



Autodesk (R) Simulation Unsteady Fluid Flow
Version 2012.00.00.0163-WIN 04-Mar-2011
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Date & Time : 05-11-2013 08:41:53
 Input File : ...ctal\valvel fins.ds_data\1\ds
 Command Line Options: -silent-x1116070

PROGRAM VERSION: 201200000163
 Alg-win-x64.DLL VERSION: 201200000163
 AlgConfig-win-x64.DLL VERSION: 201200000163
 Agsdb_ar-win-x64.DLL VERSION: 201200000163

AlgSolve.exe

VERSION: 201200000163

**** Model Unit System Settings:

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Unit System          : Metric mks (SI)  
Force               : N  
Length              : m  
Time                : s  
Temperature (Absolute) : deg C (K)  
Thermal Energy      : J  
Voltage             : V  
Current             : A  
Electrical Resistance : ohm  
Mass                : kg  
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**** Nodal boundary condition codes printing suppressed.

Load function number = 1
Number of time points = 3

Time	Magnitude
0.00000E+00	0.0000000E+00
1.00000E+00	1.0000000E+00
1.00000E+01	1.0000000E+00

Load function number = 1
Time zone ending point number = 3

Time	Magnitude
0.00000E+00	0.0000000E+00
1.00000E+00	1.0000000E+00
1.00000E+01	1.0000000E+00

**** Read input data from AGSDB

**** Control information

Number of nodal points (NUMNP) = 48368
Interpolation order for vel/pressure. . . (INPOR) = 1
Number of elements (NUMEL) = 120710
Number of space dimensions (NSD) = 3
Number of degrees of freedom per node . (NDOF) = 4
Max number of element neighbours. . . . (MAXN) = 64
Max number of pressure node neighbours . (MAXNO) = 64
Gauss quadrature points in each direction(IGAUS) = 2
Number of passes for pressure smoothing.(NSPASS) = 2
Number of pass for vorticity smoothing.(NSPASSV) = 2
Number of steps between reformation. . . (NSBR) = 1
Number of iterations between reformation.(NIBR) = 1
Number of multi time intervals. . . . (NSTP) = 2
Automatic convergence control option. . . (IAUTO) = 1
No. of elements with pressure loads . . (MXELD) = 0
Max. No. of load faces in each element. (MEFACE) = 1
0 <= MEFACE <= 6

**** Mass proportional load cases

Number of Gravity and/or mass loads with
constant accelerations (MASCON) = 1
Option for applying gravity force (INCGRAV) =

**** Parameters for Advanced Control

Option for updating GLS constants (GLSupdt) = 0
Option for updating Turbulent DIFT (TurbUpdt) = 100
Relaxation parameter for N-L iteration (URELX) = 2.000E-01

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Option for using Picard pre-iteration (iPicard) = ****
Option for using Picard method ONLY (PcOnly) = ****
Maximum number of Picard iterations (IPlimit) = 1
Relaxation parameter for Picard iter. (URELXP) = 7.006E-45
Tolerance for absolute norm (Picard) (PcANORM) =

Solution mode . . . . . (MODE ) = 1
  EQ.0 Data check
  EQ.1 Execute
Solution Formulation. . . . . (ISMIXED) = 1
  EQ.0 PENALTY
  EQ.1 MIXED GLS
TIME INTEGRATION SCHEME . . . . . (ISIMP) = 1
  EQ.0 SEMI-IMPLICIT (SYM)
  EQ.1 1ST ORDER IMPLICIT
  EQ.2 2ND ORDER IMPLICIT
RESTART OPTION . . . . . (IRESTA) = 0
  EQ.0 FRESH
  EQ.1 RESTART FROM CURRENT ANALYSIS
  EQ.2 RESTART FROM ANOTHER ANALYSIS

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**** Parameters for Automatic Time Step Control
Option for Automatic time step update (IDOAUTO) = 0
Characteristic velocity scale along X (UMax) = 1.000E+00
Characteristic velocity scale along Y (VMax) = 1.000E+00
Characteristic velocity scale along Z (WMax) = 1.000E+00
Lower threshold for timestep fraction (DTWMIN) = 5.000E-01
Upper threshold for timestep fraction (DTWMAX) = 2.000E+00

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Density. . . . . (RHO ) = 9.982E+02
Viscosity. . . . . (DIF ) = 9.997E-04

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*** Mass/body Load Control Data

*** Time Step Interval Control Data

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FOR MULTI TIME STEP INTERVAL # 1

NUMBER OF STEPS BETWEEN DSK OUTPUT . . . (NSBDSK) = 1
NUMBER OF STEPS BETWEEN PRINT OUTPUT . . (NSB ) = 11
NUMBER OF TIME STEPS . . . . . (NTS ) = 10
TIME STEP. . . . . (DT ) = 1.000E-01
STARTING LOAD FRACTION (Load curve 1). . (STLF ) = 0.000E+00
ENDING LOAD FRACTION (Load curve 1). . (ENLF ) = 1.000E+00
MAXIMUM NUMBER OF ITERATIONS . . . . (NITER) =
Turbulent model type. . . . . (TURBTYP) = 0
  EQ.1 mesh adaptive subgrid scaled turbulent model
  EQ.2 k-e two equation turbulent model (N/A)
NORM FOR RESIDUAL . . . . . (IRELR) = 1
  EQ.0 ABSOLUTE EUCLIDEAN
  EQ.1 RATIO OF CURRENT AND INTIAL
NORM FOR INCREMENT. . . . . (IRELD) = 1
  EQ.0 ABSOLUTE EUCLIDEAN
  EQ.1 RELATIVE EUCLIDEAN
CONVERGENCE PARAMETER (RESIDUAL) . . . . (EPSLNR)= 1.000E-02
CONVERGENCE PARAMETER (INCREMENT) . . . . (EPSLND)= 1.000E-02
STREAM LINE UPWIND PARAMETER. . . . . (SLUP )= 1.000E+00

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FOR MULTI TIME STEP INTERVAL # 2

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NUMBER OF STEPS BETWEEN DSK OUTPUT . . . (NSBDSK) = 1
NUMBER OF STEPS BETWEEN PRINT OUTPUT . . (NSB ) = 21

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NUMBER OF TIME STEPS (NTS) = 20
 TIME STEP. (DT) = 4.500E-01
 STARTING LOAD FRACTION (Load curve 1). . (STLF) = 1.000E+00
 ENDING LOAD FRACTION (Load curve 1). . (ENLF) = 1.000E+00
 MAXIMUM NUMBER OF ITERATIONS (NITER) =
 Turbulent model type. (TURBTYP) = 0
 EQ.1 mesh adaptive subgrid scaled turbulent model
 EQ.2 k-e two equation turbulent model (N/A)
 NORM FOR RESIDUAL (IRELR) = 1
 EQ.0 ABSOLUTE EUCLIDEAN
 EQ.1 RATIO OF CURRENT AND INTIAL
 NORM FOR INCREMENT. (IRELD) = 1
 EQ.0 ABSOLUTE EUCLIDEAN
 EQ.1 RELATIVE EUCLIDEAN
 CONVERGENCE PARAMETER (RESIDUAL) (EPSLNR)= 1.000E-02
 CONVERGENCE PARAMETER (INCREMENT) (EPSLND)= 1.000E-02
 STREAM LINE UPWIND PARAMETER. (SLUP)= 1.000E+00

*** Load Curve Control Data

For Load Curve Number 1		
Time Interval No.	Starting Load Factor	Ending Load Factor
1	0.0000000	1.0000000
1	1.0000000	1.0000000

**** Nodal coordinate data printing suppressed

*** Gravity or constant body/mass load control data

IMASCO	: Gravity or constant acceleration load case number
DIR	: Gravity/acceleration direction index
	EQ.1 : gravity/acceleration in x direction only
	EQ.2 : gravity/acceleration in y direction only
	EQ.3 : gravity/acceleration in z direction only
	EQ.7 : gravity/acceleration in vector direction (x,y,z)
L-Curve	: Load curve number
M-Factor	: Load curve multiplier
ACCELX	: gravity or acceleration in global X-direction
ACCELY	: gravity or acceleration in global Y-direction
ACCELZ	: gravity or acceleration in global Z-direction

IMASCO	DIR	L-Curve	M-Factor	ACCELX	ACCELY	ACCELZ
1	3	1	9.8146E+00	0.0000E+00	0.0000E+00	-1.0000E+00

**** Initial conditions for nodal velocities

Node number	DOF1	DOF2	DOF3	DOF4
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**** Element node number and body force data printing suppressed

** Element load data

Element Number	Load Face Number	Load Dir. index	X Component	Y Component	Z Component
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**** Nodal boundary condition codes printing suppressed.

**** Prescribed nodal velocities/forces

Node number	DOF1	DOF2	DOF3	DOF4
**** Segregated Scheme Data				
Select segregated scheme	=	T		
Solver for momentum equations	=	Automatic		
Solver for pressure equations	=	Automatic		
Velocity relaxation factor	=	7.000E-01		
Pressure relaxation factor	=	5.000E-01		
Inertial relaxation factor	=	1.000E+00		
Apply automatic adaptive parameter control	=	T		
ID of Detect stagnation due to oscillation	=	1		
 The number of equations (U).....	=	37343		
The number of equations (V).....	=	37343		
The number of equations (W).....	=	37343		
The number of equations (P).....	=	48367		
 **** Turbulence Model Data.....	=	Off		
**** Proceeding with Equal-Order Segregated Method				
**** Iterative Solver Control Information				
Global Solver Index	=	7		
Iterative Solver Selection	=	1		
EQ.1 PBiCGStab				
EQ.2 PGMRES				
EQ.3 PBiCG				
EQ.4 PCGS				
Pre-Conditioner Selection	=	1		
EQ.1 ILU(0)				
EQ.2 SSOR				
EQ.3 JACOBI				
 >>>>> For multi time step interval #	1	<<<<<<		
Time step number = 1				
**** Warning: Quit for zero loading !				
Please check model parameters and try again.				
**** Input model = [G:\faculty of engeenering\master\master valve noise\valve noise pracictal\valvel fins.ds_data\1\ds]				
**** Total elapsed time =	3.3642	(minutes)		