input type="text" value="28.964"/>
Compressibility Factor of Vapor(Z):	<input type="text" value="1"/>
Specific Heat Ratio of Vapor(K):	<input type="text" value="1.4"/>

2. **Pressure Information** – Enter the flow rate information for the positive direction flow.

- a. All inputs are required. Make sure that every value has an appropriate unit of measure.

SIZING PRESSURE INFO		
Pressure Relief Required Flow Rate:	<input type="text" value="188000"/>	<input type="text" value="SCFH"/>
Temperature of Relieving Vapor:	<input type="text" value="130"/>	<input type="text" value="Deg F"/>
Pressure Setting:	<input type="text" value="3"/>	<input type="text" value="osig"/>
Flowing Pressure:	<input type="text" value="6"/>	<input type="text" value="osig"/>
Back Pressure (Optional):	<input type="text" value="0"/>	<input type="text" value="mbarg"/>

3. **Vacuum Information** - Enter the flow rate information for the vacuum direction flow.

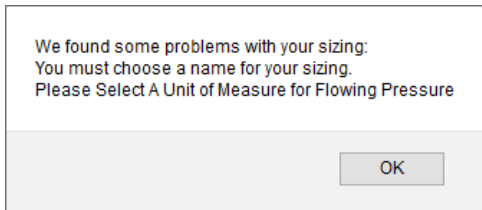
- a. All inputs are required. Make sure that every value has an appropriate unit of measure.

SIZING VACUUM INFO		
Vacuum Relief Required Flow:	<input type="text" value="73200"/>	<input type="text" value="SCFH"/>
Atmospheric Temperature:	<input type="text" value="72"/>	<input type="text" value="Deg F"/>
Vacuum Setting:	<input type="text" value="4"/>	<input type="text" value="in. water"/>
Vacuum Flowing Pressure:	<input type="text" value="8"/>	<input type="text" value="in. water"/>

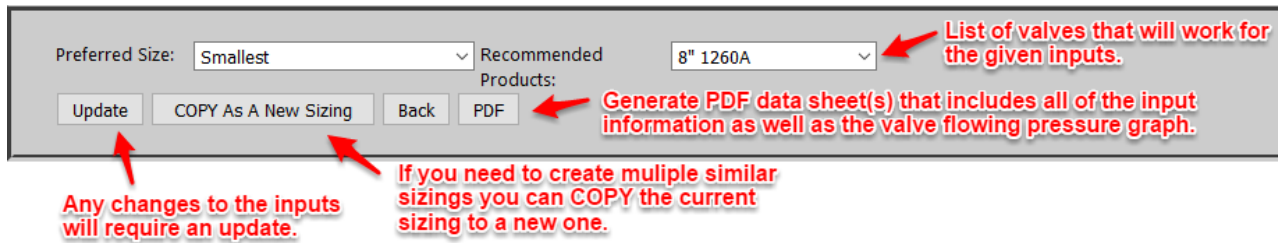
4. **Create Sizing** – Once all inputs and units of measure have been selected click on the 'Create Sizing' button.

<input type="button" value="Create Sizing"/> <input type="button" value="Cancel"/>
--

- a. Validation will be done to ensure that all inputs have been entered and that a calculation can be performed but the validity of the actual data is the responsibility of the user.
- b. If any inputs are missing you will receive a pop-up message indicating the missing requirements as follows:

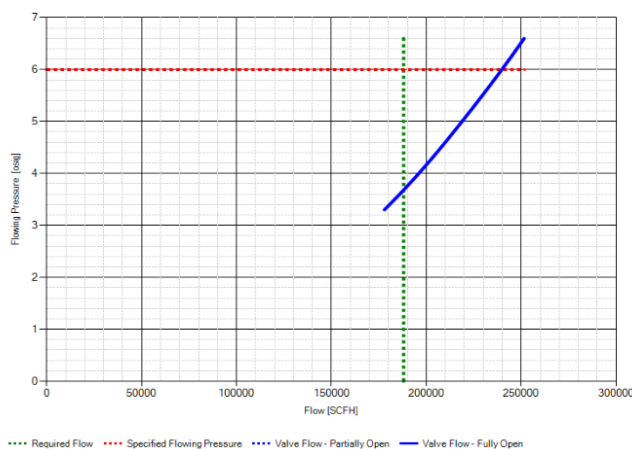


5. **Update, Print PDF or Copy** - Once the sizing has been created the form will update and display the available valves for your specified inputs.



- If you selected 'Smallest' for your preferred size then the valve list will have multiple sizes available. If you specified a size then only valves for that size will be listed.
- Select the valve that you want a data sheet for and then click the 'PDF' button. A new window will open with the PDF data sheet(s) that you may review, print and save.

Groth Valve Sizing Data Sheet – Positive Direction			
Name:	Valve Sizing#1	Date:	1/28/2016 10:21:42 AM
Customer:	MyCustomer		
Project Name:	Project #1	Tank:	TNK-1000
Project ID:	LTP-1001	Tag#:	T1001
Valve Size and Model:	10" 1830A		
General Parameters		Fluid Properties	
Atmospheric Pressure:	1 atm abs.	Process Media:	Air
Max. Process Pressure:	0 psig	Molecular Weight of Vapor(MW):	28.984
		Specific Heat Ratio of Vapor(K):	1.4
		Compressibility Factor of Vapor(Z):	1
Pressure Relief Parameters		Results Based on Valve Selected	
Pressure Relief Req'd Flow Rate:	188000 SCFH	Flowing Pressure relative to Set Pressure:	100% OverPressure
Temperature of Relieving Vapor:	130 Deg F	Approx. Flow Rate at Specified Flowing Pressure:	240000 SCFH @ 6 csig
Pressure Setting:	3 csig	Approx. Flowing Pressure at Required Flow Rate:	3.88 csig @ 188000 SCFH
Flowing Pressure:	6 csig	Min. Req'd Overpressure for Measureable Flow:	10%
Back Pressure:	0 psig		



..... Required Flow - - - - Specified Flowing Pressure - - - - Valve Flow - Partially Open - - - - Valve Flow - Fully Open

The flow results and graph above are based on flow tests and equations outlined in API Std 2000 / ISO 28300. Groth Corporation disclaims all warranties concerning this sizing program, including implied warranties of merchantability and fitness for a particular purpose. Groth Corporation does not warrant that the sizing formulas used in this program will meet your requirements or that the operation of this program will be error free. While every effort has been made by Groth Corporation to make this program useful and error free, Groth Corporation disclaims liability for any and all losses or damages, including consequential damages, arising from the use of this program. The output values were determined by solving the equation based on the input values. It is the customer's responsibility to confirm that the input values are representative of their existing condition, that this evaluation is valid for their application, and that the product specifications indicated (output) are suitable for the intended use.

Tank Sizing:

The tank sizing input form is where all of the required inputs for the tank sizing calculation are entered.

Notes:

- In order to effectively use the tank sizing calculation you should be familiar with the following:
ISO-28300-2008, API-2000 6th Edition, API-2000 7th Edition
 - Timeout – The system will timeout after 15 minutes if it doesn't detect any input. The sizing is not saved until you click the 'Create Sizing' button, so if you get interrupted the form will clear and reset forcing you to start over.
- Preset Unit of Measure** – To save time you can select a preset unit of measure for all inputs. The available options are: U.S. Customary or SI (Metric) units.

PRESET UNIT OF MEASURE:

Preset USC (U.S. Customary) UOM

Preset SI (Metric) UOM

Reset

Reset will clear all units of measure

- Pump Parameters** – Enter the pump parameter information for your tank.
 - All inputs are required. Make sure that every value has an appropriate unit of measure.

PUMP PARAMETERS		
Pump In Rate	100	U.S. gal/min
Flash Rate (air equivalent):	24	SCFH
Evaporation Rate (air equivalent):	16	SCFH
Other Out-Breathing Flows (air equivalent):	5	SCFH
Pump Out Rate	123	U.S. gal/min
Other In-Breathing Flows (air):	3	SCFH

- Tank Environment** - Input the appropriate environmental information for your tank.
 - Click on the [Zones](#) link for graphic help with selecting a latitude zone.

TANK ENVIRONMENT		
Latitude Zone:	< 42°	Zones
Average Storage Temperature:	>= 25°C (77°F)	
Vapor Pressure Group:	Higher than Hexane or unknown	

4. **Tank Geometry** - Select the shape of your tank and then input the appropriate information.

TANK GEOMETRY			
Tank Type (Shape):	Horizontal Cylinder		
Tank Diameter:	15	ft	
Tank Length:	50	ft	
Bottom of Tank Above Ground:	7	ft	

5. **Tank Insulation** - Select the insulated surface profile than meets your requirements and then enter the appropriate input information.

TANK INSULATION						
Insulated Surfaces:	Particular Surfaces					
	Insulation Thickness		Heat Transfer Coefficient		Insulation Thermal Conductivity	
Shell:	1	in	4	Btu/(h·ft ² ·°F)	1	Btu/(h·ft·°F)
Ends:	50	mm	4	Btu/(h·ft ² ·°F)	1	Btu/(h·ft·°F)

Select insulated surfaces (particular, all exposed, % of all exposed or none.)

Surfaces will vary depending on tank geometry.

6. **Create Tank Sizing** – Select resultant venting requirements unit of measure.

- a. Select the units of measure for the resultant calculations and click the ‘Create Sizing’ button.

Resultant Venting Requirements Unit of Measure:	SCFH
Create Sizing	Cancel

7. **Update, Print PDF or Copy** - Once the sizing has been created the form will update and display the venting requirement for the input data.

Resultant Venting Requirements Unit of Measure:	SCFH		
TOTAL OUT-BREATHING: 2100 SCFH OF AIR			
TOTAL IN-BREATHING: 9460 SCFH OF AIR			
Update	COPY As A New Sizing	Back	PDF

Generate PDF data sheet(s) that include all of the input information as well as the resultant venting requirements.

Any changes to the inputs will require an update.

If you need to create multiple similar sizings you can COPY the current sizing to a new one.

- a. Select the valve that you want a data sheet for and then click the 'PDF' button. A new window will open with the PDF data sheet(s) that you may review, print and save.

Groth Tank Venting Data Sheet			
Name:	Tank Sizing#1	Date:	01/26/2016 : 11:11:53
Customer:	MyCustomer		
Project Name:	Project #1	Tank:	TNK-1000
Project ID:	LTP-1001	Tag#:	T1001
Pump Parameters		Tank Environment	
Pump In Rate: 100 U.S. gal/min		Latitude Zone: < 42°	
Flash Rate (air equivalent): 24 SCFH		Average Storage Temperature: >= 25°C (77°F)	
Evaporation Rate (air equivalent): 16 SCFH		Vapor Pressure Group: Higher than Hexane or unknown	
Other Out-Breathing Flows (air equivalent): 5 SCFH			
Pump Out Rate: 123 U.S. gal/min			
Other In-Breathing Flows (air equivalent): 3 SCFH			
Tank Geometry		Fire Condition Parameters	
Tank Type (Shape): Horizontal Cylinder			
Tank Diameter: 15 ft			
Tank Length: 50 ft			
Bottom of Tank Above Ground: 7 ft			
Insulated Surfaces:	Particular Surfaces		
	Insulation Thickness	Heat Transfer Coefficient	Insulation Thermal Conductivity
Shell:	1 in	4 Btu/(h-ft ² -°F)	1 Btu/(h-ft ² -°F)
Ends:	50 mm	4 Btu/(h-ft ² -°F)	1 Btu/(h-ft ² -°F)
Resultant Tank Venting Requirements - Code (Normal Venting): ISO-28300-2008			
Total Out-Breathing: 2100 SCFH of Air			
Total In-Breathing: 9460 SCFH of Air			

The venting requirements shown above are for non-refrigerated, aboveground storage tanks and are based on the equations in ISO-28300:2008 / API-2000 6th Edition section 4, API-2000 7th Edition section 3, and NFPA 30 - 2014 Edition section 22.7.3. The results of these equations may differ slightly from the pre-calculated values shown in the tables of the respective standards. Groth Corporation disclaims all warranties concerning this tank venting program, including implied warranties of merchantability and fitness for a particular purpose. Groth Corporation does not warrant that the tank venting formulas used in this program will meet your requirements or that the operation of this program will be error free. While every effort has been made by Groth Corporation to make this program useful and error free, Groth Corporation disclaims liability for any and all losses or damages, including consequential damages, arising from the use of this program. The output values were determined by solving the equations from the respective standards based on the input values. It is the customer's responsibility to confirm that the input values are representative of their relieving condition, that this evaluation is valid for their application, and that the results (output) are suitable for the intended use.

Requesting Help:

1. If you are unsure of what to enter for the inputs on a valve or tank sizing or have other questions about how the sizing calculations are performed use the 'Request Help' link at the top of the main form (by your login information).

[Request Help](#)

- a. Your help request should be specific and include the following:

Project Name

Project ID

Sizing ID

Sizing Name

View Details	Type	Id	Name	Project Id	Tank	Tag Number	Print	Archived
View Details	Tank	10707	Test Tank Sizing	8568	Test Tank #1	Test Tag #1	<input type="checkbox"/>	<input type="checkbox"/>
View Details	Tank	10708	Tank Sizing Testing	8568	Tank Test #1	Tag #1	<input type="checkbox"/>	<input type="checkbox"/>

Example:

From: dabend@contdisc.com

Message: Please contact me regarding the following sizing. I've entered the required information but I'm not getting any valves in the dropdown list

Large Tank Project #8568
Valve Sizing#1 #10707

.:

Your request will be sent to the Groth Customer support link and you should get a response within 24 hours.

Valve sizing FAQ – Common Issues:

1. **You created a sizing but there are no products listed.**

- a. Click on the 'Why are no products listed' link to view some possible reasons and solutions

Possible Reason	Corrective Action
Atmospheric Pressure is not a realistic value.	Check value and unit of measure.
Data entry errors	Double check entry of values and unit(s) of measure.
Required flow rate is too high for selected size.	Try setting "Preferred Size:" to "Smallest" to see if another size has the required flow capacity.
Required Flow Rate is greater than capabilities of available valve models and sizes.	Try dividing the Required Flow Rate by (2) to determine if (2) valves of a given size will satisfy the flow requirements; if that's not enough, divide by (3) for (3) valves, etc.
	Set the Required Flow Rate to zero, then select the preferred valve size and model, view the PDF report to see the capacity of the selected valve.
If there is still no "Recommended Products" shown, then the pressure setting and/or vacuum setting is outside the range of available settings for all products.	Adjust setting(s) accordingly.

2. **You get a screen about an 'application error'.** In some cases due to a bug or data corruption the application may be unable to load or calculate the sizing properly and will default to the following error message. Try using the back button and attempting the operation again. If the problem persists please use the 'Request Help' button to let us know what sizing is having the issue.

We're sorry, the application has experienced an error.

Exception of type 'System.Web.HttpUnhandledException' was thrown.

Use the browser back button to return to the previous page

Or you can return to the [Default Page](#)

If you continue to experience errors please use the Request Help link.