## The analyzation of body valve

Azarsam Instrument Co. (commercial name as Eyvaz Technic) has different approach for testing the products. One of them is the analyzation of working pressure valve body such as DN80&PN16. In this report, we have studied the ABAQUS software and mechanical characteristics. You are able to see this model with a bit of revision in the ABAQUS software. Concerning the situation of the valve and asymmetry. The valve analyzation is totally 3D.

The mechanical properties of the material are shown in table 1. These data are measured via a tensile test or are derived from ASTM standard. It is measure that the properties are homogeneous.

Poisson's	Elastic	Fracture	Ultimate tensile	Yield	Material
ration	modulus	Strain	strength	strength	
	GPa	%	MPa	MPa	
0/25	176	6	710	477	GGG.70

## Measurement standard

	💠 Edit Material	
ame: Material-Ti	Name: Material-Ti	
escription:	Description:	
Material Behaviors	Material Behaviors	
Elastic	Elastic	
Plastic	Plastic	
General Mechanical Thermal Electrical/Magnetic Other	<u>G</u> eneral <u>M</u> echanical <u>I</u> hermal <u>E</u> lectrical/Magnetic <u>O</u> ther	1
Elastic	Plastic	
Type: Isotropic 🗸 Suboptions	Hardening: Isotropic	▼ Suboption
Use temperature-dependent data	Use strain-rate-dependent data	
Number of field variables: 0	Use temperature-dependent data	
Moduli time scale (for viscoelasticity): Long-term	Number of field variables: 0 *	
No compression	Data	
No tension	Yield Plastic Stress Strain	
Data	1 220 0	
Young's Poisson's Modulus Ratio	2 220 0.54	
1 11600 0.34		

The description of mechanical specifications in ABAQUS software are shown in table 2.

The analyzation perform in one-step general static method in Abaqus standard.

In this analyzation, the valve has standard pressure. The maximum working pressure is 16 bar. As you know, upper side of the valve is not model. You should calculate the upper side.

Please calculate the formula: f1 = f2 p1.A1 = P2.A2

The maximum working pressure= P1

The surface area of above valve hole = A1

P2= the pressure that remove above valve.

A2= the surface area of above valve.

The measurement of P1 and P2 can put in the load majole like pressure. In this majole, you should determination of exchange border. In this analyzation, you should check left and right surface. (U2)





After analyzation the conclusion have been checked. In figure 5. You can see different parts of valve. You can compare 2 criteria's, 1- phone mixer and 2- Teresa application. When you look at the figure 5 you can understand we don't have any hurt on valves.