

Weld Circular

GA CAE Model Builder

Create Connections

DogHouse	Weld (Circ)	Locator
DogHouse Ext	Weld (Ribs)	Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R	7.5	C2-R	7.5	C3-R	7.5
C1-T	2.5	C2-T	2.5	C3-T	2.5

Select Options For Connector

EI Type: Rigid

Con Type: Joint Type

Tol DH: 7.5

Patch Tr: 2

J Length: 0.2

☐ Joint On Slave

Patch R: 12.2

☐ Patch all

Tol Ribs: 20

☐ Nodal Thick

☐ Comp Create

Piv Angle: 31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

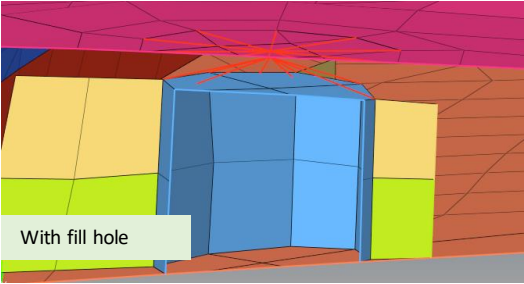
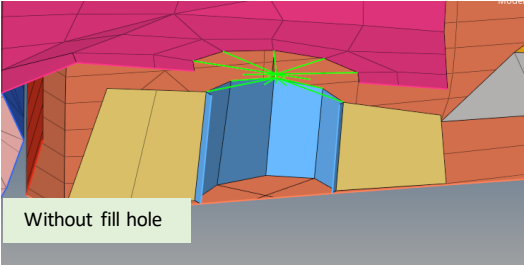
Logs Tab

Supplier

Password

Path

Convert



Select fill hole to fill the holes.
Shown on the left is a dyna model with and without Fill hole option.

Selection Mechanism

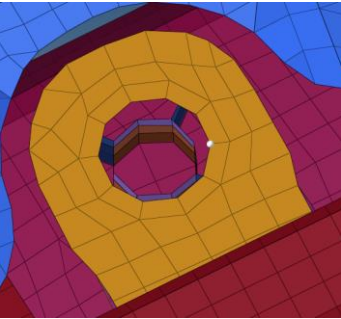
▼

nodes

⏮

⏭

proceed



Always select one node from the curvature of the top surface of the weld.

Enter joint Comp Name

Enter joint Comp Id

Enter a component name for joint .
Enter a component ID for joint component leave an interval of 10 from previous ID(interval 10)

GA CAE Model Builder

Create Connections

DogHouse	Weld (Circ)	Locator
DogHouse Ext	Weld (Ribs)	Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R	7.5	C2-R	7.5	C3-R	7.5
C1-T	2.5	C2-T	2.5	C3-T	2.5

Select Options For Connector

EI Type: Rigid

Con Type: Joint Type

Tol DH: 7.5

Patch Tr: 2

J Length: 0.2

☐ Joint On Slave

Patch R: 12.2

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Tol Ribs: 20

☐ Nodal Thick

☐ Comp Create

Piv Angle: 31

☐ Slot DG

☒ Patch-ABDYN

Helper Tools

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Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

Logs Tab

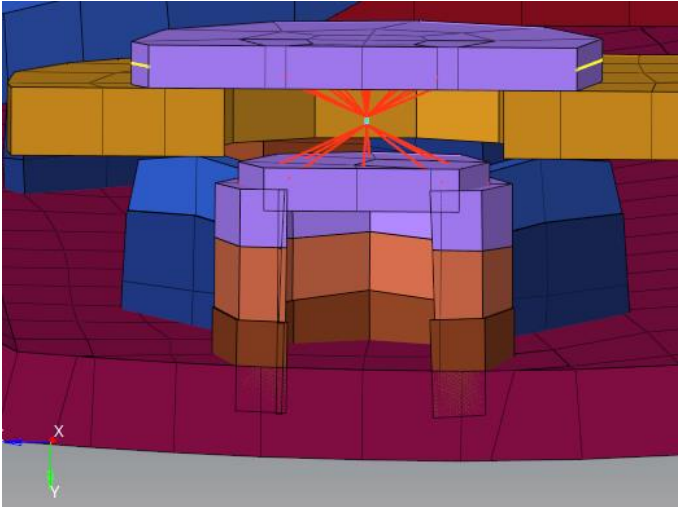
Supplier

Password

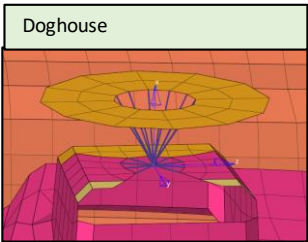
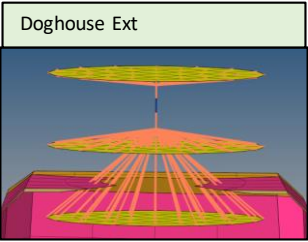
Path

Convert

A patch is default for Pamcrash solver profile.
If Patches are required for Abaqus and Dyna profiles ,
Please select Patch-ABDYN tickbox.

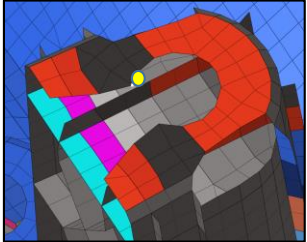


Doghouse



Selection Mechanism

Always select one node from the inner curvature at the top surface of the Doghouse.



GA CAE Model Builder

Create Connections

DogHouse	Weld (Circ)	Locator
DogHouse Ext	Weld (Ribs)	Clip

☐ Face Normal ☐ Fill Hole ☐ DH Dir

C1-R 7.5	C2-R 7.5	C3-R 7.5
C1-T 2.5	C2-T 2.5	C3-T 2.5

Select Options For Connector

El Type: Con Type: Tol DH | 7.5

Patch Tr | 2 J Length | 0.2 ☐ Joint On Slave

Patch R | 12.2 ☐ Patch all Tol Ribs | 20

☐ Nodal Thick ☐ Comp Create Piv Angle | 31

☐ Slot DG ☐ Patch-ABDYN

Helper Tools

Synctool	Points Gen	Entity Search
Measure Any	Group Rigids	

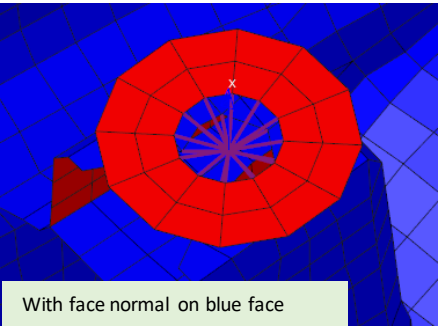
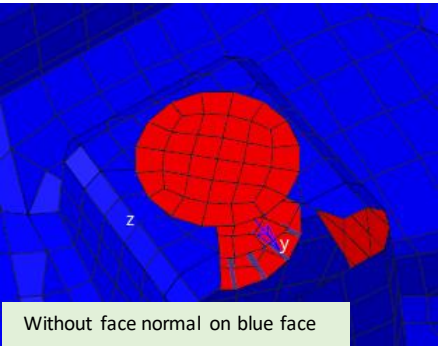
Loadcase Automations

Point Select	Generate	Checks
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Logs Tab

Supplier | Password | Path |

Select fill hole to fill the holes.
Shown on the left is a dyna model with and without Fill hole option.



The patches will be along the normal of The elements for Doghouses .Tick the Face normal checkbox to take control Of the direction.

GA CAE Model Builder

Create Connections

DogHouse	Weld (Circ)	Locator
DogHouse Ext	Weld (Ribs)	Clip

☐ Face Normal ☐ Fill Hole ☐ DH Dir

C1-R 7.5	C2-R 7.5	C3-R 7.5
C1-T 2.5	C2-T 2.5	C3-T 2.5

Select Options For Connector

El Type: Con Type: Tol DH | 7.5

Patch Tr | 2 J Length | 0.2 ☒ Joint On Slave

Patch R | 12.2 ☐ Patch all Tol Ribs | 20

☐ Nodal Thick ☐ Comp Create Piv Angle | 31

☐ Slot DG ☐ Patch-ABDYN

Helper Tools

Synctool	Points Gen	Entity Search
Measure Any	Group Rigids	

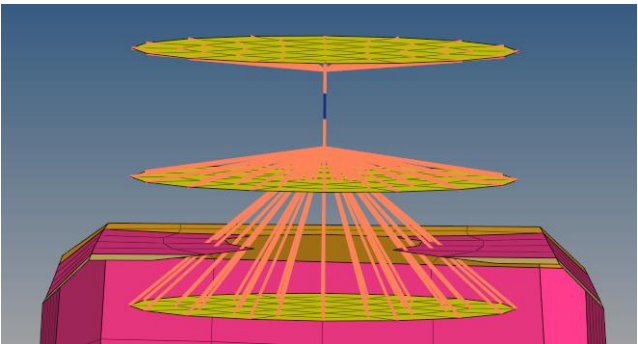
Loadcase Automations

Point Select	Generate	Checks
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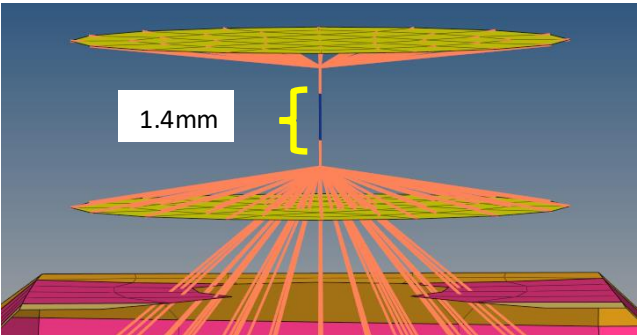
Logs Tab

Supplier | Password | Path |

Type in the final joint length required to override the default values.



Select joint on slave to creates special type of rigid connection. An extended slave branch that connects with joint.



Doghouse (Continued)

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: RIGIDS

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

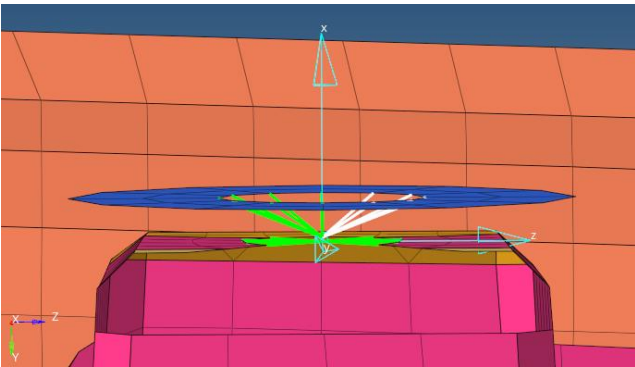
Logs Tab

Supplier

PassWord

Path

Convert



Change El Types from rigids to beams to change type of connection. Default is rigids for all solvers.

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: RIGIDS

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

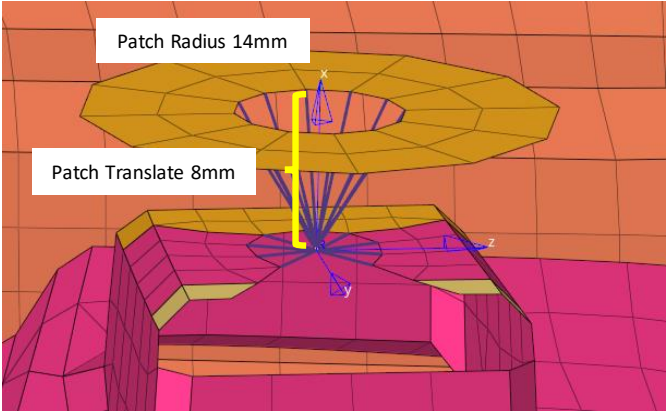
Logs Tab

Supplier

PassWord

Path

Convert



Input the Patch radius and Patch translate values for defining the patch translation values and Patch radius values.

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: RIGIDS

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☒ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

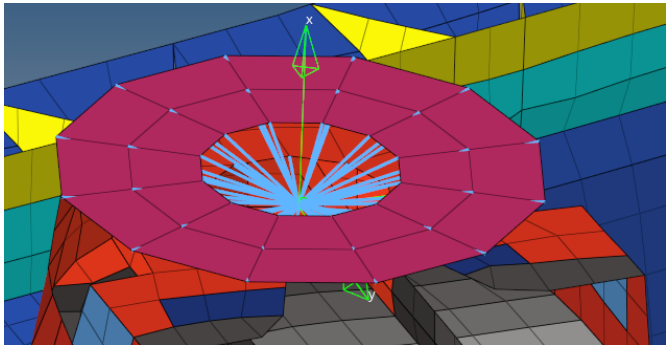
Logs Tab

Supplier

PassWord

Path

Convert



Tick patch all to connect all nodes of the patch to rigid body .
By default , only the inner edge nodes of the patch are connected to rigid body.

Doghouse (Continued)

GA CAE Model Builder

Create Connections

DogHouse

DogHouse Ext

Face Normal

C1-R7.5

C1-T2.5

Weld (Circ)

Weld (Ribs)

Fill Hole

C2-R7.5

C2-T2.5

Locator

Clip

DH Dir

C3-R7.5

C3-T2.5

Select Options For Connector

El Type: Rigid

Con Type: Joint Type

Tol DH: 7.5

Patch Tr: 2

J Length: 0.2

Joint On Slave

Patch R: 12.2

Patch all

Tol Ribs: 20

Nodal Thick

Comp Create

Piv Angle: 31

Slot DG

PatchABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

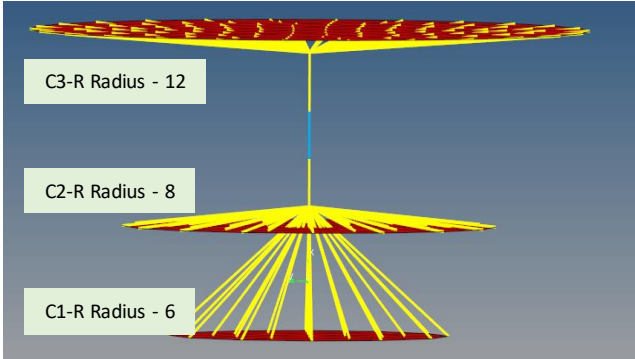
Logs Tab

Supplier

Password

Path

Convert



Option to specify Dia and Thickness for the patch.
For Pamcrash nodal thickness is defined.
For other solvers-at the moment 1mm constant thickness

GA CAE Model Builder

Create Connections

DogHouse

DogHouse Ext

Face Normal

C1-R7.5

C1-T2.5

Weld (Circ)

Weld (Ribs)

Fill Hole

C2-R7.5

C2-T2.5

Locator

Clip

DH Dir

C3-R7.5

C3-T2.5

Select Options For Connector

El Type: Rigid

Con Type: Joint Type

Tol DH: 7.5

Patch Tr: 2

J Length: 0.2

Joint On Slave

Patch R: 12.2

Patch all

Tol Ribs: 20

Nodal Thick

Comp Create

Piv Angle: 31

Slot DG

PatchABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigids

Loadcase Automations

Point Select

Generate

Checks

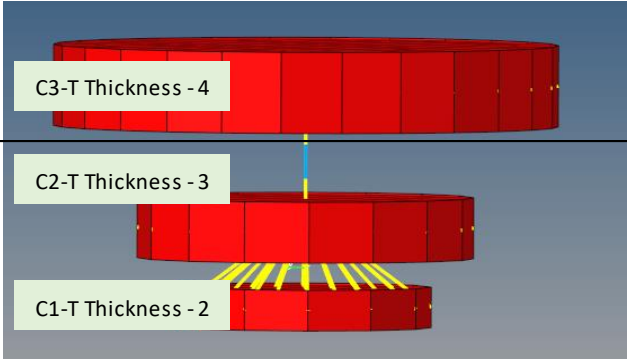
Logs Tab

Supplier

Password

Path

Convert



Input the Patch radius and Patch translate values for defining the patch translation values and Patch radius values.

Selection Mechanism

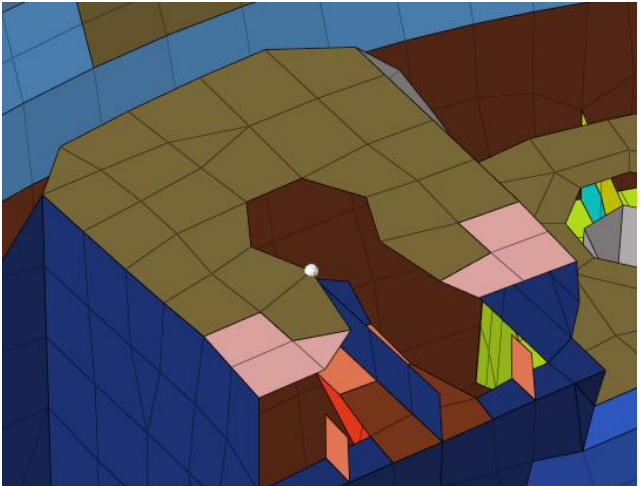
▼ nodes

proceed

Enter joint Comp Name

Enter joint Comp Id

Enter a component name for joint .
Enter a component ID for joint component leave an interval of 10 from previous ID(interval 10)



Weld Ribs

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: RIGIDS

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group RIGIDS

Loadcase Automations

Point Select

Generate

Checks

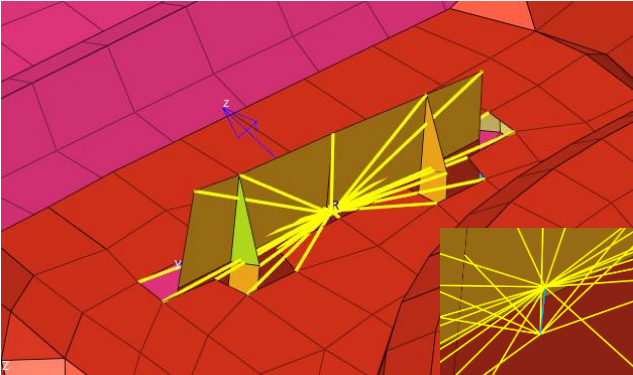
Logs Tab

Supplier

PassWord

Path

Convert



Select Weld ribs to create weld rib modelling.

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: RIGIDS

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group RIGIDS

Loadcase Automations

Point Select

Generate

Checks

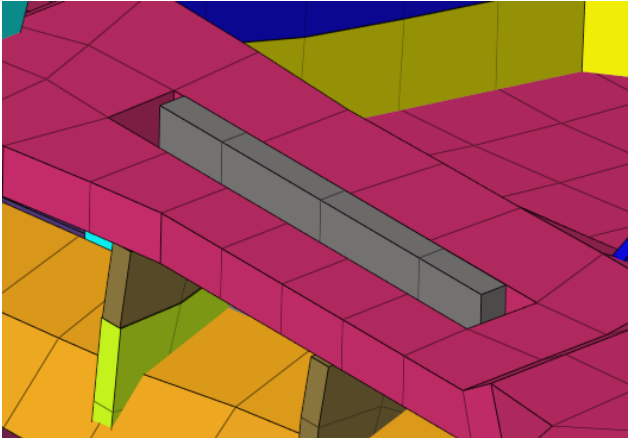
Logs Tab

Supplier

PassWord

Path

Convert



Use Face normal and Tolerance input boxes to control the direction and distance of nodes that needs to be added to the rigids or beams group.

Selection Mechanism

▼

nodes

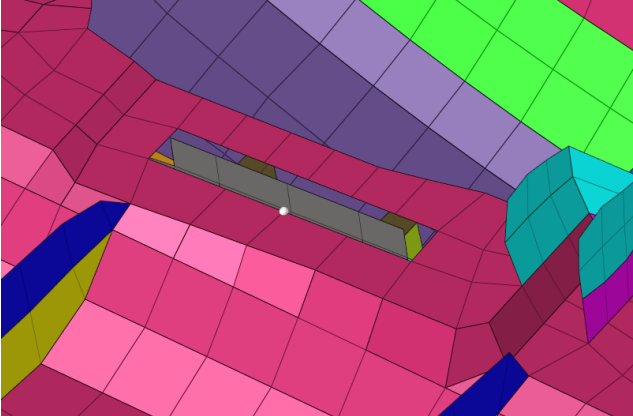
⏪

proceed

Enter joint Comp Name

Enter joint Comp Id

Enter a component name for joint .
Enter a component ID for joint component leave an interval of 10 from previous ID(interval 10)



Locator

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☐ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: Rigid

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

Helper Tools

Synctool

Points Gen

Entity Search

Measure Any

Group Rigid

Loadcase Automations

Point Select

Generate

Checks

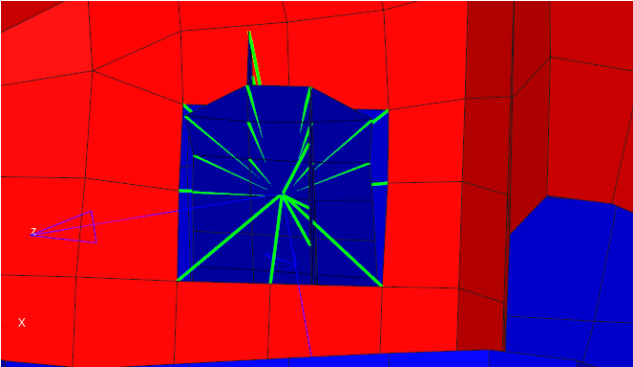
Logs Tab

Supplier

PassWord

Path

Convert



Select locator create locator connections.
Tick the face normal if the normal of element of node selected is positive (Red) .

GA CAE Model Builder

Create Connections

DogHouse

Weld (Circ)

Locator

DogHouse Ext

Weld (Ribs)

Clip

☒ Face Normal

☐ Fill Hole

☐ DH Dir

C1-R7.5

C2-R7.5

C3-R7.5

C1-T2.5

C2-T2.5

C3-T2.5

Select Options For Connector

El Type: Rigid

Con Type: Joint Type

Tol DH7.5

Patch Tr2

J Length0.2

☐ Joint On Slave

Patch R12.2

☐ Patch all

Tol Ribs20

☐ Nodal Thick

☐ Comp Create

Piv Angle31

☐ Slot DG

☐ Patch-ABDYN

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Entity Search

Measure Any

Group Rigid

Loadcase Automations

Point Select

Generate

Checks

Logs Tab

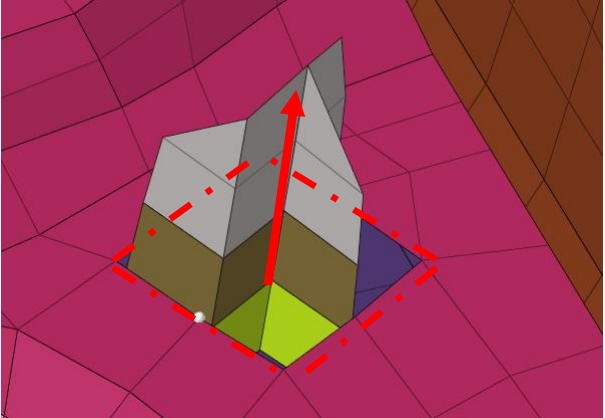
Supplier

PassWord

Path

Convert

Use Face normal and Tolerance input boxes to control the direction and distance of nodes that needs to be added to the rigids or beams group.



Selection Mechanism

nodes

proceed

Enter joint Comp Name

Enter joint Comp Id

Enter a component name for joint .
Enter a component ID for joint component leave an interval of 10 from previous ID(interval 10)

