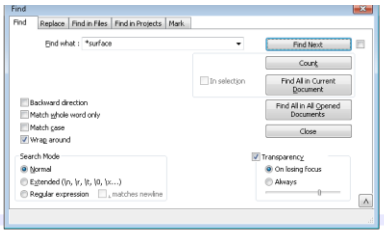
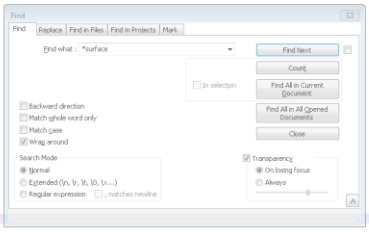
In input file :

For surface interaction:

```
 96151,  96175,  96176,  96200,  96201,  96225,  96226,  96227,  96228,  96229,  9623O,  96231,  96232,  96233,  96234,  96235
 96236,  96237,  96238,  96239,  96240,  96241,  96242,  96243,  96244,  96245,  96246,  96247,  96248,  96249,  96250,  99023
 99024,  99032,  99047,  99061,  99074,  99084,  99085,  99096,  99130,  99131,  99154,  99161,  99163,  99165,  99166,  99167
 99168,  99176,  99185,  99193,  99201,  99202,  99210,  99426,  99547,  99548,  99549,  99550,  99552,  99554,  99556,  99557
 99559,  99560,  99561,  99563,  99564,  99566,  99567,  99569,  99570,  99575,  99576,  99577,  99578,  99580,  99581,  99603
 99606,  99608,  99610,  99611,  99612,  99614,  99616,  99618,  99620,  99622,  99625,  99627,  99629,  99633,  99635,  99636
 99639,  99645,  99647,  99649,  99653,  99655,  99664,  99666,  99668,  99669,  220471, 220472, 220480, 220495, 220509, 220522
220532, 220533, 220544, 220578, 220579, 220602, 220609, 220611, 220613, 220614, 220615, 220616, 220624, 220633, 220641, 220649
220650, 220658, 220874, 220995, 220996, 220997, 220998, 221000, 221002, 221004, 221005, 221007, 221008, 221009, 221011, 221012
221014, 221015, 221017, 221018, 221023, 221024, 221025, 221026, 221028, 221029, 221051, 221054, 221056, 221058, 221059, 221060
221062, 221064, 221066, 221068, 221070, 221073, 221075, 221077, 221081, 221083, 221084, 221087, 221093, 221095, 221097, 221101
221103, 221112, 221114, 221116, 221117
*Nset, nset=_PickedSet46, internal, generate
     1,  230412,     1
*Elset, elset=_PickedSet46, internal, generate
     1,  222068,     1
*Elset, elset=ERODE, generate
     1,  222068,     1
*Elset, elset=_InteriorSurf_S2, internal, generate
     1,  1250,     1
*Surface, type=ELEMENT, name=InteriorSurf
 InteriorSurf_S2, S2
** Region: (Section-al_WP:Picked), (Controls:EC-2)
*Elset, elset=_I1, internal
     1,     2,     3,     4,     5,     6,     7,     8,     9,    10,    11,    12,    13,    14,    15,    16
    17,    18,    19,    20,    21,    22,    23,    24,    25,    26,    27,    28,    29,    30,    31,    32
    33,    34,    35,    36,    37,    38,    39,    40,    41,    42,    43,    44,    45,    46,    47,    48
    49,    50,    51,    52,    53,    54,    55,    56,    57,    58,    59,    60,    61,    62,    63,    64
    65,    66,    67,    68,    69,    70,    71,    72,    73,    74,    75,    76,    77,    78,    79,    80
    81,    82,    83,    84,    85,    86,    87,    88,    89,    90,    91,    92,    93,    94,    95,    96
    97,    98,    99,   100,   101,   102,   103,   104,   105,   106,   107,   108,   109,   110,   111,   112
   113,   114,   115,   116,   117,   118,   119,   120,   121,   122,   123,   124,   125,   126,   127,   128
   129,   130,   131,   132,   133,   134,   135,   136,   137,   138,   139,   140,   141,   142,   143,   144
   145,   146,   147,   148,   149,   150,   151,   152,   153,   154,   155,   156,   157,   158,   159,   160
   161,   162,   163,   164,   165,   166,   167,   168,   169,   170,   171,   172,   173,   174,   175,   176
   177,   178,   179,   180,   181,   182,   183,   184,   185,   186,   187,   188,   189,   190,   191,   192
   193,   194,   195,   196,   197,   198,   199,   200,   201,   202,   203,   204,   205,   206,   207,   208
   209,   210,   211,   212,   213,   214,   215,   216,   217,   218,   219,   220,   221,   222,   223,   224
   225,   226,   227,   228,   229,   230,   231,   232,   233,   234,   235,   236,   237,   238,   239,   240
   241,   242,   243,   244,   245,   246,   247,   248,   249,   250,   251,   252,   253,   254,   255,   256
   257,   258,   259,   260,   261,   262,   263,   264,   265,   266,   267,   268,   269,   270,   271,   272
```

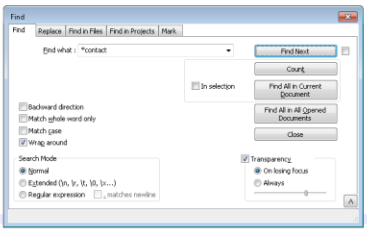


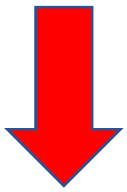
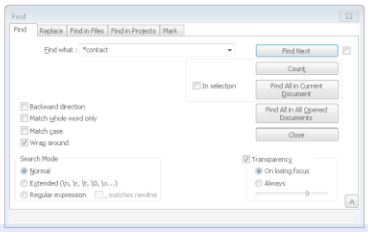



```
 95351,  95375,  95376,  95400,  95401,  95425,  95426,  95450,  95451,  95475,  95476,  95500,  95501,  95525,  95526,  95550
 95551,  95575,  95576,  95600,  95601,  95625,  95626,  95650,  95651,  95675,  95676,  95700,  95701,  95725,  95726,  95750
 95751,  95775,  95776,  95800,  95801,  95825,  95826,  95850,  95851,  95875,  95876,  95900,  95901,  95925,  95926,  95950
 95951,  95975,  95976,  96000,  96001,  96025,  96026,  96050,  96051,  96075,  96076,  96100,  96101,  96125,  96126,  96150
 96151,  96175,  96176,  96200,  96201,  96225,  96226,  96227,  96228,  96229,  96230,  96231,  96232,  96233,  96234,  96235
 96236,  96237,  96238,  96239,  96240,  96241,  96242,  96243,  96244,  96245,  96246,  96247,  96248,  96249,  96250,  99023
 99024,  99032,  99047,  99061,  99074,  99084,  99085,  99096,  99130,  99131,  99154,  99161,  99163,  99165,  99166,  99167
 99168,  99176,  99185,  99193,  99201,  99202,  99210,  99426,  99547,  99548,  99549,  99550,  99552,  99554,  99556,  99557
 99559,  99560,  99561,  99563,  99564,  99566,  99567,  99569,  99570,  99575,  99576,  99577,  99578,  99580,  99581,  99603
 99606,  99608,  99610,  99611,  99612,  99614,  99616,  99618,  99620,  99622,  99625,  99627,  99629,  99633,  99635,  99636
 99639,  99645,  99647,  99649,  99653,  99655,  99664,  99666,  99668,  99669,  220471, 220472, 220480, 220495, 220509, 220522
220532, 220533, 220544, 220578, 220579, 220602, 220609, 220611, 220613, 220614, 220615, 220616, 220624, 220633, 220641, 220649
220650, 220658, 220874, 220995, 220996, 220997, 220998, 221000, 221002, 221004, 221005, 221007, 221008, 221009, 221011, 221012
221014, 221015, 221017, 221018, 221023, 221024, 221025, 221026, 221028, 221029, 221051, 221054, 221056, 221058, 221059, 221060
221062, 221064, 221066, 221068, 221070, 221073, 221075, 221077, 221081, 221083, 221084, 221087, 221093, 221095, 221097, 221101
221103, 221112, 221114, 221116, 221117
*Nset, nset=_PickedSet46, internal, generate
     1,  230412,     1
*Elset, elset=_PickedSet46, internal, generate
     1,  222068,     1
*Elset, elset=ERODE, generate
     1,  222068,     1
*Elset, elset=_InteriorSurf_S2, internal, generate
     1,  1250,     1
*Surface, type=ELEMENT, name=InteriorSurf
,
ERODE, INTERIOR
** Region: (Section-al_WP:Picked), (Controls:EC-2)
*Elset, elset=_I1, internal
     1,     2,     3,     4,     5,     6,     7,     8,     9,    10,    11,    12,    13,    14,    15,    16
    17,    18,    19,    20,    21,    22,    23,    24,    25,    26,    27,    28,    29,    30,    31,    32
    33,    34,    35,    36,    37,    38,    39,    40,    41,    42,    43,    44,    45,    46,    47,    48
    49,    50,    51,    52,    53,    54,    55,    56,    57,    58,    59,    60,    61,    62,    63,    64
    65,    66,    67,    68,    69,    70,    71,    72,    73,    74,    75,    76,    77,    78,    79,    80
    81,    82,    83,    84,    85,    86,    87,    88,    89,    90,    91,    92,    93,    94,    95,    96
    97,    98,    99,   100,   101,   102,   103,   104,   105,   106,   107,   108,   109,   110,   111,   112
   113,   114,   115,   116,   117,   118,   119,   120,   121,   122,   123,   124,   125,   126,   127,   128
   129,   130,   131,   132,   133,   134,   135,   136,   137,   138,   139,   140,   141,   142,   143,   144
   145,   146,   147,   148,   149,   150,   151,   152,   153,   154,   155,   156,   157,   158,   159,   160
   161,   162,   163,   164,   165,   166,   167,   168,   169,   170,   171,   172,   173,   174,   175,   176
   177,   178,   179,   180,   181,   182,   183,   184,   185,   186,   187,   188,   189,   190,   191,   192
   193,   194,   195,   196,   197,   198,   199,   200,   201,   202,   203,   204,   205,   206,   207,   208
   209,   210,   211,   212,   213,   214,   215,   216,   217,   218,   219,   220,   221,   222,   223,   224
   225,   226,   227,   228,   229,   230,   231,   232,   233,   234,   235,   236,   237,   238,   239,   240
   241,   242,   243,   244,   245,   246,   247,   248,   249,   250,   251,   252,   253,   254,   255,   256
```

For contact:

```
** ----------------------------------------------------------------
**
** STEP: Step-1
**
*Step, name=Step-1, nlgeom=YES
*Dynamic Temperature-displacement, Explicit
, 6e-05,, 1e-06
*Bulk Viscosity
0.06, 1.2
**
** BOUNDARY CONDITIONS
**
** Name: Velocity Type: Velocity/Angular velocity
*Boundary, type=VELOCITY
Set-17, 3, 3, 100.
** Name: WTtemp Type: Temperature
*Boundary
_PickedSet15, 11, 11, 293.
** Name: WTtemp Type: Temperature
*Boundary
_PickedSet33, 11, 11, 293.
*Adaptive Mesh Controls, name=Ada-1
1., 0., 0.
*Adaptive Mesh, elset=_PickedSet34, controls=Ada-1, frequency=1, initial mesh sweeps=10, mesh sweeps=10, op=NEW
**
** INTERACTIONS
**
** Interaction: Int-1
*Contact, op=NEW
*Contact Inclusions, ALL EXTERIOR
*Contact Property Assignment
 ,  , IntProp-1
**
** OUTPUT REQUESTS
**
*Restart, write, number interval=1, time marks=NO
**
** FIELD OUTPUT: F-Output-1
**
*Output, field, time points=TimePoints-1
*Mode Output
RF, U
*Element Output, directions=YES
```





```
*Initial Conditions, type=TEMPERATURE
_PickedSet19, 293.
** ----------------------------------------------------------------
**
** STEP: Step-1
**
*Step, name=Step-1, nlgeom=YES
*Dynamic Temperature-displacement, Explicit
, 6e-05,, 1e-06
*Bulk Viscosity
0.06, 1.2
**
** BOUNDARY CONDITIONS
**
** Name: Velocity Type: Velocity/Angular velocity
*Boundary, type=VELOCITY
Set-17, 3, 3, 100.
** Name: WTtemp Type: Temperature
*Boundary
_PickedSet15, 11, 11, 293.
** Name: WTtemp Type: Temperature
*Boundary
_PickedSet33, 11, 11, 293.
*Adaptive Mesh Controls, name=Ada-1
1., 0., 0.
*Adaptive Mesh, elset=_PickedSet34, controls=Ada-1, frequency=1, initial mesh sweeps=10, mesh sweeps=10, op=NEW
**
** INTERACTIONS
**
** Interaction: Int-1
*Contact, op=NEW
*Contact Inclusions
Workpiece-1.InteriorSurf,DefCutTool-1.ToolEngagingSurf
Workpiece-1.InteriorSurf,Workpiece-1.InteriorSurf
*Contact Property Assignment
 ,  , IntProp-1
**
** OUTPUT REQUESTS
**
*Restart, write, number interval=1, time marks=NO
**
** FIELD OUTPUT: F-Output-1
```