
Operator DEFI_OBSTACLE

1 Drank

To define the geometry of the places of shocks of a telegraphic structure. These places are defined in a plane perpendicular to structure modelled by beams `POU_D_T` and `POU_D_E`. It is then used by `DYNA_TRAN_MODAL` [U4.53.21] for the study of the response of a structure whose displacements are limited by the presence of this obstacle. One can also define the initial section of a structure which one will study progressive wear. In this last case, the concept will be used by `MODI_OBSTACLE` [U4.44.22].

Product a concept of the `table_fonction` type.

2 Syntax

```
obstacle = DEFI_OBSTACLE
            ( ♦/TYPE      =          "CERCLE",
            [DEFAULT]
            / "PLAN_Y",
            / "PLAN_Z",
            / "BI_CERCLE",
            / "BI_CERC_INT",
            / "BI_PLAN_Y",
            / "BI_PLAN_Z",
            / "DISCRETE",
            / "CRAYON_900",
            / "CRAYON_1300",
            / "GUID_A_CARTE_900",
            / "GUID_A_GCONT_900",
            / "GUID_A_GCOMB_900",
            / "GUID_B_CARTE_900",
            / "GUID_B_GCONT_900",
            / "GUID_B_GCOMB_900",
            / "GUID_C_CARTE_900",
            / "GUID_C_GCONT_900",
            / "GUID_C_GCOMB_900",
            / "GUID_D_CARTE_900",
            / "GUID_D_GCONT_900",
            / "GUID_D_GCOMB_900",
            / "GUID_E_CARTE_900",
            / "GUID_E_GCONT_900",
            / "GUID_E_GCOMB_900",
            / "GUID_F_CARTE_900",
            / "GUID_F_GCONT_900",
            / "GUID_F_GCOMB_900",
            / "GUID_A_CARSP_900",
            / "GUID_B_CARSP_900",
            / "GUID_C_CARSP_900",
            / "GUID_D_CARSP_900",
            / "GUID_E_CARSP_900",
            / "GUID_F_CARSP_900",
            / "GUID_A_CARTE_1300",
            / "GUID_A_GCONT_1300",
            / "GUID_A_GCOMB_1300",
            / "GUID_B_CARTE_1300",
            / "GUID_B_GCONT_1300",
            / "GUID_B_GCOMB_1300",
            / "GUID_C_CARTE_1300",
            / "GUID_C_GCONT_1300",
            / "GUID_C_GCOMB_1300",
            / "GUID_D_CARTE_1300",
            / "GUID_D_GCONT_1300",
            / "GUID_D_GCOMB_1300",
            / "GUID_E_CARTE_1300",
            / "GUID_E_GCONT_1300",
            / "GUID_E_GCOMB_1300",
            / "GUID_F_CARTE_1300",
            / "GUID_F_GCONT_1300",
            / "GUID_F_GCOMB_1300",
            / "GUID_A_CARSP_1300",
            / "GUID_B_CARSP_1300",
            / "GUID_C_CARSP_1300",
            / "GUID_D_CARSP_1300",
            / "GUID_E_CARSP_1300",
            / "GUID_F_CARSP_1300",
            ♦ VALE=thetar ,
            ♦VERIF=' FERME',
            )
```

[1_R]

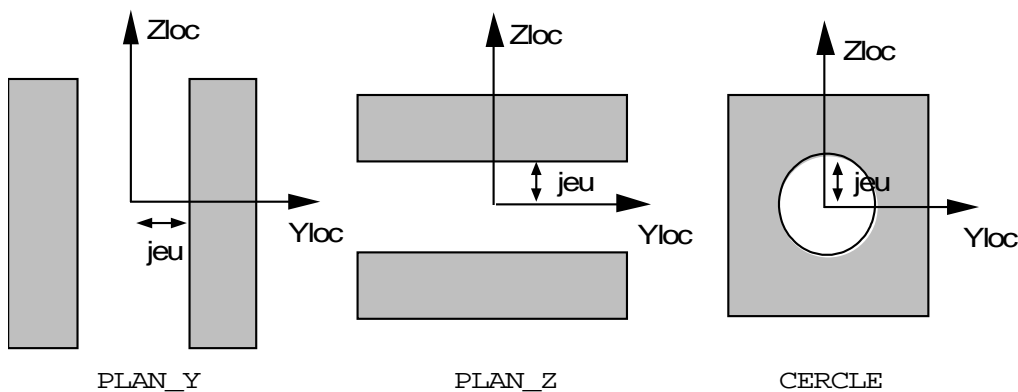
3 Operands

3.1 Operand TYPE

operand TYPE makes it possible to give:

- the form in the connection wraps clearance of shock by a text among the following: PLAN_Y, PLAN_Z, CERCLE, DISCRET, BI_PLAN_Y, BI_PLAN_Z, BI_CERCLE and BI_CERC_INT ;
- the initial section of structures such as pencils CRAYON_* and the guides GUID_*_*_* of control rods of the REFERENCE MARKS 900 and 1300 MW.

The obstacles of the type PLAN_Y, PLAN_Z, CERCLE and DISCRET define the geometry of the places of shock between a mobile structure and an indeformable obstacle. They are traced Ci - below [Figure 3.1-a] according to the selected type.

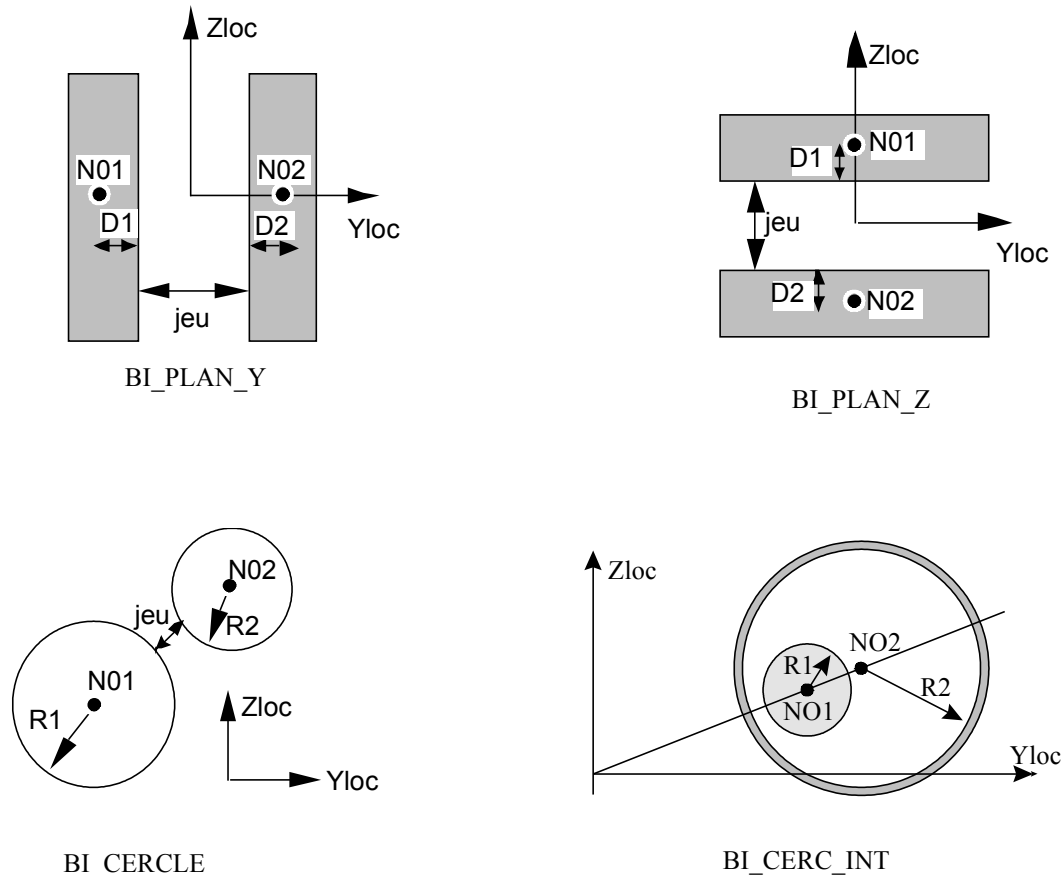


Appear 3.1-the

value of clearance and the local coordinate system (Xloc, Yloc, Zloc) will be defined at the time of the use of the obstacle (see operator DYNATRAN_MODAL [U4.53.21]). The origin of this reference being the place of telegraphic structure considered.

In the case of the obstacle TYPE = "DISCRETE", it is necessary to specify the curve defining contour and clearance simultaneously, using the key word VALE.

Types BI_PLAN_Y, BI_PLAN_Z, BI_CERCLE and BI_CERC_INT make it possible to define the possible places of contact of telegraphic structure between two nodes NO1 and NO2 belonging each one to a mobile structure. The geometries of connections of plane contact on plane (or rings on circle) are described on the figure [Figure 3.1-b] below.



Appear 3.1-b

the value of the thickness of matter surrounding the nodes of shock (D1 and D2 for an obstacle of the type BI_PLAN_*, R1 and R2 for an obstacle of the type BI_CERCLE or BI_CERC_INT) as well as the local coordinate system (Xloc, Yloc, Zloc) are defined at the time of the use of the obstacle, it is - with-to say in operator DYNA_TRAN_MODAL [U4.53.21].

Several initial forms, in particular for the study of vibrations of the control rods, are defined. They correspond with the pencil of the various control rods and to their guidance.

Operand `TYPE` then makes it possible to define the geometry of a pencil of control rod nine of type `REFERENCE MARK 900MW`: "CRAYON_900" or of type `REP1300MW`: "CRAYON_1300"; and that of the various parts of a guidance of cluster nine: type starting with `GUID` (`GUID_*_*_*`). The three indications which follow `GUID` respectively make it possible to define:

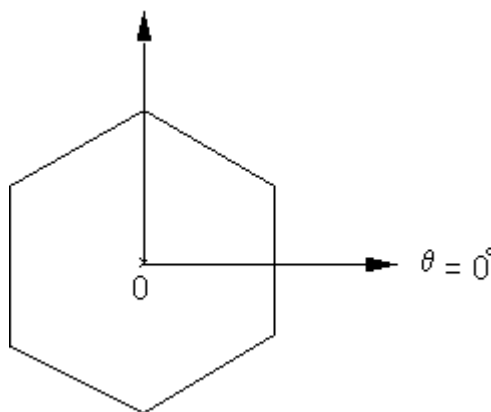
- the type of pencil of cluster - of A with F - which is inside (the channel of guidance is different for each type of pencil);
- the part of the guidance to which the obstacle belongs: `CARD` if discontinuous guidance; `GCONT` if continuous guidance; `GCOMB` if guidance combustible; `CARSP` if card with increased clearance;
- and the type of engine: `900` if `REFERENCE MARK 900MW` or `1300` if `REFERENCE MARK 1300MW`.

3.2 Operands `VALE` / `VERIF`

`◇VALE = thetar`

In the case of the `DISCRETE obstacle` the curve should be specified defining contour and clearance simultaneously, using the key word `VALE`.

`thetar` is the list of realities making it possible to describe the contour of the obstacle of the `DISCRETE type` in polar coordinates. One describes the obstacle like a plane curve into polar by giving couples of values, the first being the angle in degrees of 0 with 360°, the second the radius [Figure 3.2-a].



```
VALE= (
0.0,0.00086,30.0,0.001,90.0,
0.001,150.0
, 0.001,210.0
, 0.001,270.0
, 0.001,330.0
, 0.001,360.0
, 0.00086,)
```

Appears 3.2-a

`◇VERIF = "FERME"`

Key word making it possible to check if the curve given into polar is well closed.