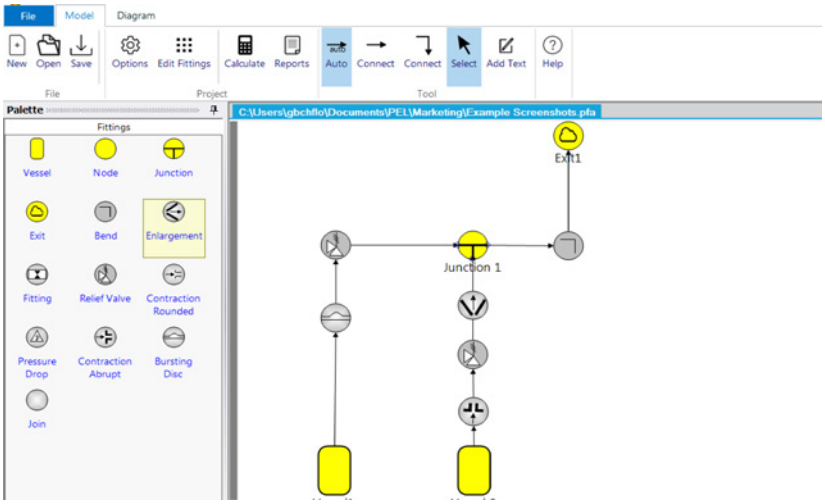
GENERAL FACTSHEET

PEL ADRIAN

Compressible network flow



PEL ADRIAN calculates flows and pressures for high velocity, compressible gases in a network and is relevant for the modelling of relief streams

PEL ADRIAN calculates single phase high velocity gas or vapour flowrates and pressure drops in piping systems. These may consist of a single pipe or a network. When supplied with the pressure at the inlets and outlet, PEL ADRIAN calculates the flows and internal pressures throughout the network. Alternatively, given the input flows and the exit pressure, it will calculate the flows and pressures at all other points.

What we offer

PEL ADRIAN has all of the flexibility you need to draw and construct your models using an intuitive graphical interface. Calculating compressible flow by hand is an iterative and time consuming process. PEL ADRIAN has a tried and tested calculation engine to generate the results, predict flow chokes and provide the analysis the engineer needs simply and easily.

Key features

A number of specific types of equipment are modelled:

- Contractions
- Expansions
- Relief valves
- Bursting discs
- Bends
- Fittings

Creating models is simple:

- Simple drag and drop tool for drawing the model
- Automatic connection of vessels and fittings
- Automatic pipe size correction when diameters are changed
- Table view of the system to allow quick modifications to multiple items
- Simple tools for internal pipe diameters and pipe roughness
- K Value calculator for fitting losses
- Physical property calculator through a simple interface
- Insert isometric or sketch into the drawing tool so the model can be built over the isometric

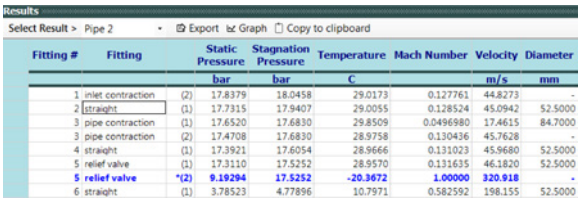
Benefits

- Users can have complete confidence in the results
- Reduces risk of human errors in calculations - essential when working with safety critical equipment
- Allows engineers to be more efficient and productive
- Provides a documented record of calculations for audit
- Improves QA and standardises procedures by everyone using the same set of data and calculations
- PEL ADRIAN can be licensed as an add-on to PEL or as a completely separate programme

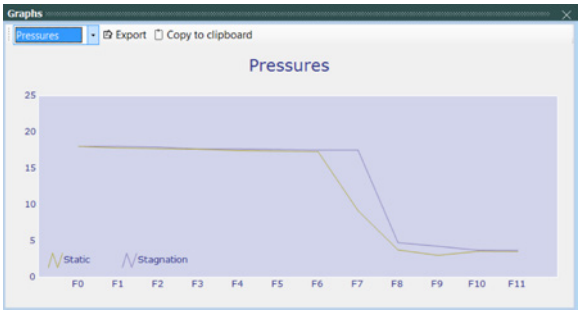
The presentation of results makes it easy to understand how your model is working:

- Workspace is fully customisable with dockable windows to display the information you want the way you want it
- Calculated results and input data can be highlighted on the drawing
- Result tables can be copied and pasted into other applications such as MS Excel
- Calculated results can be presented in a customisable table of results and exported to MS Office

The results table provides simple and useful results displaying both stagnation and static pressure as well as temperatures, Mach Number and gas velocities. The table also highlights where chokes / pressure discontinuities are present in the network. These can also be displayed graphically.



Fitting #	Fitting		Static Pressure	Stagnation Pressure	Temperature	Mach Number	Velocity	Diameter
			bar	bar	C		m/s	mm
1	inlet contraction	(2)	17.8379	18.0458	29.0173	0.127761	44.8273	-
2	straight	(1)	17.7315	17.9407	29.0055	0.128524	45.0942	52.5000
3	pipe contraction	(1)	17.6520	17.6830	29.8509	0.0496980	17.4615	84.7000
3	pipe contraction	(2)	17.4708	17.6830	28.9758	0.130436	45.7628	-
4	straight	(1)	17.3921	17.6054	28.9666	0.131023	45.9680	52.5000
5	relief valve	(1)	17.3110	17.5252	28.9570	0.131635	46.1820	52.5000
5	**relief valve**	***(2)**	**9.19294**	**17.5252**	**-20.3672**	**1.00000**	**320.918**	**-**
6	straight	(1)	3.78523	4.77896	10.7971	0.582592	198.155	52.5000

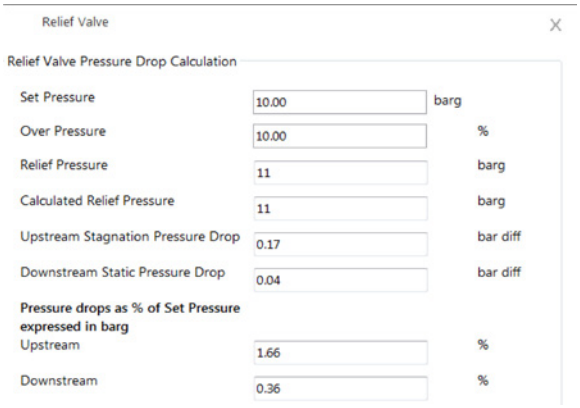


ADRIAN and relief studies

Relief systems with relief valves and/or bursting discs require modelling of the relief system to determine either pressure drops or the system capacity.

PEL ADRIAN provides the tools to complete this simply and easily.

For relief valves the upstream irrecoverable pressure loss due to friction and the back pressure is determined and reported as a pressure loss and a percentage of set pressure.



For bursting disc systems the relief pressure and the exit pressure, along with the frictional losses in the pipe and across the disc can be modelled to determine the system capacity.

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