manish abraham 1

MESH:

Entity	Size
Nodes	2506
Elements	8648

ELEMENT TYPE:

Connectivity	Statistics
TE4	8648 (100,00%)

ELEMENT QUALITY:

Criterion	Good	Poor	Bad	Worst	Average
Stretch	8594 (99,38%)	54 (0,62%)	0 (0,00%)	0,231	0,580
Aspect Ratio	6994 (80,87%)	1615 (18,67%)	39 (0,45%)	6,633	2,134

Materials.1

Material	Aluminium
Young's modulus	7e+010N_m2
Poisson's ratio	0,346
Density	2710kg_m3
Coefficient of thermal expansion	2,36e-005_Kdeg
Yield strength	9,5e+007N_m2

Static Case

Boundary Conditions

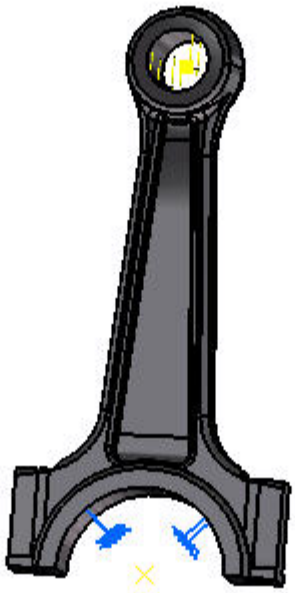

Figure 1

STRUCTURE Computation

Number of nodes	:	2506
Number of elements	:	8648
Number of D.O.F.	:	7518
Number of Contact relations	:	0
Number of Kinematic relations	:	0

Linear tetrahedron : 8648

RESTRAINT Computation

Name: Restraints.1

Number of S.P.C : 291

LOAD Computation

Name: Loads.1

Applied load resultant :

Fx	=	1	.	490e-007	N
Fy	=	-3	.	000e+003	N
Fz	=	-1	.	000e+005	N
Mx	=	4	.	860e+002	Nxm
My	=	1	.	076e-006	Nxm
Mz	=	-2	.	990e-008	Nxm

STIFFNESS Computation

Number of lines	:	7518			
Number of coefficients	:	133080			
Number of blocks	:	1			
Maximum number of coefficients per bloc	:	133080			
Total matrix size	:	1	.	55	Mb

SINGULARITY Computation

Restraint: Restraints.1

Number of local singularities	:	0
Number of singularities in translation	:	0
Number of singularities in rotation	:	0
Generated constraint type	:	MPC

CONSTRAINT Computation

Restraint: Restraints.1

Number of constraints	:	291
Number of coefficients	:	0
Number of factorized constraints	:	291
Number of coefficients	:	0
Number of deferred constraints	:	0

FACTORIZED Computation

Method	:	SPARSE
Number of factorized degrees	:	7227
Number of supernodes	:	874
Number of overhead indices	:	42462
Number of coefficients	:	674838
Maximum front width	:	303
Maximum front size	:	46056
Size of the factorized matrix (Mb)	:	5 . 14861
Number of blocks	:	1
Number of Mflops for factorization	:	1 . 027e+002
Number of Mflops for solve	:	2 . 735e+000
Minimum relative pivot	:	2 . 875e-002

Minimum and maximum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
3.9072e+007	Tx	1548	-3.2127e+000	3.3617e+001	4.3119e+000
2.2310e+009	Tx	2210	4.2970e+000	-8.0403e-001	1.4955e+002

Minimum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
4.6381e+007	Ty	2500	-3.7216e+000	-2.9672e+001	2.2132e+001
5.1365e+007	Tx	2505	-2.2316e+000	1.0395e+001	2.7401e+001
5.1902e+007	Tx	849	-6.0000e+000	-1.3222e+001	3.5437e+001
6.8468e+007	Tz	2040	4.0126e+000	1.6514e+001	3.5179e+001
6.9298e+007	Tz	2033	0.0000e+000	1.2882e+001	4.3016e+001
7.4517e+007	Ty	849	-6.0000e+000	-1.3222e+001	3.5437e+001
7.5276e+007	Tz	1622	-3.0000e+000	-3.2940e+000	5.1072e+001
7.9469e+007	Ty	2040	4.0126e+000	1.6514e+001	3.5179e+001
			-	-	

8.2163e+007	Tx	2138	6.0000e+000	1.0552e+001	1.0923e+002

Translational pivot distribution

Value	Percentage
10.E7 --> 10.E8	3.8744e-001
10.E8 --> 10.E9	9.2971e+001
10.E9 --> 10.E10	6.6418e+000

DIRECT METHOD Computation

Name: Static Case Solution.1

Restraint: Restraints.1

Load: Loads.1

Strain Energy : 4.128e+001 J

Equilibrium

Components	Applied Forces	Reactions	Residual	Relative Magnitude Error
Fx (N)	1.4901e-007	-1.5071e-007	-1.7030e-009	3.9996e-013
Fy (N)	-3.0000e+003	3.0000e+003	6.0691e-009	1.4253e-012
Fz (N)	-1.0000e+005	1.0000e+005	-1.4552e-009	3.4175e-013
Mx (Nxm)	4.8600e+002	-4.8600e+002	-1.1002e-009	1.4315e-012
My (Nxm)	1.0757e-006	-1.0760e-006	-3.1182e-010	4.0572e-013
Mz (Nxm)	-2.9897e-008	2.9950e-008	5.3159e-011	6.9167e-014

Static Case Solution.1 - Deformed mesh.1

Figure 2

On deformed mesh ---- On boundary ---- Over all the model

Static Case Solution.1 - Von Mises stress (nodal values).2

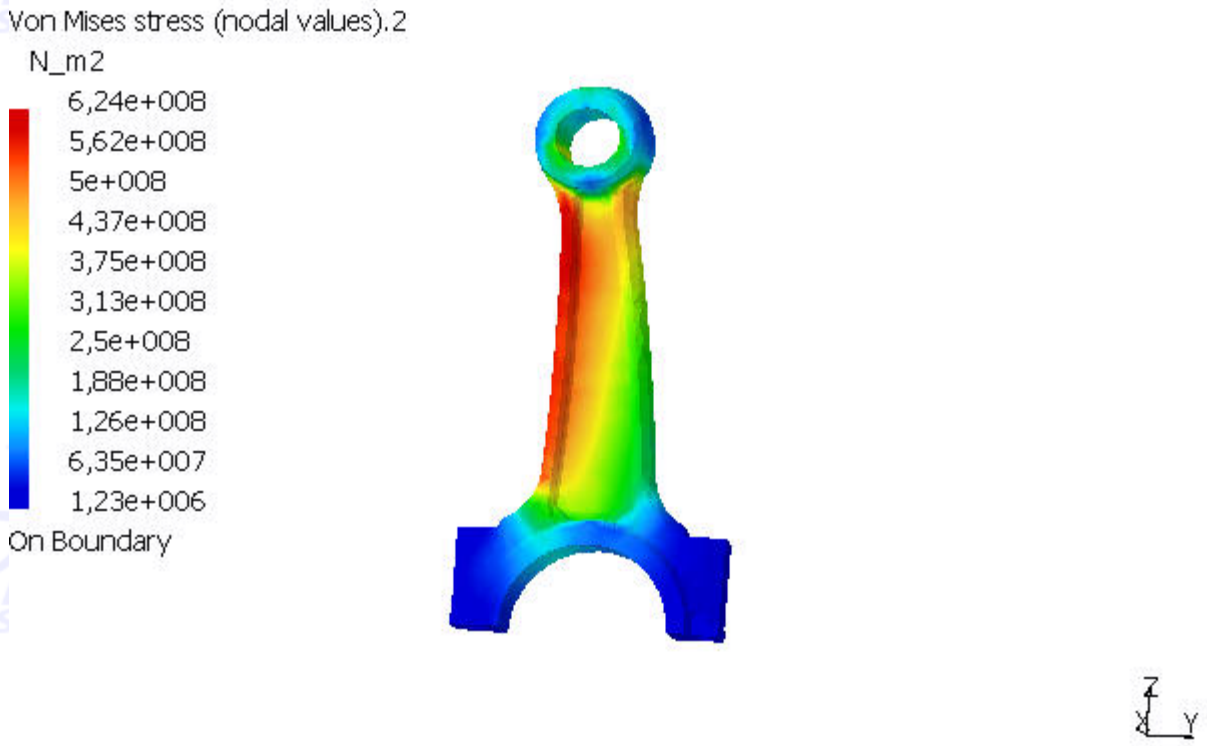

Figure 3

3D elements: : Components: : All

On deformed mesh ---- On boundary ---- Over all the model

Global Sensors

Sensor Name	Sensor Value
Energy	41,276J