

CAPS-2

User Manual ver. 1.0



> Johnson Pump[•]

Internet Support

E-mail: caps2support@spxflow.com Web: <u>www.spxflow.com/johnson-pump/</u>

Address

SPX Flow Europe Limited Belgium, Evenbroekveld 2-6, BE-9420 Erpe-Mere. Belgium

SPXFLOW°

> Johnson Pump[•]

Contents

1.1.	Introduction	5
1.1.	1. CAPS-2	5
2.1. A	pplication URL and Login Screen	6
2.2. M	Iain Screen	9
2.3. P	ump Selection Screen	
2.3.	1. Procedure to choose a Pump	
2	.3.1.1. Selection Criteria	
2	.3.1.2. Graphs and Reports	15
2.4. U	nit Convertor Screen	
2.5. P	ressure Loss Calculator Screen	
2.5.	3. Inlet and Outlet Pipe system	21
2	.5.3.1. Procedure to edit Pipes in the system	22

SPXFLOW[®]

> Johnson Pump[•]

About this manual

This manual is a user guide to the CAPS. It contains a concise description of the software.

Structure of this manual

The structure of the CAPS - user manual is described below:

Chapter 1 – Introduction to the CAPS, contains a brief introduction of the software.

Chapter 2 – Using of the CAPS, gives step-by-step instructions for operating the software.

Chapter 3 – CAPS Maintenance Screen contains information to keep the application DB up to date.

Recommended settings to use CAPS-2 Web Application

Resolution - Full HD (1920x1080) **Scale -** 100% **Browser Zoom -** 100%

Note - *Change in recommended settings cause the UI looks odd. To make use of better experience use the recommended settings.*

Guidelines to use this manual

The conventions used in this manual are given below:

Bold Bold Text denotes User Roles, the names of Buttons, Tabs or Screens.

Paths Paths in this manual are denoted using backslashes (\) to separate drive names, directories and files, as in

C:\dir1name\dir2name\filename



> Johnson Pump[•]

Chapter 1 - Introduction to CAPS

1.1. Introduction

1.1.1. CAPS-2

CAPS-2 is the web-based test records maintenance software for Johnson pumps. Using this application, it is possible to select a graph which complies with all the specified criteria.

Following product lines are covered in CAPS-2:

Johnson Pump Internal Gear Pump Series:

- TopGear GS/GP/GM/H
- TopGear MAG
- SRT 150/200
- TopGear Bloc

Johnson Pump Rotary Lobe Pump Series:

- TopLobe
- TopLobe Plus
- TopWing



Chapter 2 - Using the CAPS

2.1. Application URL and Login Screen

Url: <u>https://capsapp.spxflow.com</u>. Use this URL to launch the application. Which will take you to the screen below.



Figure 2.1: Entry Screen

Hitting the login button gets you to the SPXFLOW login page as shown below, where the user is supposed to enter his login ID and password. Based on the User Login type the software accessibility will differ as explained in <u>chapter 1</u>.



Figure 2.2: Login Screen

Note: If the user has no Login ID then he needs to create a new Login ID and password by clicking **"Don't have an account yet?"**

SPXFLOW[°]

> Johnson Pump[•]



Figure 2.3: Create new Login ID

When the button above is hit, the screen below loads and asks the user to create a password for the newly created ID and enter his login information, which includes his email address.

SPX FLOW External Ac	oount Registration Form
Brand Access (Select all SPX FLOW brands you are authorized to sell)*	Email *
Anhydro	First name *
APV	Last some f
Bran+Luebbe	Last hame -
Gerstenberg Schröder	Company *
Hytec	City *
Johnson Pump	State / Province / Region *
Johnson Pump Marine	Country *
Philadelphia Mixing Solutions	Afghanistan ~
Plenty	Business Phone Number
Power Team	
Setal Separation	SPX FLOW Customer ID
■ Stone	Password *
Uutechnic	Confirm password *
Waukesha Cheny-Burrell	I have read and understood the Terms of Use
SPX FLOW Contractor (N/A for channel partners)	Submit
(Select all applications you are requesting access to)*	
Media Hub	

Figure 2.4: Creating login ID and password

After submitting, a second screen with the message "Account registration complete" appears for confirmation.





Figure 2.5: Confirmation Screen

Reloading the screen takes you to the entry screen. When you click the login button after creating a Login ID, you are immediately logged in and taken to the main screen.

In the unlikely event that the user forgets their password, they can reset it to a different one by clicking the "forgot password?", as seen below.

	Login
SPX FLOW Employee Login:	External Partner Login:
Click the logo to SSO with your SPX FLOW Account.	Log in with your email and password:
SPXFLOW	Email *
	or Password *
	Keep me logged-in Eorgot.password?
	Submit
	Don't have an account yet?

Figure 2.6: Forgot Password

On clicking "forgot password?", the user is directed to a page requesting the email address they used to create their Login ID. This is shown in the illustration below.

SPXFLOW°

> Johnson Pump[®]

Forgot Password	
Please enter your email address to reset your password:	
Email: *	
Back to Login	

Figure 2.7: Provide email

An email regarding the password change is sent when the submit button is pressed.

Forgot Password	
An email regarding your password change has been sent to your email address.	
Back to Login	

Figure 2.8: Back to login page

You can access the login page by selecting "Back to Login" after updating your password. The user can now log in and utilise the application there.

Note - *The user's login will be valid for 8 hours from the time of Login, Once the timeout occurs and the user seems active, the refresh token with a validity of 7 days will be generated automatically, and the session will be maintained. After this timeout the user will be taken to Login Screen.*

2.2. Main Screen

Once the Login is valid, the Main screen will open with the Pump Selection screen as default. The Options available in Main Screen are explained below.

> Johnson Pump[®]



- **Pump Selection Screen** The Pump selection screen is used to identify pumps that fall under the user's requirements.
- Unit Converter Screen This screen is used for easy unit conversion which can be used for checking different values.
- **Pressure Loss Calculator Screen** This screen performs calculations to identify the pressure loss between inlet pipe and outlet pipe that are added by the user.
- **Fullscreen** To toggle between Fullscreen mode and normal mode.
- **Logout** To logout from the CAPS application.
- User profile To view the user details and change the Current Role of the User can be modified.

SP FLOW	CAPS VL0.0												jeyaprathap@unilogic.in	• •
ED Pump Selection	PUMP SELECTION												Units OUS	● Metric
B Unit Convertar	Required Input Para	meters			Search									
1	Liquid's Capacity'	0	m3/h	~	Pump Name	RPM	Power (kW)	Torque (Nm)	NPSHr (m)	Periph, Vel.(m/s)	Shear Rate (1/s)	Efficiency (%)	Hydro, Lubric,	
Pressure Loss	Differential Pressure	0	bar	*										
Calculator	Max Temperature	0	°C	~										
	Liquid's Density	0	kg/m3	~										
	Liquid's Viscosity	0	mPas	~										
	Optional Limit Cond	itions												
	Max.NP5Hr	0	m	~					No data	to show				
	Max.Periph.Velocity	0	m/s	*										
	Max.Particle.Size	0	mm	~										
	Slip Correction Factor	1												
	Pump Families													
	Pump Family *			~										
	@ 2024 - SPX Flow													
				_										

Figure 2.9: Main Screen

SPXFLOW[®]

> Johnson Pump[•]

Adversion	m3/h bar *C kg/m3 mPas	2 2 2 3	Search Pump Name	8PH Peeer (MR) Tongue (Mm) MPSHr (m) Pe	righ, VeC(m/s) Shear Rate (1/s) Efficiency (%) Hydre, Lubric.								
Required Input Parameters Pequired Input Parame	m3/h bar 'C kg/m3 mPas m	6 6 6 6	Search Pump Name	RPM Pawer (MR) Torque (Mn) MPSHr (m) Pe	right, Vel.(m/s) Shear Rate (1/s) Efficiency (%) Hydro, Lubric.								
Lippid's Capacity." 0 Differential Pressure 0 Main Temperature 0 Lippid's Variation 0 Definition 0 Definition 0 Definition 0 Definition 0 Definition 0 Max.NPBH 0 Max.PerificieSize 0	m3;h bar *C kg/m3 mPas	6 6 6 6 6	Pump Name	RPM Power (MR) Tonque (Nm) Nd*Sir (m) Pe	right, Well(W)19 Shear Rate (1/s) Efficiency (%) Hydre, Lubric.								
Attant Temperature 0 Attan Temperature 0 Liquir's Density 0 Densit	bar °C kg/m3 mPas m	5 5 5 3											
Hax Imposulue 0 Liquit's Denity 0 Liquit's Viscolty 0 Hax Period 0 Max Period 0 Max Period 0	тс kg/m3 mPas m	2 2 2											
Liquid's Dennity 0 Liquid's Vennity 0 Liquid's Vincenty 0 Max.White 0 Max.White 0 Max.Particle.Size 0	kg/m3 mPas m	3 3											
Lépüér Viscenty 0 Optional Limit Cenditions Max.Witiér 0 Max.Periph.Valocity 0 Max.Periph.Sale 0	mPas	2											
Optional Limit Conditions Max.NPSHr 0 Max.Periph.Velocity 0 Max.Particle.Size 0	m												
Max.NPSHr 0 Max.Periph.Velocity 0 Max.Particle.Size 0	m												
Max.Periph.Velocity 0 Max.Particle.Size 0		~		No data to s	how								
Max.Particle.Size 0	m/s	~											
	mm												
Slip Correction Factor 1													
Pump Families													
Annual and a second sec													
Pump raming													

Figure 2.10: User Email

SPXFLOW	CAPS v1.0.0			jeya	prathap@unilogic.in	ه ::
E Pump Selection	USER PROFILE				2 Ec	lit Profile
Unit Convertor		Email	ievanrathan@veilineir in			
Pressure Loss Calculator		Current Role	Admin			
Lt. Users						
* Version	© 2024 - SPX Flow					
I≣ Pump Family						
O Pump						
D Pipe Material						
Pipe Element						
- An Ring Flomant						
Belease						

Figure 2.11: Profile Screen

On clicking the User Email, the profile screen appears. Using the Edit user button on the top right corner, one can edit his own details.

> Johnson Pump[•]

SPXFLOW[°]

EDIT PROFILE	×
Email address	_
jeyaprathap@unilogic.in	
Current Role *	
Admin	~
Update profile Cancel	

Figure 2.12: Edit Profile Pop-up

Note: *The administrator must enable each of the user roles before they become accessible to the user. Until then, the drop-down contains only 'User' as the only option.*

2.3. Pump Selection Screen

This screen is used by the user to enter the required pump parameters and limits, along with the pump family, and find the appropriate pump that satisfies their needs.

SP FLOW	CAPS v10.0											-	jeyaprathap@unilogic.in	0 0
E Pump Selection	PUMP SELECTION												Units OUS	⊙ Metric
	Required Input Para	meters			Search									
Cont Convertar	Liquid's Capacity'	0	m3/h	~	Pump Name	RPM	Power (kW)	Torque (Nm)	NPSHr (m)	Periph. Vel.(m/s)	Shear Rate (1/s)	Efficiency (%)	Hydro. Lubric.	
Pressure Loss Calculator	Differential Pressure	0	bar	*										
	Max Temperature	0	,c	~										
	Liquid's Density	0	kg/m3	~										
	Enquire s vincourty		ness											
	Optional Limit Cond	litions							No. data i					
	Max.NP5Hr	0	m	~					No data	to show				
	Max.Particle.Size	0	m/s	*										
	Slip Correction Factor	1												
	Pump Families													
	Pump Family *													
	© 2024 - SPX Flow													

Figure 2.13: Pump Selection Screen



2.3.1. Procedure to choose a Pump

2.3.1.1. Selection Criteria

• There are choices for unit selection. The calculation will be performed in Metric units if Metric is selected, or in US units if US is selected.

SP FLOW	CAPS VI.0.0											in	vəprəthəp@unilogic.in	• •
E Pump Selection	PUMP SELECTION												Units OUS	⊙ Metric
8 Unit Convertor	Required Input Para	meters			Search									
-	Liquid's Capacity*	0	m3/h	.~	Pump Name	RPM	Power (kW)	Torque (Nm)	NPSHr (m)	Periph. Vel.(m/s)	Shear Rate (1/s)	Efficiency (%)	Hydro. Lubric.	
BD Pressure Loss	Differential Pressure	0	bar	~										
Carcelator	Max Temperature	0	۰۲	~										
	Liquid's Density	0	kg/m3	~										
	Liquid's Viscosity	0.1	mPas	.*										
	Optional Limit Cond	itions												
	Max.NPSHr	0	m	~					No data	to show				
	Max.Periph.Velocity	0	m/s	~										
	Max.Particle.Size	0	mm	~										
	Slip Correction Factor	1												
	Pump Families													
	Pump Family *			*										
	© 2024 - SPX Flow													

Figure 2.14: Unit Selection

• The minimum required values to filter the pumps are specified with an asterisk (*). If these are not entered, a warning message appears.



Figure 2.15: Required Fields Warning Pop-Up

> Johnson Pump[®]



- The pumps will be listed according to the Required Input Parameters.
- When there is a unit change, the values that are specified by the user are auto calculated according to its unit.
- Once all the required parameters are entered, the search button is used to fetch the pumps based on the input parameters.
- Each page can initially accommodate 100 pumps. It can be set up to 500 pumps per page according to the user's needs.
- Movement between next and previous pages can be done using the buttons that are present at the right bottom.

FLOW	CAPS v1.0.0												jeyaprathap@unilogic.in	• ::
Selection	PUMP SELECTION												Units OUS	● Metric
8	Required Input Para	meters			Search									
	Liquid's Capacity*	10	m3/h		Pump Name	RPM	Power (kW)	Torque (Nm)	NPSHr (m)	Periph, Vel. (m/s)	Shear Rate (1/s)	Efficiency (%)	Hydro, Lubric,	
Md Isure Less	Differential Pressure	0	bar	~										
Calator	Max Temperature	0	°C	~										
	Liquid's Density	0	kg/m3	~										
	Liquid's Viscosity	0.	mPas	~										
	Optional Limit Cond	itions												
	Max.NPSHr	0	m						No data t	to show				
	Max.Periph.Velocity	0	m/s	~										
	Max.Particle.Size	0	mm											
	Slip Correction Factor	î.												
	Pump Families													
	Pump Family *	TopGear GS												
	© 2024 - SPX Flow													

Figure 2.16: Search Button

tion														
tar I	Required Input Parar	meters			Search									
	Liquid's Capacity'	10	m3/h	~	Pump Name	RPM	Power (kW)	Torque (Nm)	NPSHr (m)	Periph. Vel. (m/s)	Shear Rate (1/s)	Efficiency (%)	Hydro. Lubric.	
055	Differential Pressure	0	bar	*	TG GS 185-125	90	0	0	0.6	11	4143	0	Yes	
M	Max Temperature	0	°C	~	TG GS 86-100	193	0	0	0.7	1.8	8071	0	Ves	
	Liquid's Density	0	kg/m3	~	TG GS 58-80	287	0	0	0.8	2.4	12036	0	Yes	
	Liquid's Viscosity	0	mPas	~	TG GS 23-65	724	0	0	1.5	4.4	25666	0	Yes	
	Ontional Limit Condi	itions			TG GS 15-50	1111	0	0	2.3	5.8	36361	0	Yes	
	Max.NP5Hr	0	m	~										
	Max.Periph.Velocity	0	m/s	*										
	Max.Particle.Size	0	mm	~										
	Max.Particle.Size Slip Correction Factor	0	mm	*										
	Max.Particle.Size Slip Correction Factor	0	mm	~										
	Max.Particle.Size Slip Correction Factor Pump Families	0	mm	~										
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	mm	~										
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	ma	~										
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	mm	~										
	Max.Particle.Size Slip Correction Factor Pump Family *	0 1 TopGear GS	mm	~	Eltrard frame: 5							100 per pare		
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	mm	~	Filtered Pumps: S							100 per page	¥ ×	
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	mm	~	Filtered Pumpi: S							100 per page	v (*	1
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	me	~	Filtered Pumpi: S							100 per page	v (*	1
	Max.Particle.Size Slip Correction Factor Pump Families Pump Family *	0 1 TopGear GS	THE .	~	Filtered Pumpic S							100 per page	¥ .	ł

Figure 2.17: After Searching



2.3.1.2. Graphs and Reports

- In order to view the graphs of the pipes, double clicking on a required pipe opens a screen with three graphs and calculated pump data based on the pump's RPM.
- The graphs that are shown in this screen are listed below
 - \succ Pshaft(n)
 - > NPSH(n) / NIPR(n)
 - \succ Qeff(n)



Figure 2.18: Graph Screen

Change RPM	503	Update Results

Figure 2.19: Change RPM and Update Results Button

- The RPM can be edited and updated by clicking the Update Results button at the top right corner, such that the change in values is reflected in the pump data and graphs.
- Even though the entered RPM changed the capacity over 10% from initial flow, it shows a warning popup, by clicking Ok the calculation proceeds.
- Each pump should have a maximum allowable shaft speed. If RPM exceeds, it throws a warning and stops the calculation.
- If the entered RPM leads to negative capacity, it throws a warning and stops the calculation.

SPXFLOW°

- If entered RPM's NPSHr or Peripheral velocity is greater than the limit condition, it shows a YesOrNo popup if yes is pressed calculation proceeds otherwise calculation will be stopped.
- Negative values are not allowed in the "change RPM" field.
- Initially the RPM value will be with decimal values, but the user cannot enter the decimal values in that field.



Figure 2.20: Show Report Buttons

SPXFLOW[®]

> Johnson Pump[®]

Output Report Reference:			
JP Office:			
Notes:			
			li.
Print Cancel			

- To generate a report, one must press the 'Show Report' adjacent to the update button that gives a popup to enter the required details. Once it is completed clicking the 'Print' button opens a preview of the report for verification.
- The report can be saved or printed directly using the print button.



Figure 2.22: Report (pdf)



> Johnson Pump[®]

2.4. Unit Convertor Screen

- In the Unit Convertor Screen there are Ten parameters namely
 - Flow
 - Density
 - Pressure
 - length
 - Area
 - Temperature
 - Viscosity
 - Power
 - \circ Volume
- Entering a value in any field of a parameter will automatically calculate and display the other values based on the units in the respective fields.
- To calculate Viscosity unit values, density value is needed.
- Entering Viscosity value without entering Density value, shows a warning pop-up as "Calculation of viscosity in cP needs the knowledge of Liquid density".

FLOW	CAPS v1.0.0					jeyat	rathap@unilogic.in ♥
E Selection	UNIT CONVERTOR						
Convertor	Flow	m3/h	m3/s	Vmin	Us	UKGal/min	USGal/min
isure Loss idculator	Density	kg/m3	kg/l	lb/ft3	lb/in3	*Baumé	
	Pressure	bar	Pa(N/m2)	PSI	mmHg	mWk	
	Length	m	mm	ft	in	μin	
	Mass	kg	lb	ounce(oz)	ton(UK)		
	Area	m2	mm2	ft2	in2	yd2	
	Temperature	°C	*к	*F			
	Viscosity	mPas(cP)	m2/s	cSt	Saybolt	Redwood	*Engler
	Power	kw	W	HP	cal/s	kcal/h	
	Volume	m3	dm3(l)	ft3	in3	UK Gallon	US Gallon
	© 2024 - SPX Flow						

• Negative values are allowed only for the Temperature field.

Figure 2.23: Unit Convertor Screen



2.5. Pressure Loss Calculator Screen

SPXFLOW	CMSv120 jeyapathap@wnligt.in 🧿 🕻									
E Pump Selection	PRESSURE LOSS CALCULATOR									
B Unit Convertor	Required Liquid's Pa	irameters		Inlet Conditions			Outlet Conditions			
	Liquid's Capacity*	0	m3/h ~	Pressure Drop	0	bar 👻	Pressure Drop	0	bar ~	
Pressure Loss Calculator	Liquid's Density*	0	kg/m3 👻	Static Head Inlet	0	m v	Static Head Outlet	0	m ~	
	Liquid's Viscosity *			Static Inlet Pressure	0	bar 👻	Static Outlet Pressure	0	bar 👻	
	Newtonian Liquid	0	mPas v	Dynamic Inlet Pressure	0	bar 👻	Dynamic Outlet Pressure	0	bar 👻	
	O Nee Newtonia Lini			Total Pressure Inlet	0	bar 🗸	Total Pressure Outlet	0	bar 🗸	
	U Noir-Newtonian Eiga	10			Index	Pipe System Definition		Outlet	Pipe System Definition	
				Differential Pressure Result	0	bar ~				
					Calculate	Differential Pressure				
	© 2024 - SPX Flow									

Figure 2.24: Pressure Loss Calculator Screen

• In the Pressure Loss calculator screen, Liquid's Capacity, Liquid's Density and Liquid's Viscosity are required to calculate differential pressure.

Liquid's Visc	osity *						
Newtonian Liquid							
Non-Newton	nian Liquid						
I Edit	Get Graph	Validate Graph					

Figure 2.25: Liquid's Viscosity

- There are two radio buttons under Liquid's Viscosity namely:
 - Newtonian Liquid
 - Non-Newtonian Liquid
- **Newtonian Liquid** Selecting Newtonian Liquid radio button, allows the user to enter Liquid viscosity with its unit.
- Non-Newtonian Liquid Selecting Non-Newtonian Liquid radio button, shows three buttons namely Edit, Get Graph and Validate Graph.
- Clicking the **Edit** button opens a pop-up which allows the user to enter shear rate and viscosity coordinates.
- Clicking the **Get Graph** button opens a pop-up with a graph plotted using the user entered shear rate and viscosity coordinates.
- Clicking the Validate Graph button shows a pop-up whether the graph is valid or not.

SPXFLOW[®]

> Johnson Pump[®]

Shear Rate (1/s)	Visc. (m.Pas)

Figure 2.26: Edit Coordinates

- After filling the required fields in pressure loss calculator screen, there are two pipe systems namely:
 - Inlet Pipe System
 - Outlet Pipe System
- Differential pressure can also be calculated using user customized inlet and outlet pipes.

Inlet Conditions				Outlet Conditions				
Pressure Drop	0	bar	~	Pressure Drop	0	bar	~	
Static Head Inlet	0	m	~	Static Head Outlet	0	m	~	
Static Inlet Pressure	0	bar	~	Static Outlet Pressure	0	bar	~	
Dynamic Inlet Pressure	0	bar	~	Dynamic Outlet Pressure	0	bar	~	
Total Pressure Inlet	0	bar	~	Total Pressure Outlet	0	bar	~	
	Inlet	t Pipe System Definiti	on		Outlet	Pipe System Definit	tion	

Figure 2.27: Inlet Conditions and Outlet Conditions

- The inlet and outlet pipe definitions are edited using the respective 'Pipe System Definition' button. Clicking the button opens a screen and allows the user to add or delete the pipes in the pipe system for the calculation.
- Once returned to the pressure loss calculator screen from Pipe system screen, a calculation is made for the added pipes and those values are displayed in the respective pipe system condition. That is **Pressure drop** and **Dynamic inlet****outlet pressure** are updated. And according to the Static inlet\outlet pressure total inlet\outlet pressure is calculated and displayed.



- After editing both systems, the 'Calculate Differential Pressure' button is used to calculate the pressure loss. That is displayed in the Differential Pressure Result box.
- The differential pressure can be calculated by clicking the "Calculate Differential Pressure" button after providing the necessary inputs, including the inlet and outlet conditions.

Note: *The differential pressure calculated in this screen will be auto filled in the selection screen along with Density and Viscosity.*

2.5.3. Inlet and Outlet Pipe system

SPXFLOW	CAPS v1.0.0								jeyaprathap@unilogic.in	•
	INLET PIPE SYSTI	EM				Add a Pipe to System Delete a Pipe from System	Consult a Pipe from System	Clear All Pipes from System	Compute Pressure Drop	Back
	Add Pipe			Pipe Number	Eq. Length	Pressure Drop	Liquid's Velocity	Reyn	olds Nbr	Lambda
	Pipe Length *	0	m v							
	Pipe Diameter *	0	mm ~							
	Pipe Material Drawn tubing of glass/copper/brass 🛛 🗸									
	Pipe Elements	Select	×							
	© 2024 - SPX Flow									

Figure 2.28: Inlet Pipe System Screen

SPHFLOW	CAPS v1.0.0								jeyaprathap@unilogic.in	0 C
	OUTLET PIPE SY	STEM				Add a Pipe to System Delete a Pipe from System	Consult a Pipe from System	Clear All Pipes from System	Compute Pressure Drop	Back
	Add Pipe		Pipe Number	Eq. Length	Pressure Drop	Liquid's Velocity	Reynolds	Nbr L	.ambda	
	Pipe Length *	0	m ~							
	Pipe Diameter *	0	mm ~							
	Pipe Material Drawn tubing of glass/copper/brass ~									
	Pipe Elements	Select	~							
	© 2024 - 5PK Flow									

Figure 2.29: Outlet Pipe System Screen

> Johnson Pump[®]



- Both Inlet and outlet pipes have options to add, delete, consult and clear all pipes from the system.
- They also have an option to compute pressure drop for all the pipes in the system. And the results for each pipe are listed below.
- Initially the system contains **no pipes**, the user has to add pipes to the system to perform pressure drop calculation.
- A total of **10 pipes** can be added to each pipe system. Both the inlet and outlet systems are not linked, so editing the pipes in one system doesn't affect the other.

2.5.3.1. Procedure to edit Pipes in the system

- Pipe Length, Pipe Diameter and Pipe Material are required for a pipe in the system.
- Additionally, the pipe elements dropdown lists the pipe element family. By choosing a pipe element family, list the pipe elements below it. The quantities of the elements can be entered into the respective fields before adding a pipe.
- Each element family holds all the entered details no matter what element is selected in the dropdown box.
- Once the add button is clicked, the pipe details are added into the system, and the fields are cleared, ready for the next entry.
- The added pipe can be deleted using the 'Delete a Pipe from System' button. Clicking this button pops up a dropdown that lists all the pipes present in the system choosing a pipe and clicking Delete will remove the pipe from the system.
- The added pipe can be seen by using the 'Consult a Pipe from System' button. Clicking this button pops up a dropdown that lists all the pipes present in the system, choosing a pipe will display the data on the left panel.
- The loaded values cannot be edited and can only be viewed.
- When these values are loaded the boxes cannot be used to add new pipes, so the 'Add a Pipe to System' button is used to reset the fields, for adding a new pipe.
- The 'Clear All Pipes from System' button is used to clear all the added pipes to the respective system. That is when clicked from inlet system definition then the pipes present in the inlet system will be deleted.
- Back button is used to return to the pressure loss calculator screen.