Chapter 8

Convention Practice in Orthographic Writing

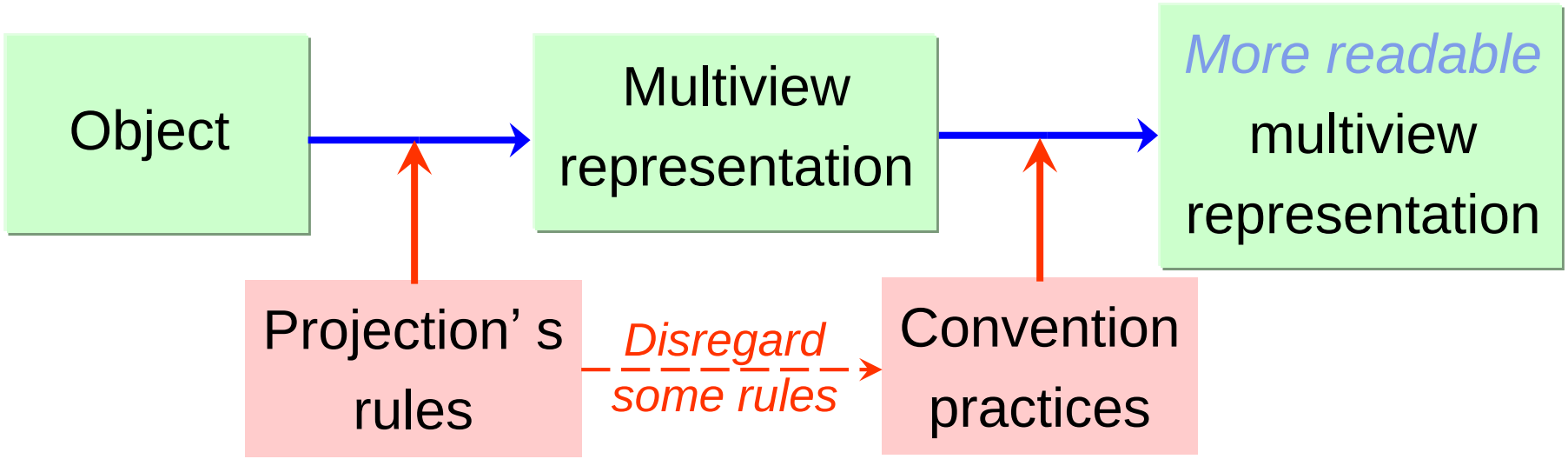


TOPICS

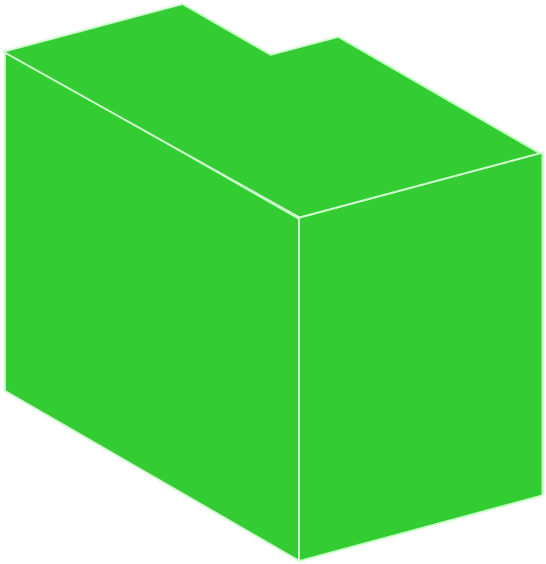
- Definition
- Purposes
- Types of conventions
  - Alternate position of side view
  - Incompleted view
  - Aligned view
  - Enlarged view
  - Non-existing intersection line
  - Cylinder intersection

DEFINITION

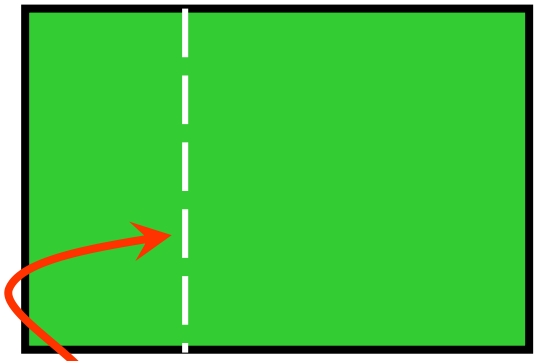
Convention is a *commonly accepted practices* which *disregard* some strict rules of orthographic projection.



EXAMPLE : Already met convention practice



Front view



Using a dash line for representing the hidden edge.

CONVENTION PRACTICE

PURPOSES

- To improve the clarity of a drawing.
- To facilitate the dimensioning.
- To reduce the drafting effort.
- To save or efficiently use a drawing space.

TYPES OF CONVENTION PRACTICE

1. Alternate position of side view

2. Incompleted view

    2.1 Incompleted side view

    2.2 Partial view

    2.3 Half view

    2.4 Local view

TYPES OF CONVENTION PRACTICE

3. Aligned view

4. Enlarged view

5. Non-existing intersection line

6. Intersection : Hole on a cylinder

ALTERNATE POSITION OF SIDE VIEW

ALTERNATE POSITION OF SIDE VIEW

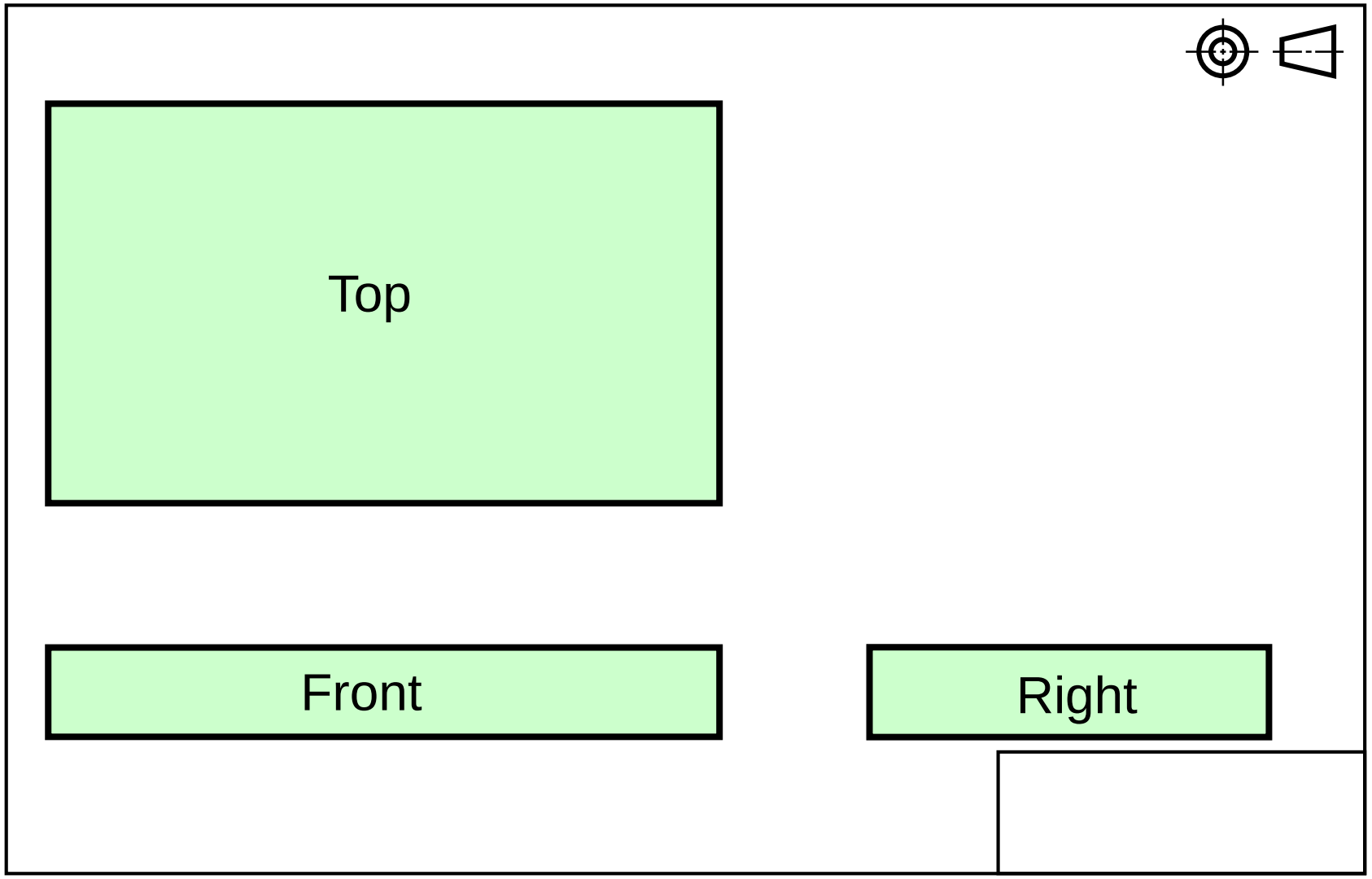
Purposes

- To save drawing space.
- To improve the clarity of a drawing.

Conventional practice

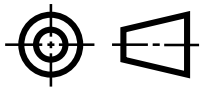
Whenever the *height* of an object is *small* and the *depth* is relatively *large*, places the side view beside the top view.

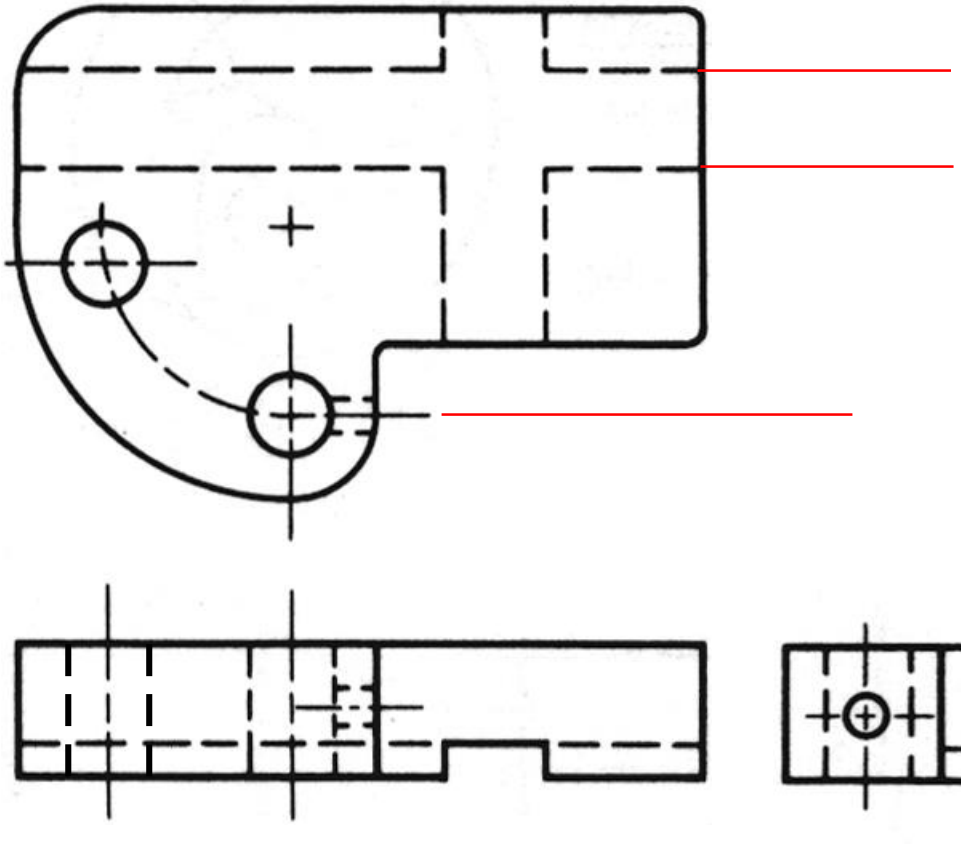
Example



Example

New orientation of views still agree with 3rd angle system.





Slot becomes more readable.

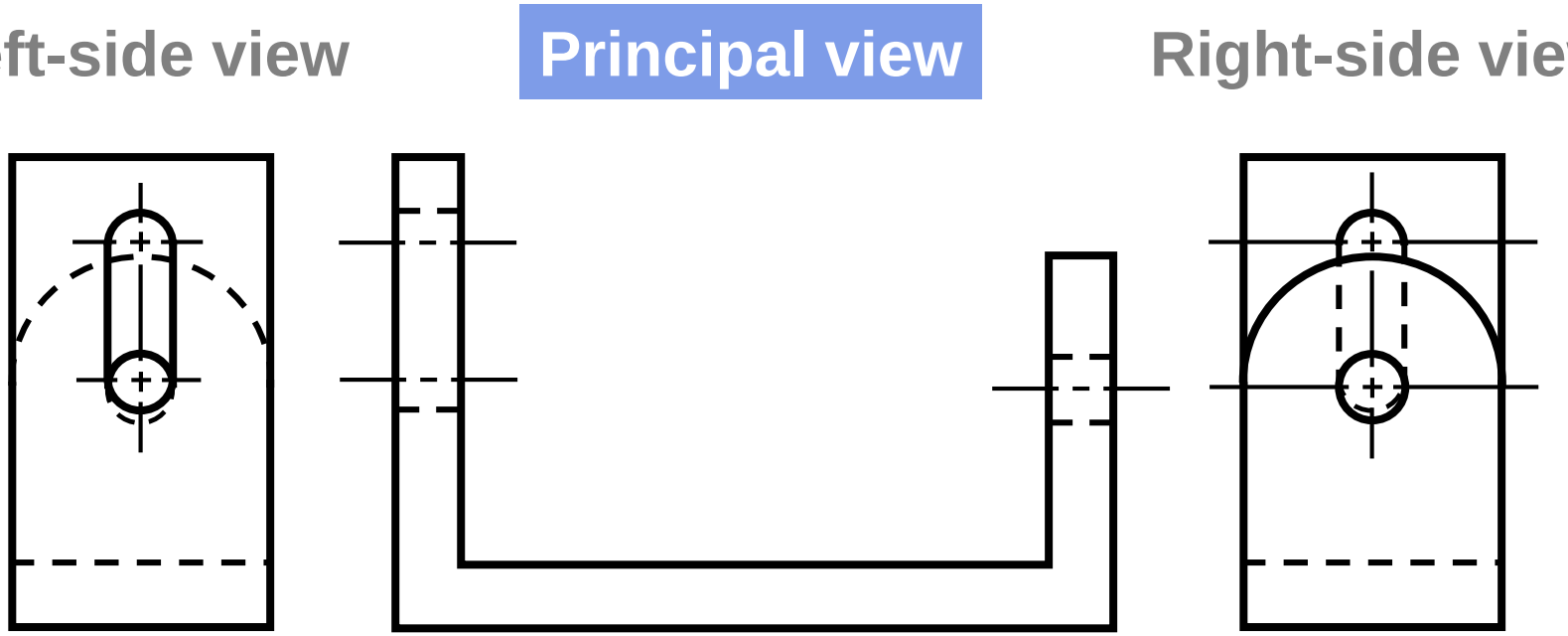
Hole becomes more readable.

INCOMPLETED SIDE VIEW

DEFINITION

- **Incompleted side views** are side views that are eliminated a feature that can not clearly seen from a selected viewing direction.

Example : Strictly orthographic projection.



Details are interfered by those on the opposite view.

Difficult to read and to dimension.

Example : Incompleted side views

Incompleted
left-side view

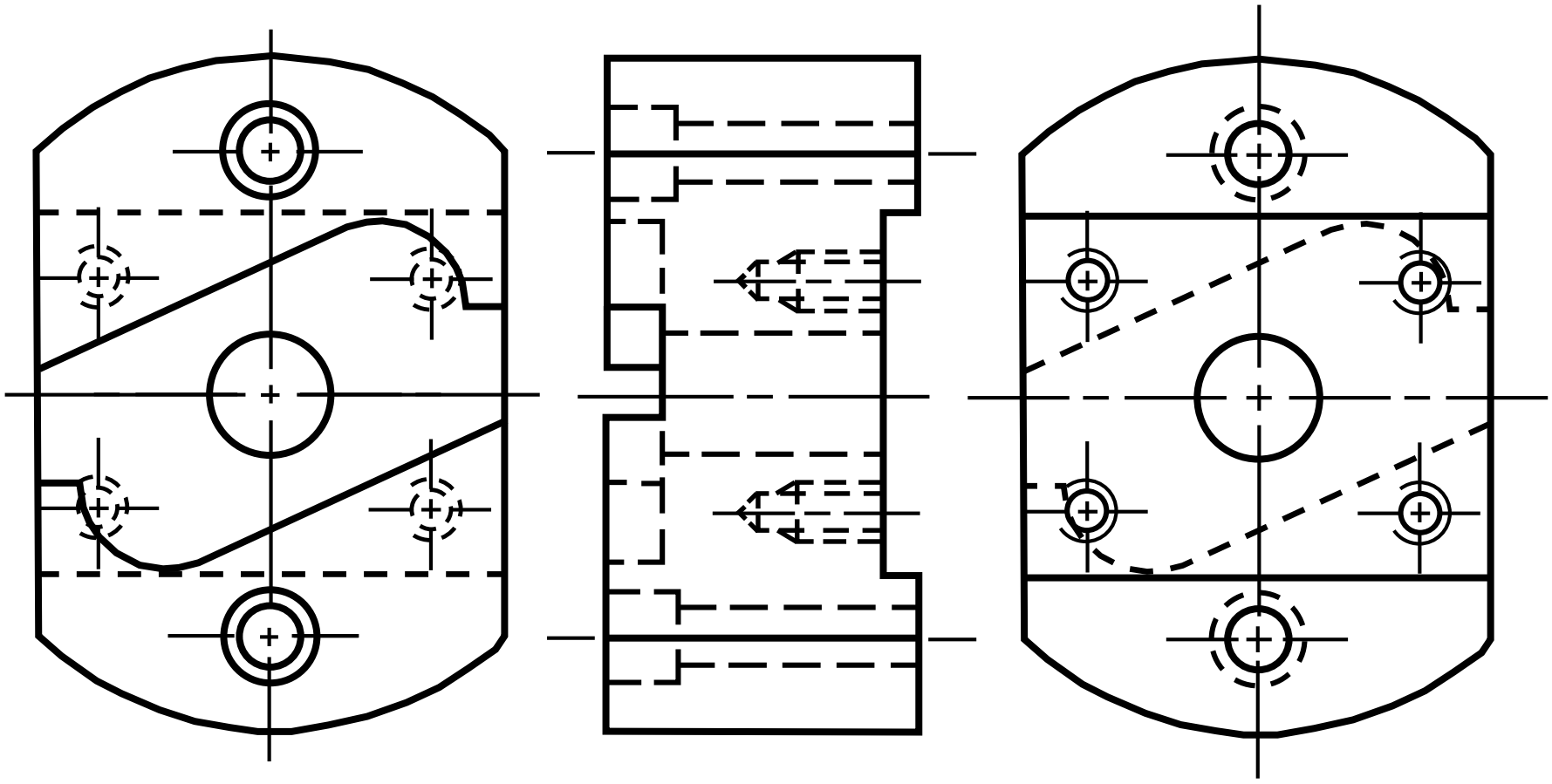
Principal view

Incompleted
right-side view

Better describe an object and facilitate dimensioning.

Example : Incompleted side views representation

Principal view



PARTIAL VIEW

HALF VIEW

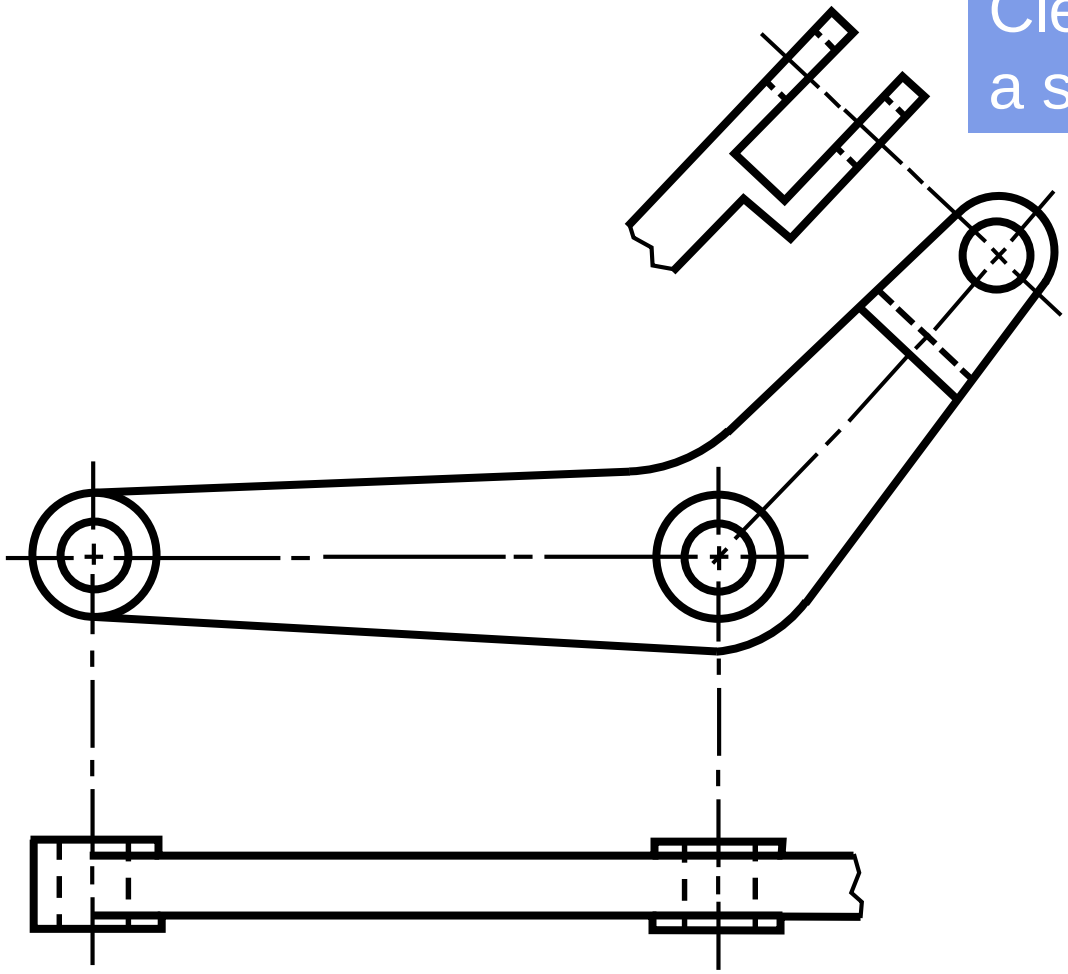
LOCAL VIEW

DEFINITION

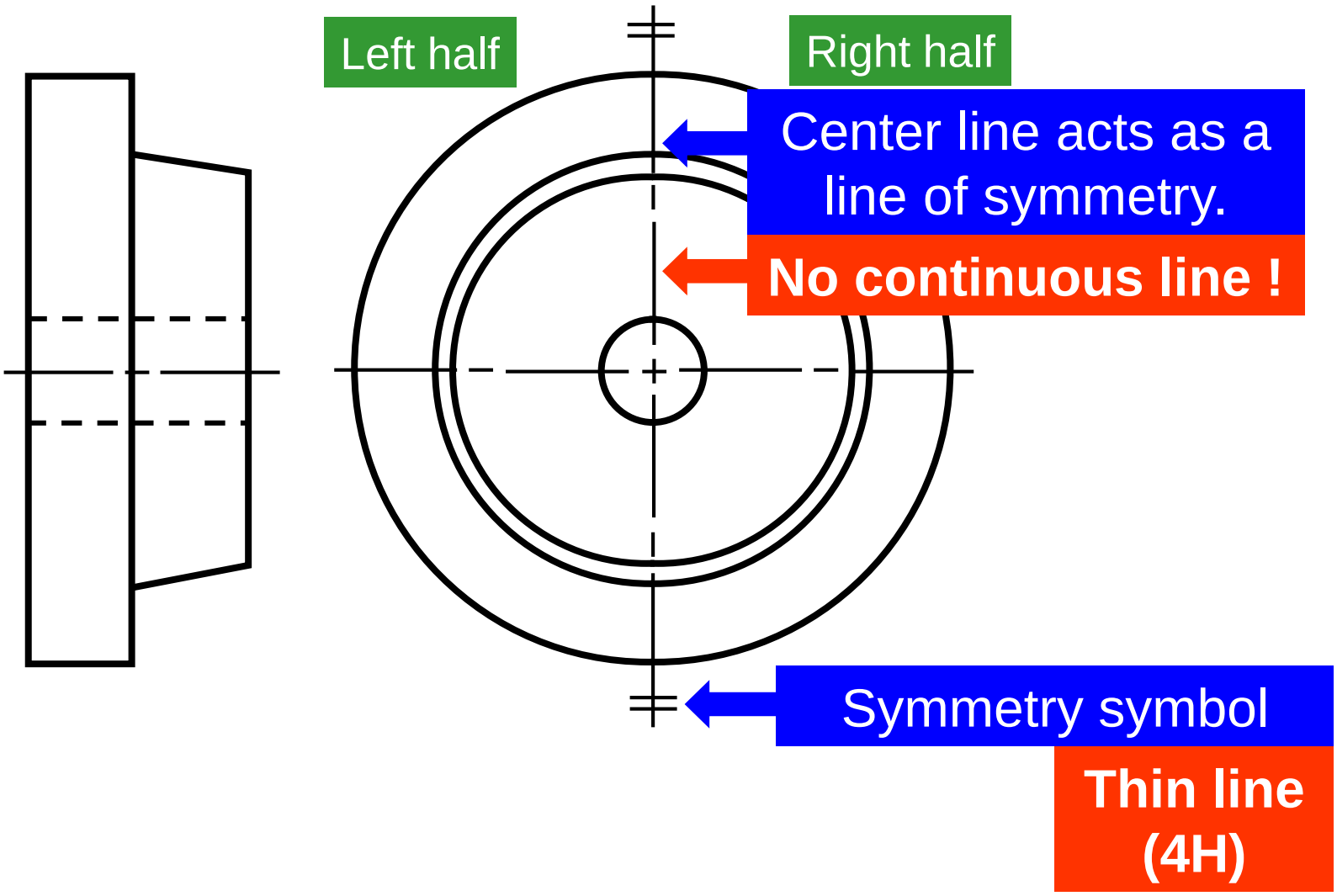
- **Partial view** is a view that represents *portions of the part that have a features need to clarify*.
- **Half view** is a partial view that is illustrated *only half of the part.*
- **Local view** is a view that shows *only features need to clarify.*

Example : Partial views

Clearly seen a shape.

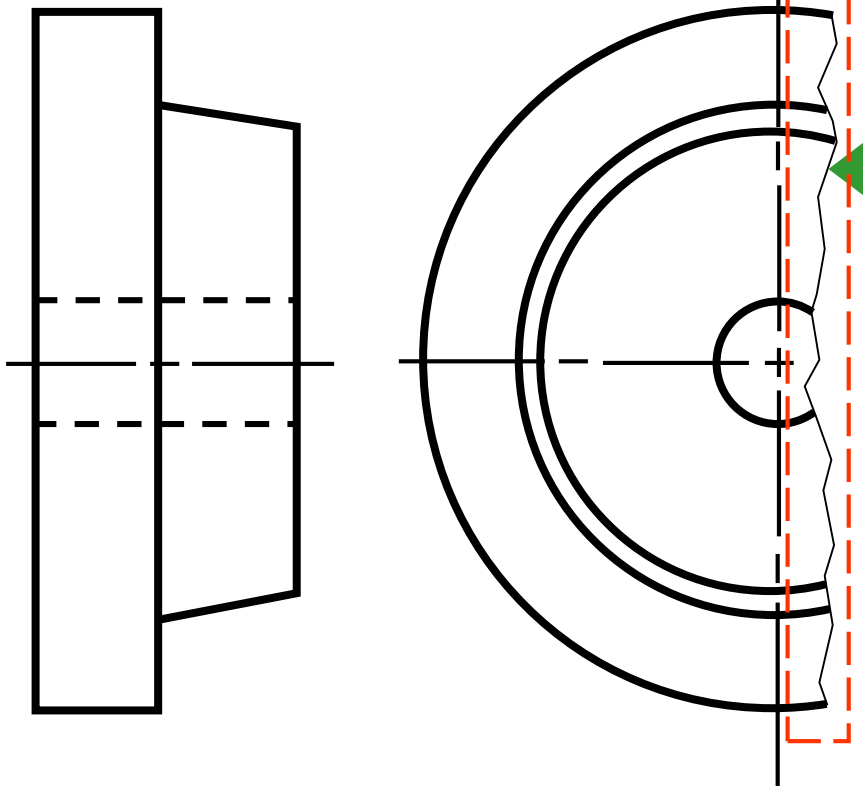


Example : Half view



Example : Half view : alternative representation

- Half view can be made by drawing the views slightly beyond the line of symmetry.



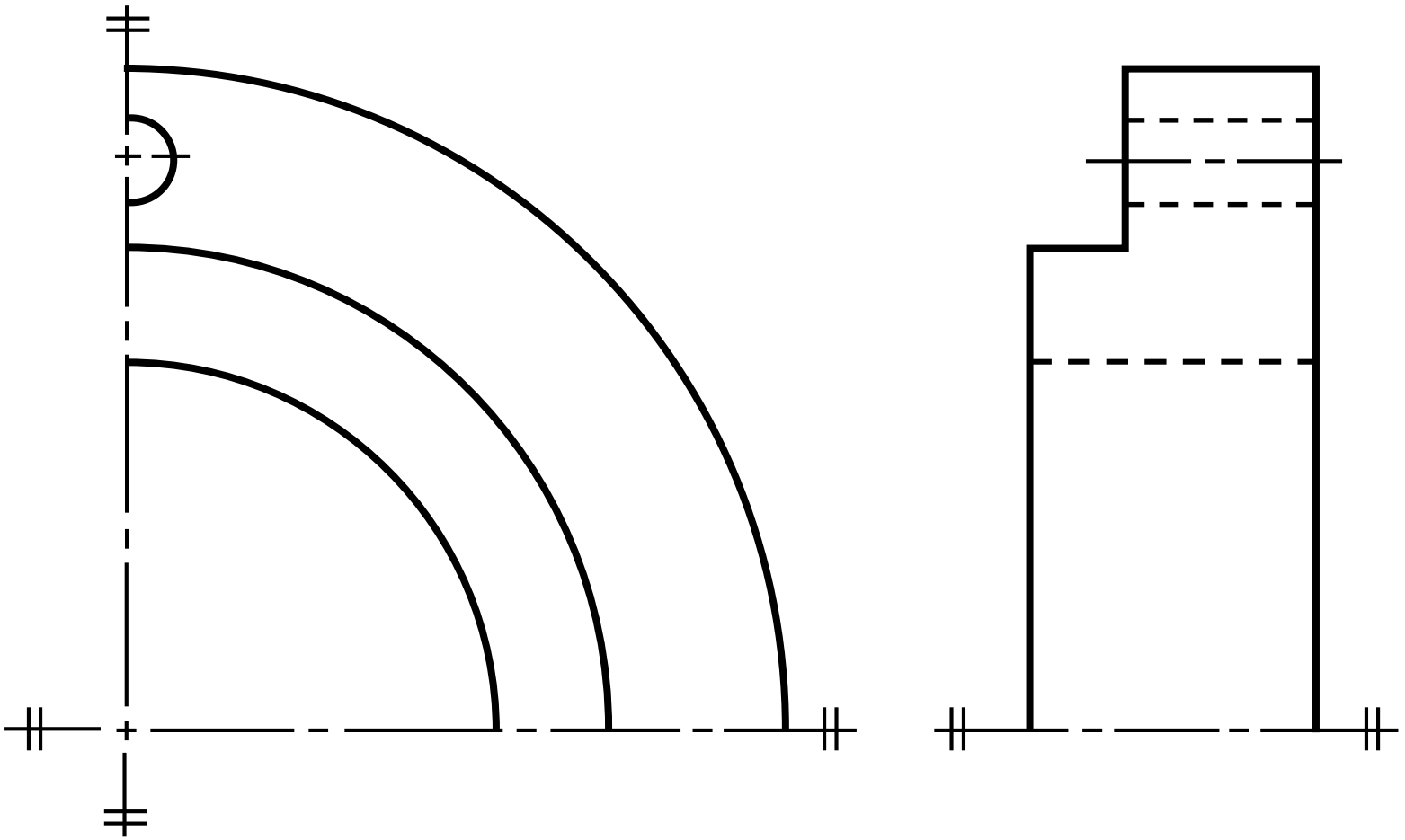
No symmetry symbol.

It is allow for writing a break line.

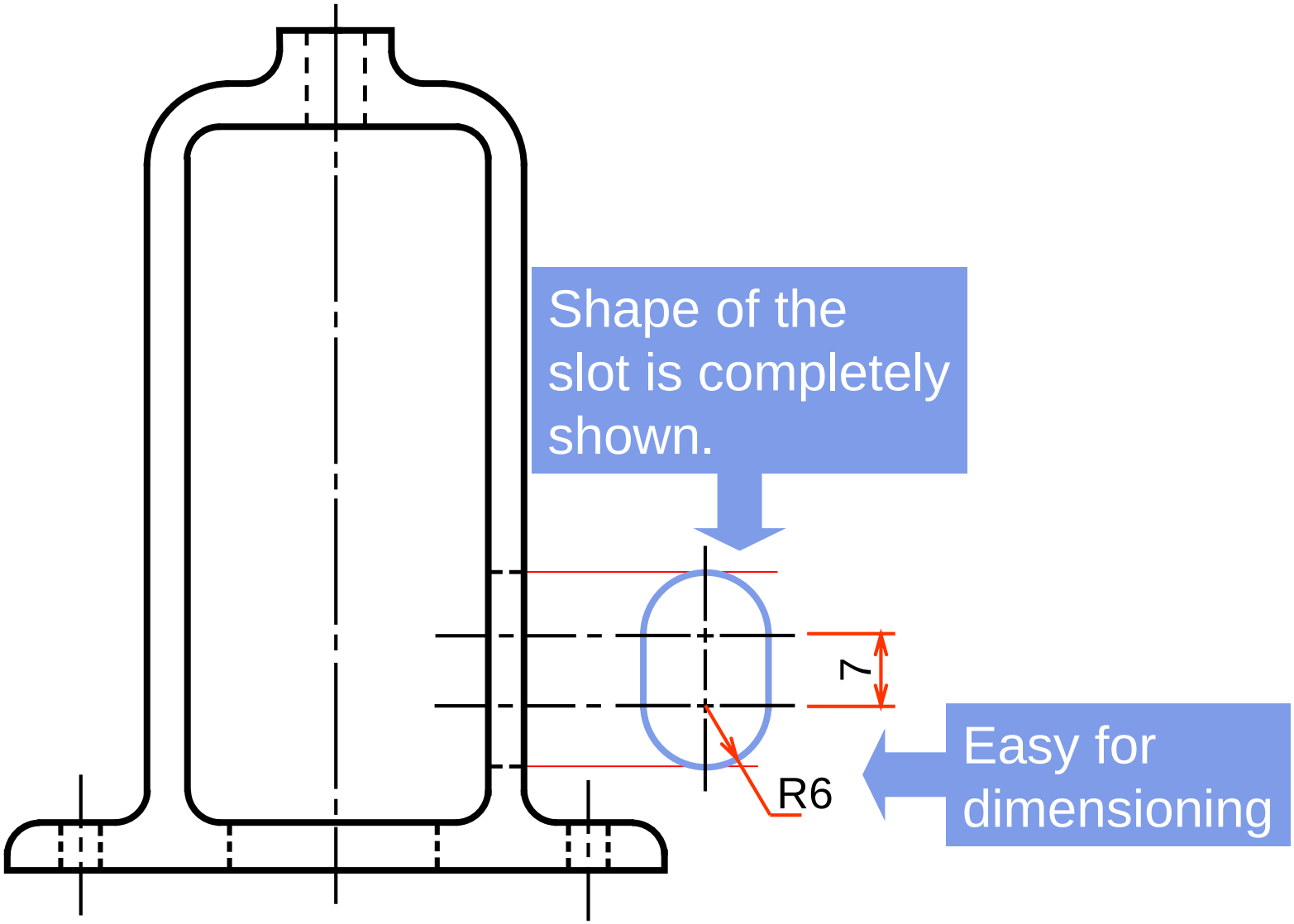
Thin line (4H)

In this course, we **omit** the break line.

Example : Half view : two symmetry axes



Example : Local view



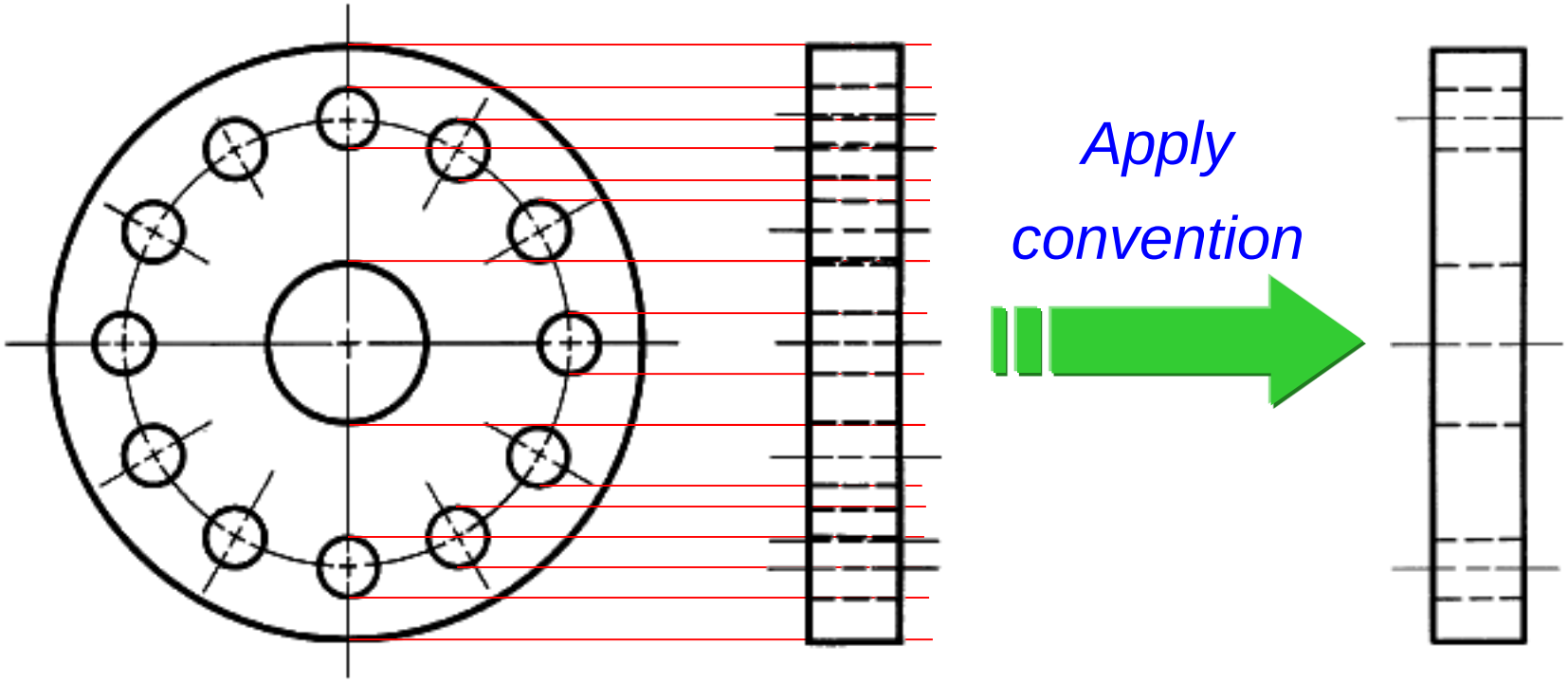
ALIGNED VIEW

DEFINITION

- **Align view** is a view that is drawn by *imaginarily rotating the object's features*, appeared in a principle view *about symmetry axis*.

Example : Necessity of align view

Strictly Projection



Apply convention

Confuse

Waste of time

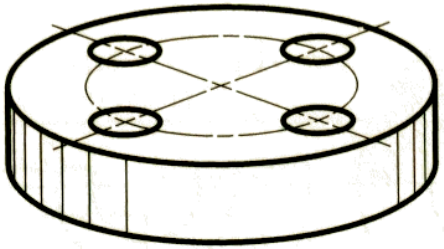
Clear

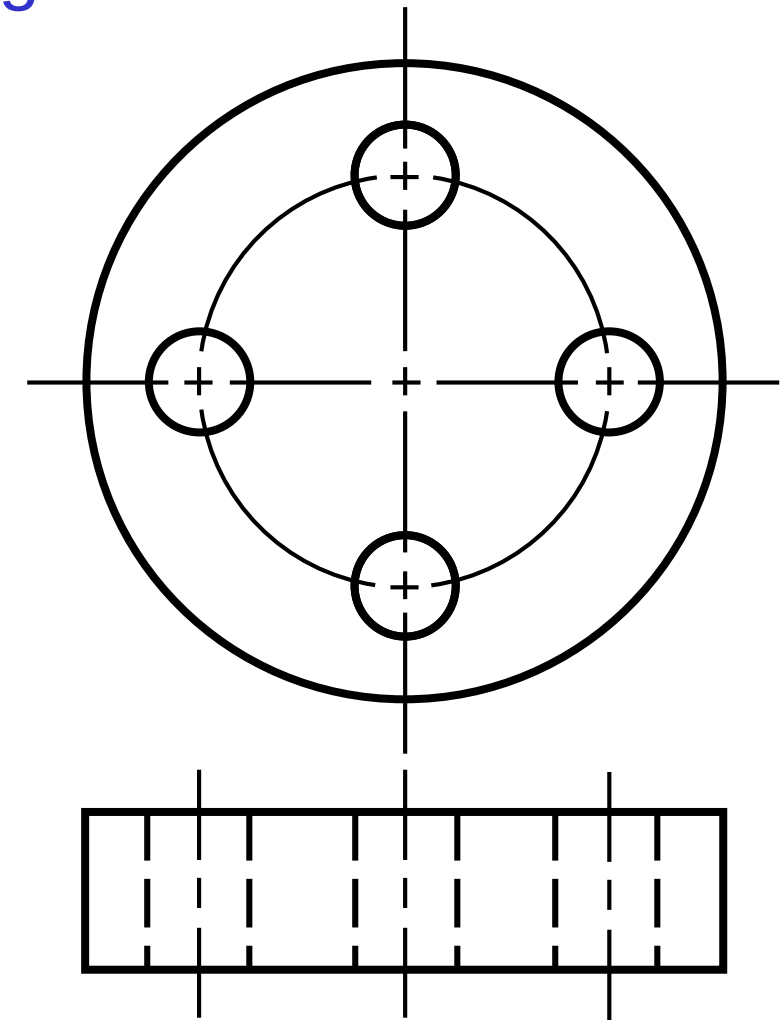
CONVENTION PRACTICE

- For an object that has *symmetrical positioned features*, it is advisable to show them on adjacent view in *true size* at *true radial distance* from the symmetry axis.

Example : Align view of holes

Given



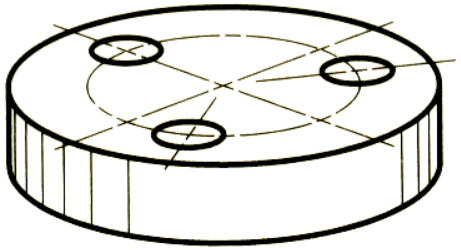


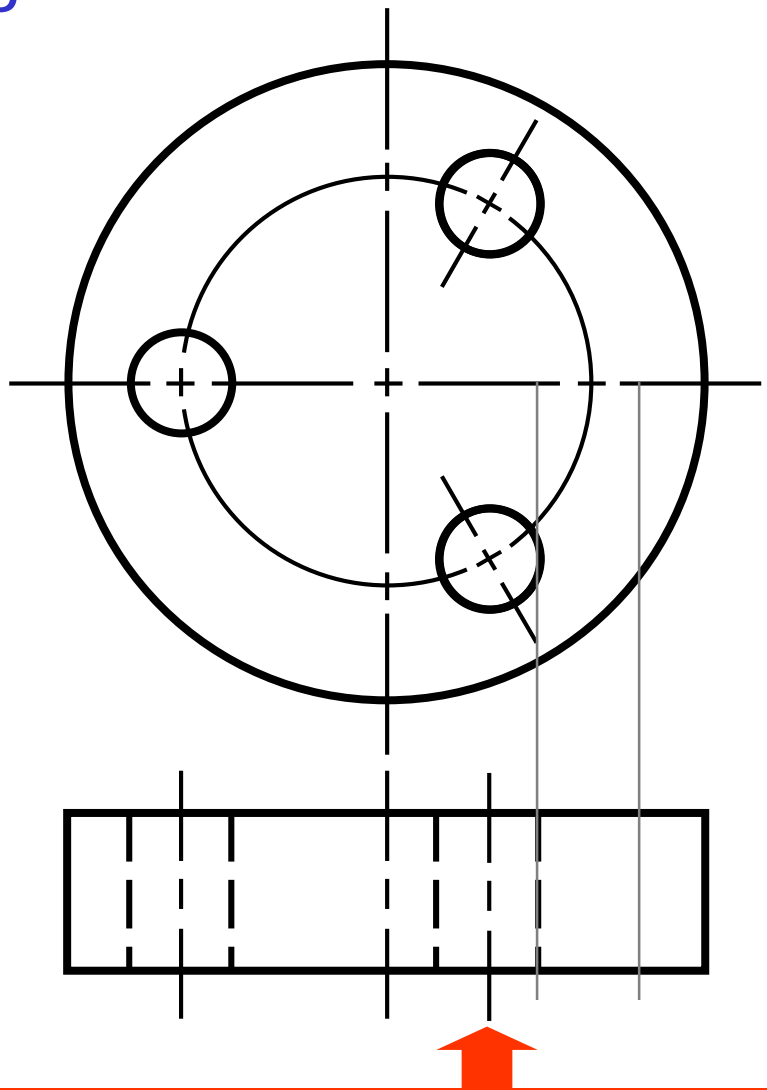
Apply aligned convention

Gives the impression that there is a hole at the center of the plate.

Example : Align view of holes

Given

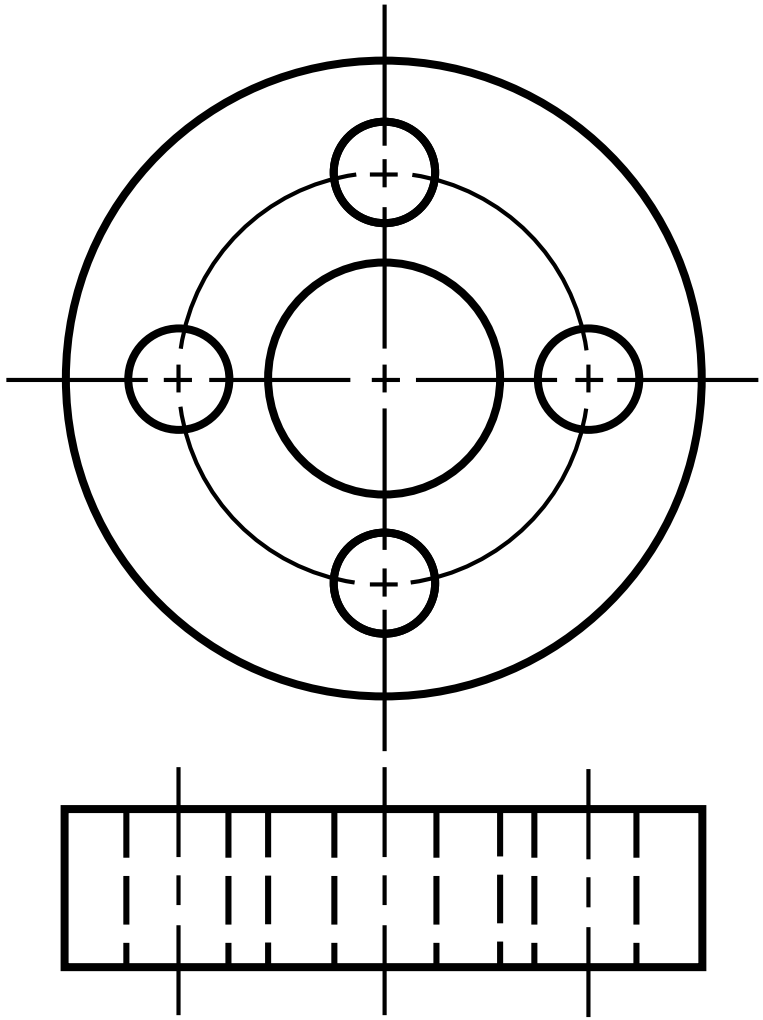




Apply aligned convention

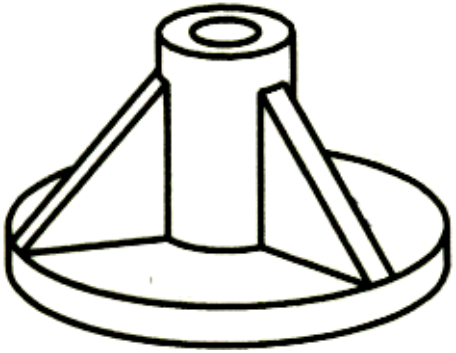
Gives the impression that holes are at unsymmetrical position.

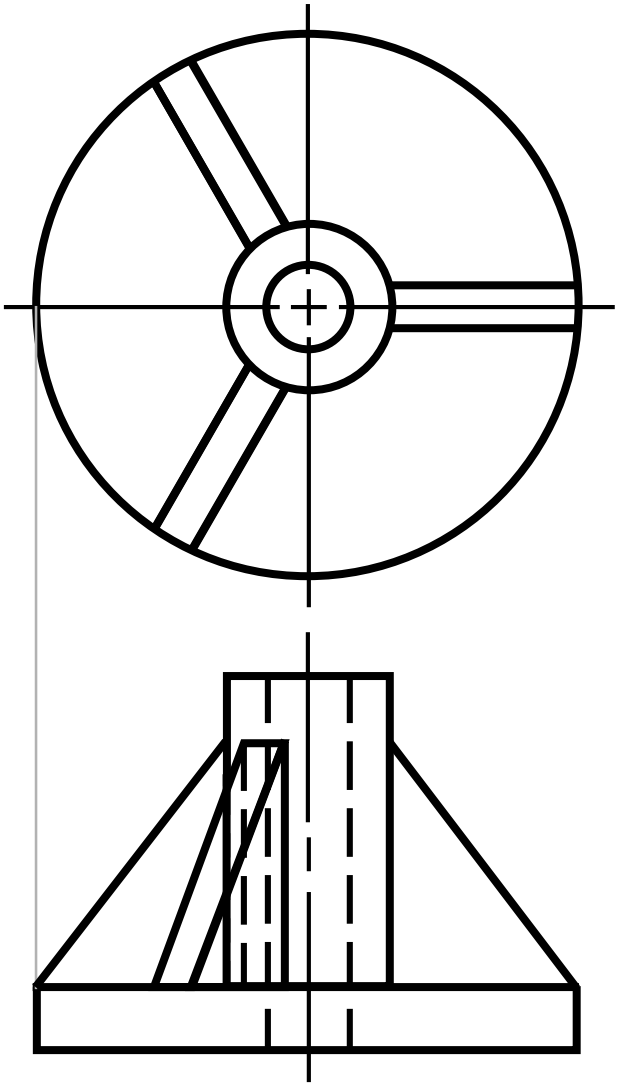
Example : Align view of holes



Apply aligned convention

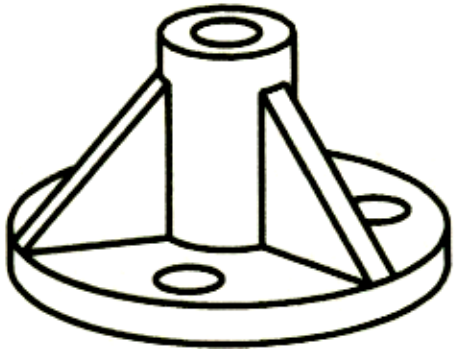
Example : Align view of ribs

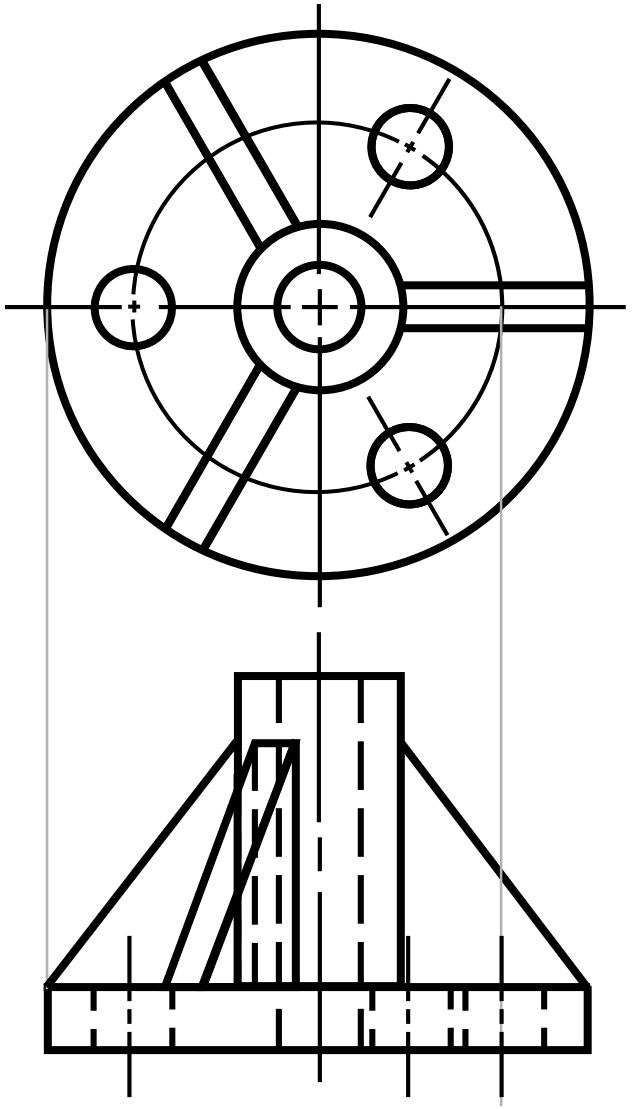




Apply aligned convention

Example : Align view of ribs & holes



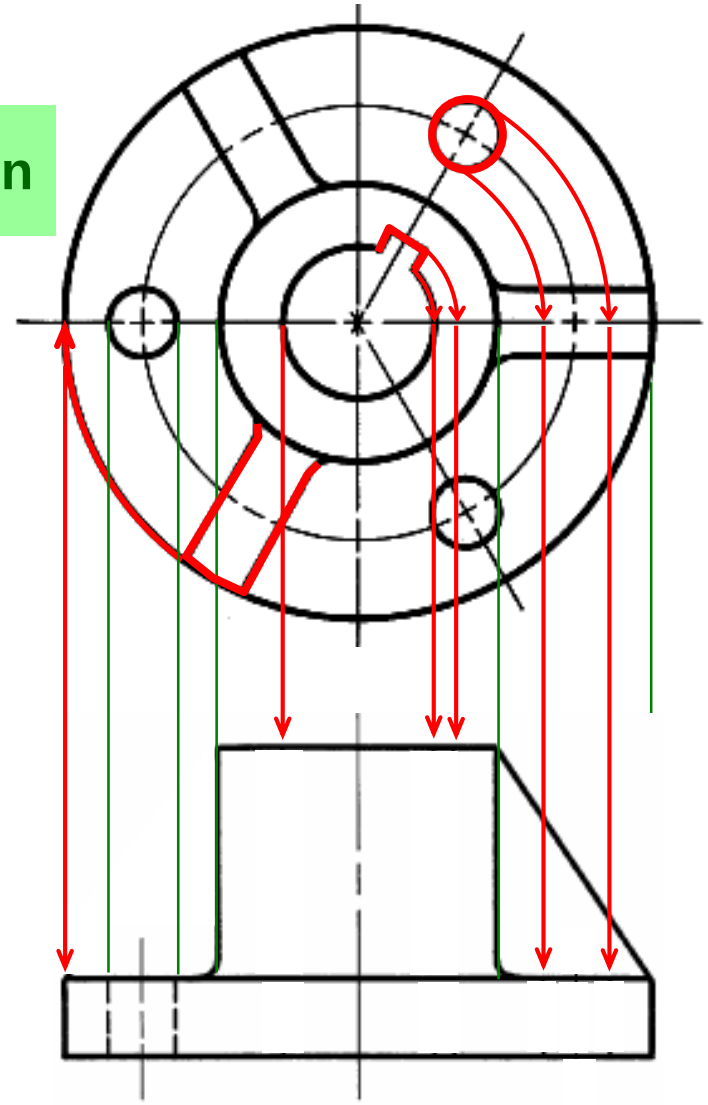


Apply aligned convention

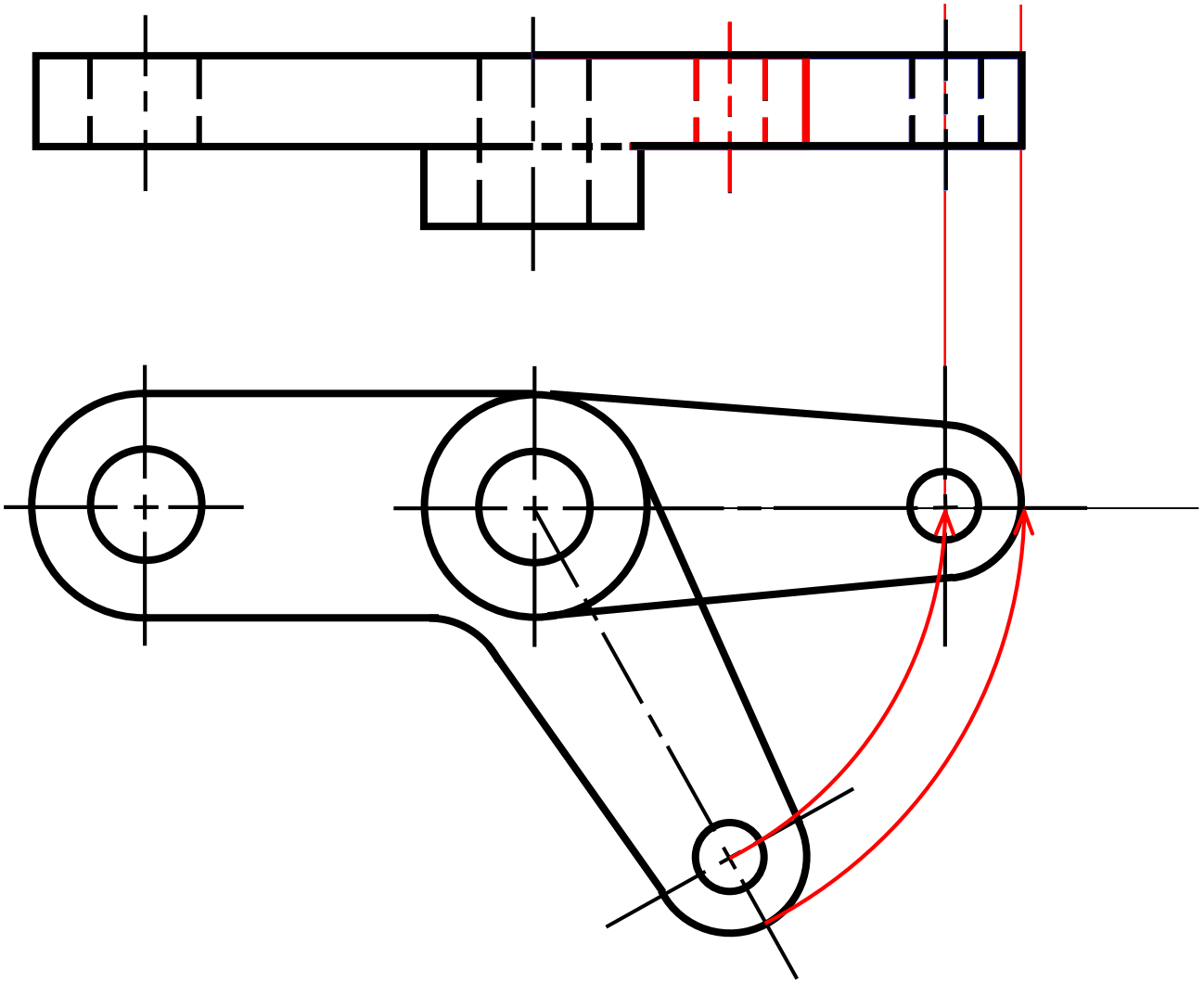
Example : Align view of ribs & holes & keyway

Make Orthographic Projection

Apply Convention



Example : Align view



ENLARGED VIEW

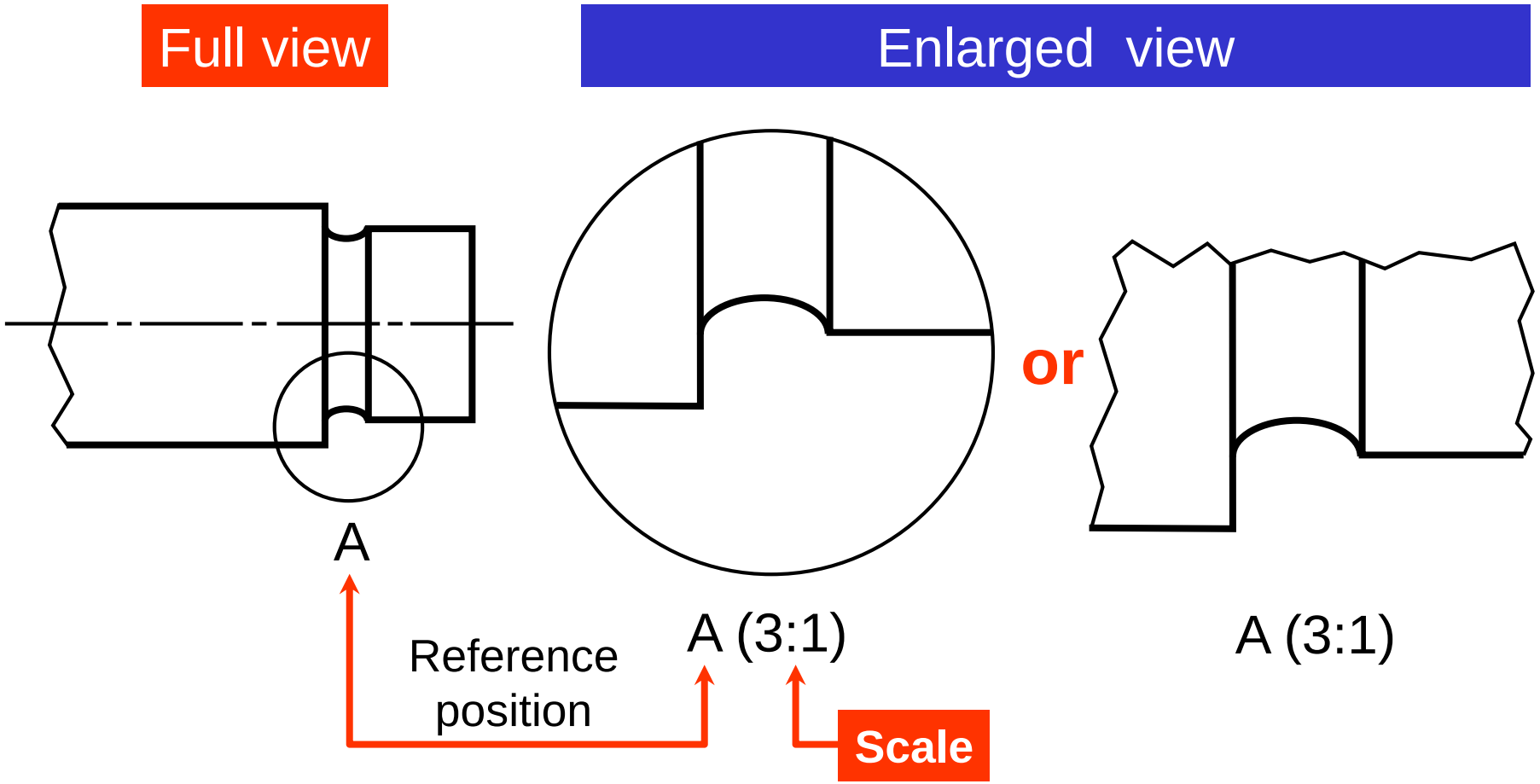
DEFINITION

- **Enlarged view** is a view ***partly selected*** from full view and is ***drawn with a larger scale***.

Conventional practice

- At full view, the selected portion is framed by continuous thin line and having a name.
- For an enlarged view, it must be specified both name and scale used.

Example : Enlarged view



NON-EXISTING LINE OF INTERSECTION

DEFINITION

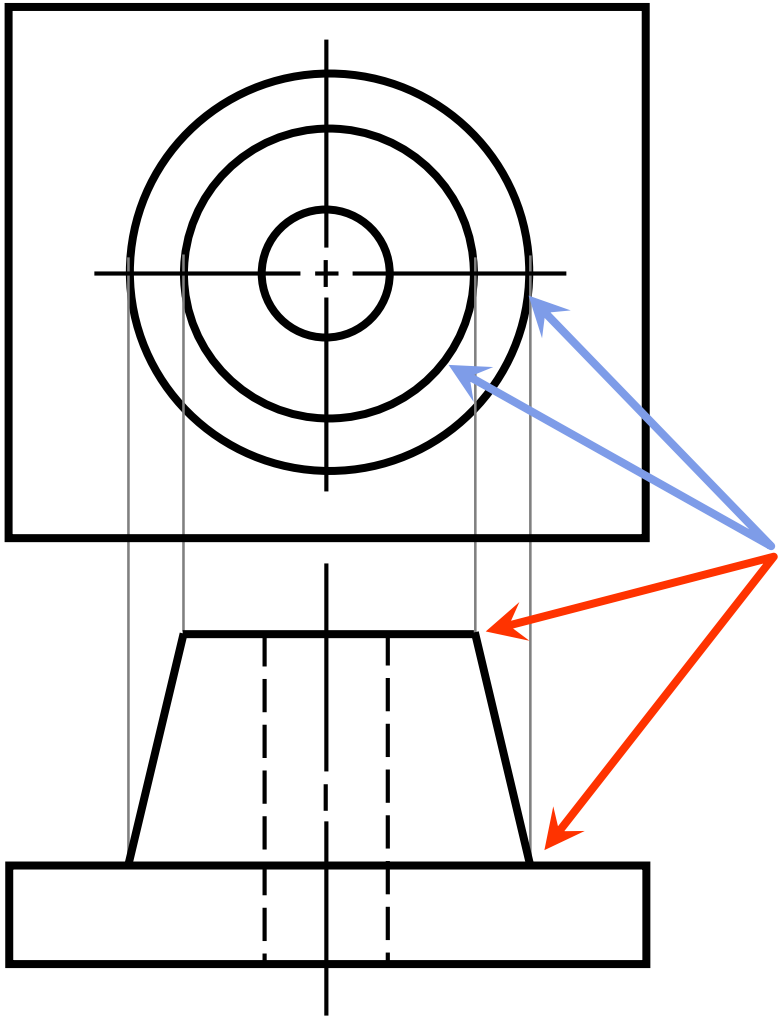
- **Non-existing line of intersection** is the line of intersecting surfaces that are eliminated by fillets and rounds.

Conventional practice

- When true projection ***mislead*** the representation of an object, it is necessary to show the additional lines that are projected from the actual intersection of the surfaces as if the fillets and rounds were not present.

Example : Non-existing line of intersection

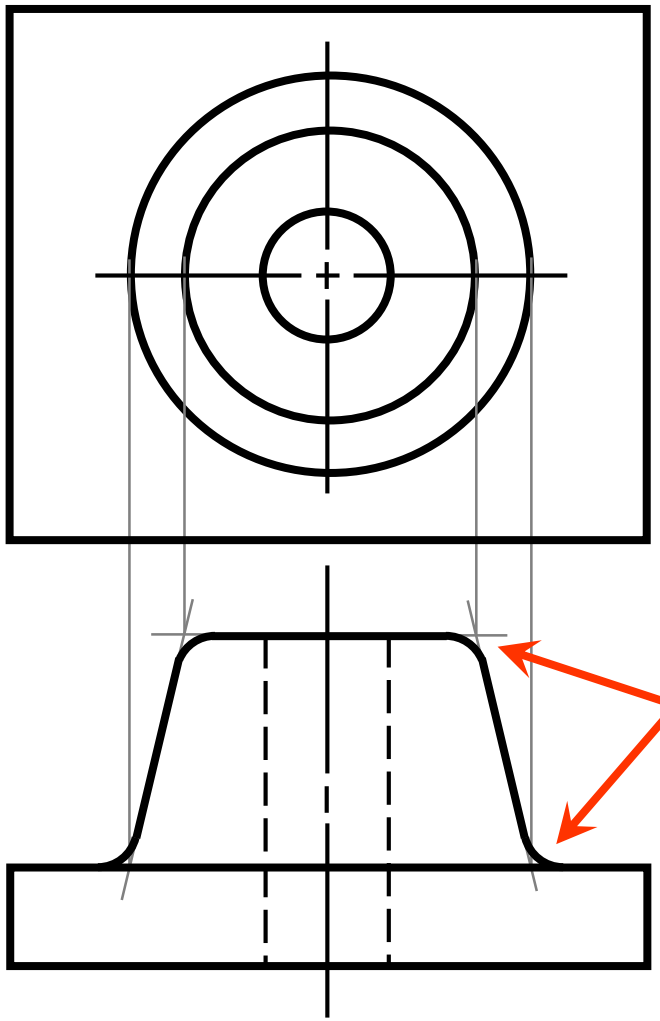
Object does not has rounds and fillets



Edges of the surfaces are shown as ***lines*** in the top view.

Example : Non-existing line of intersection

Object has rounds and fillets



The view looks like a plate with a hole !!

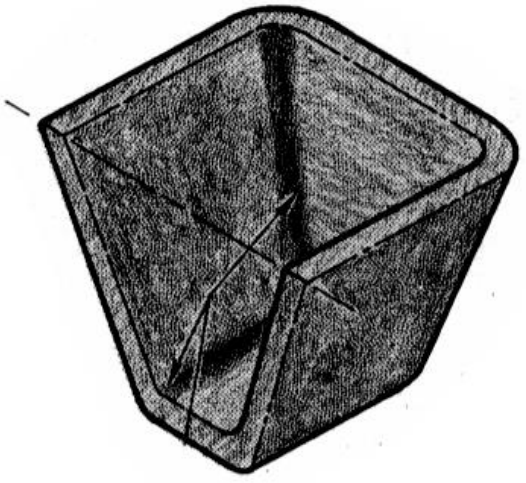
Convention practice required !

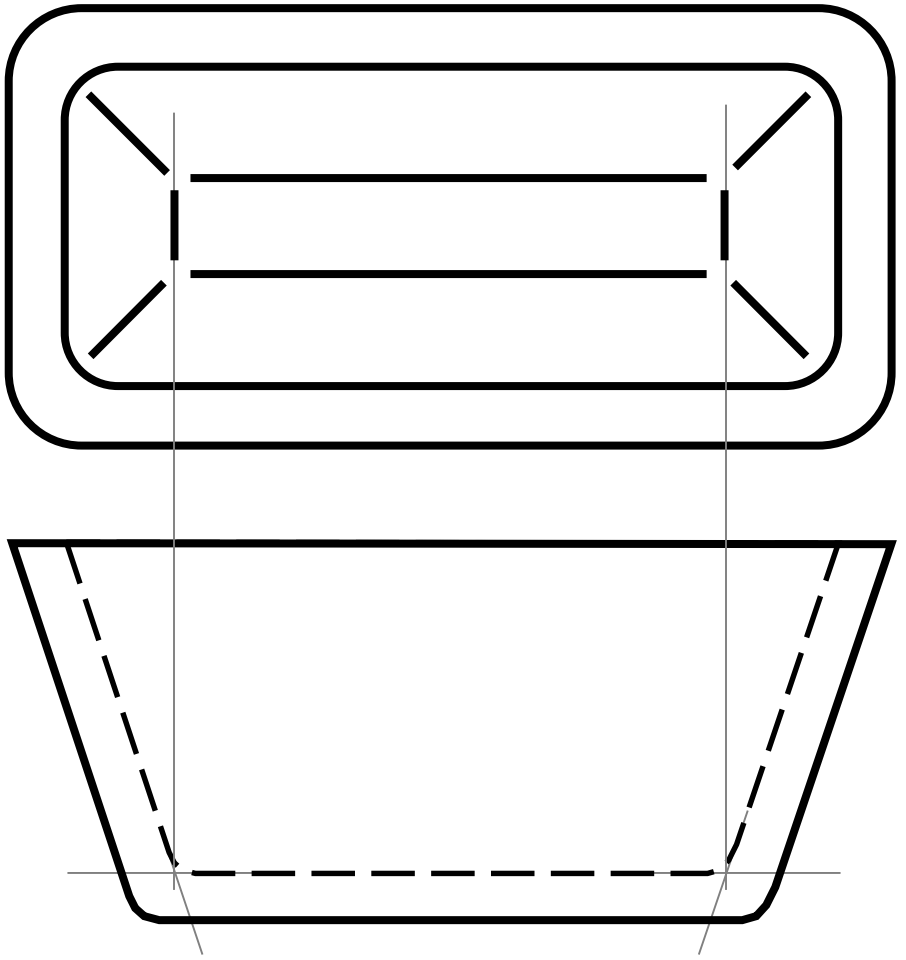
Construct a non-existing line of intersection.

No edge !

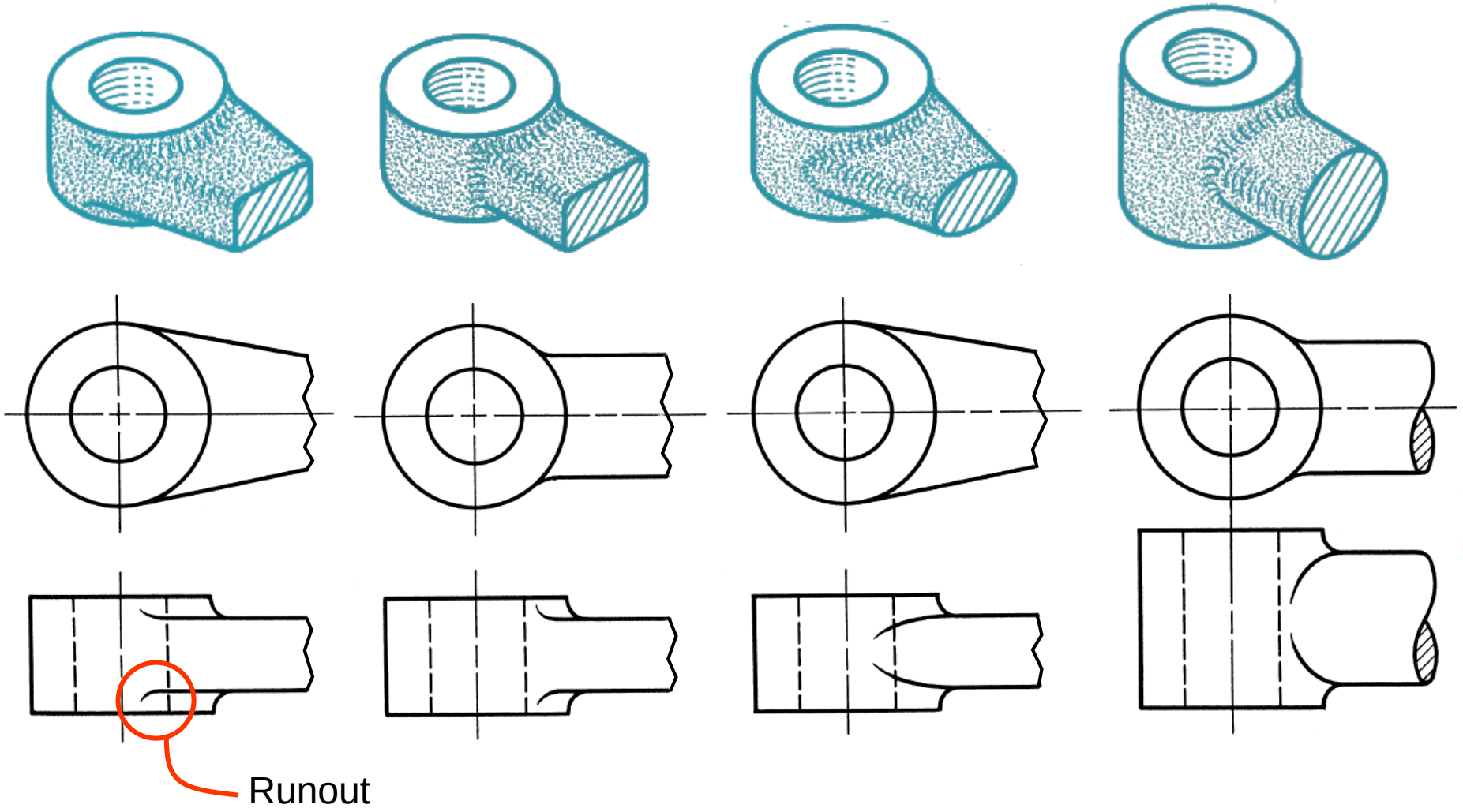
(No intersection between surfaces)

Example : Non-existing line of intersection

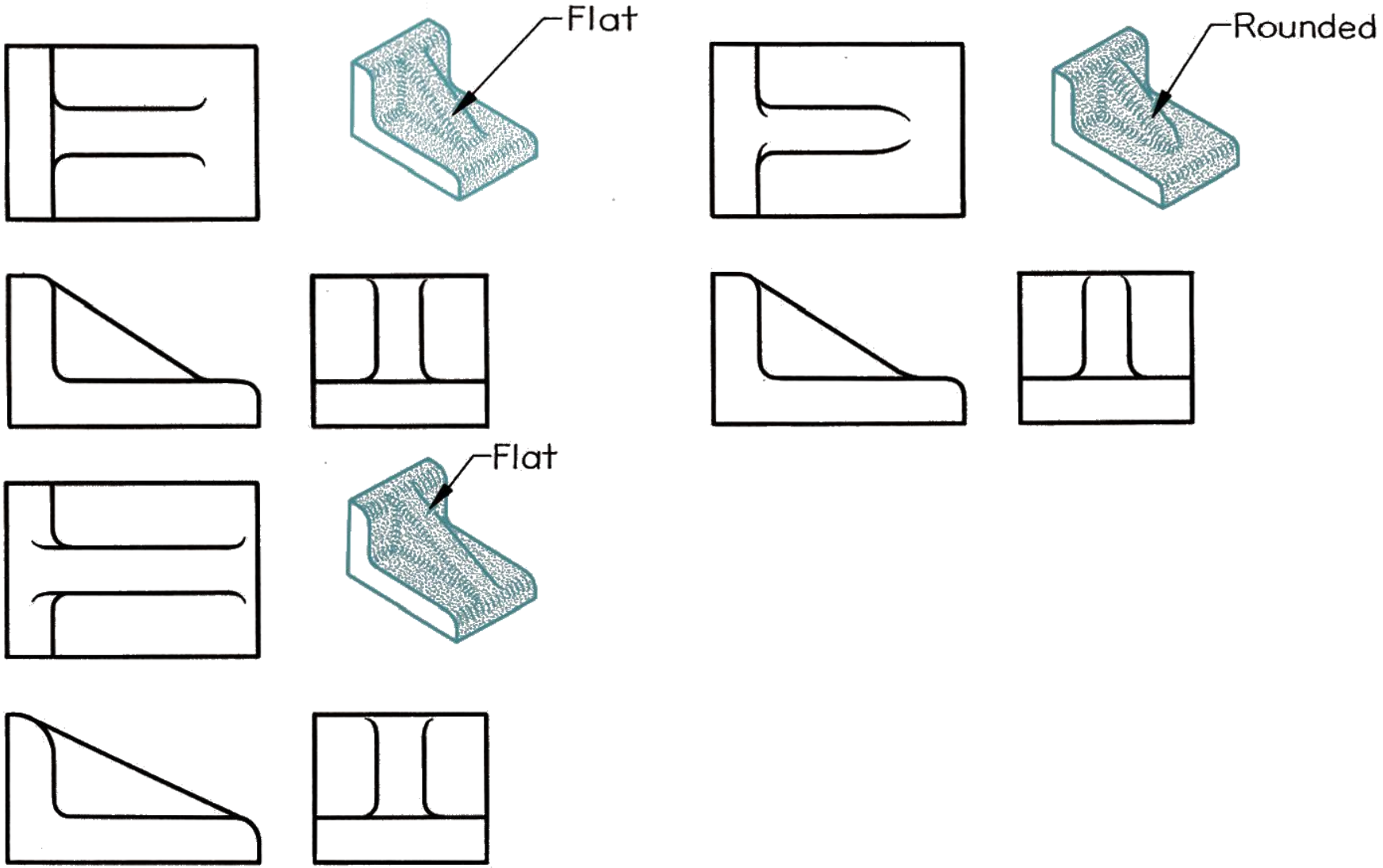




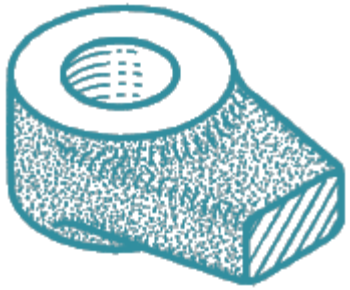
INTERSECTION BETWEEN FILLET AND ROUND

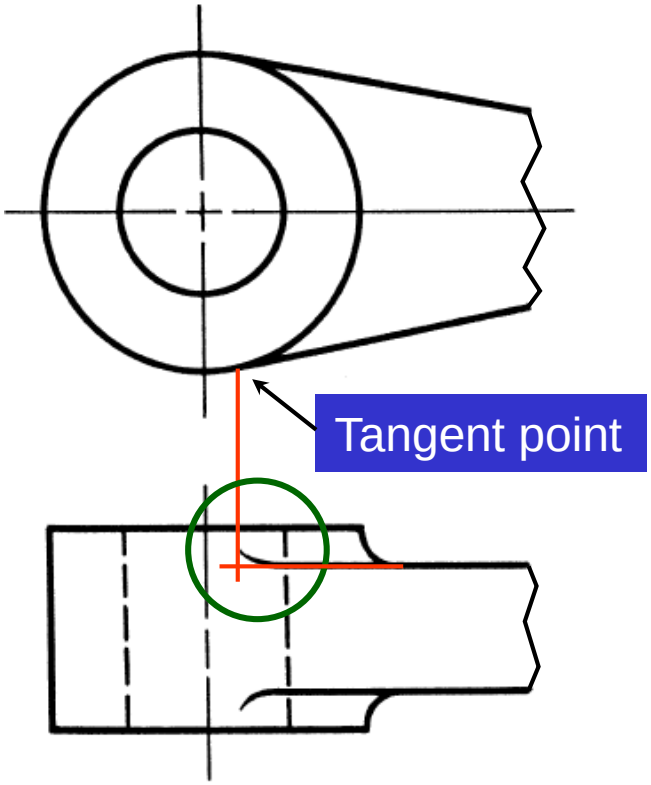


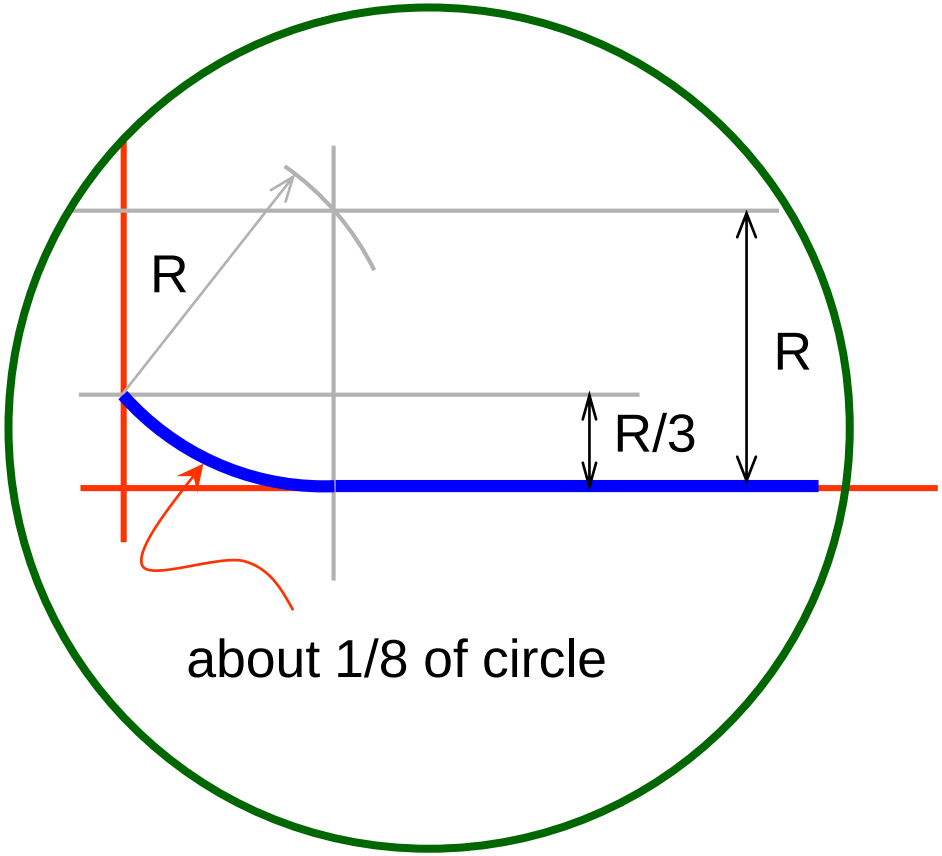
INTERSECTION BETWEEN FILLET AND ROUND



TO DRAW A RUNOUT

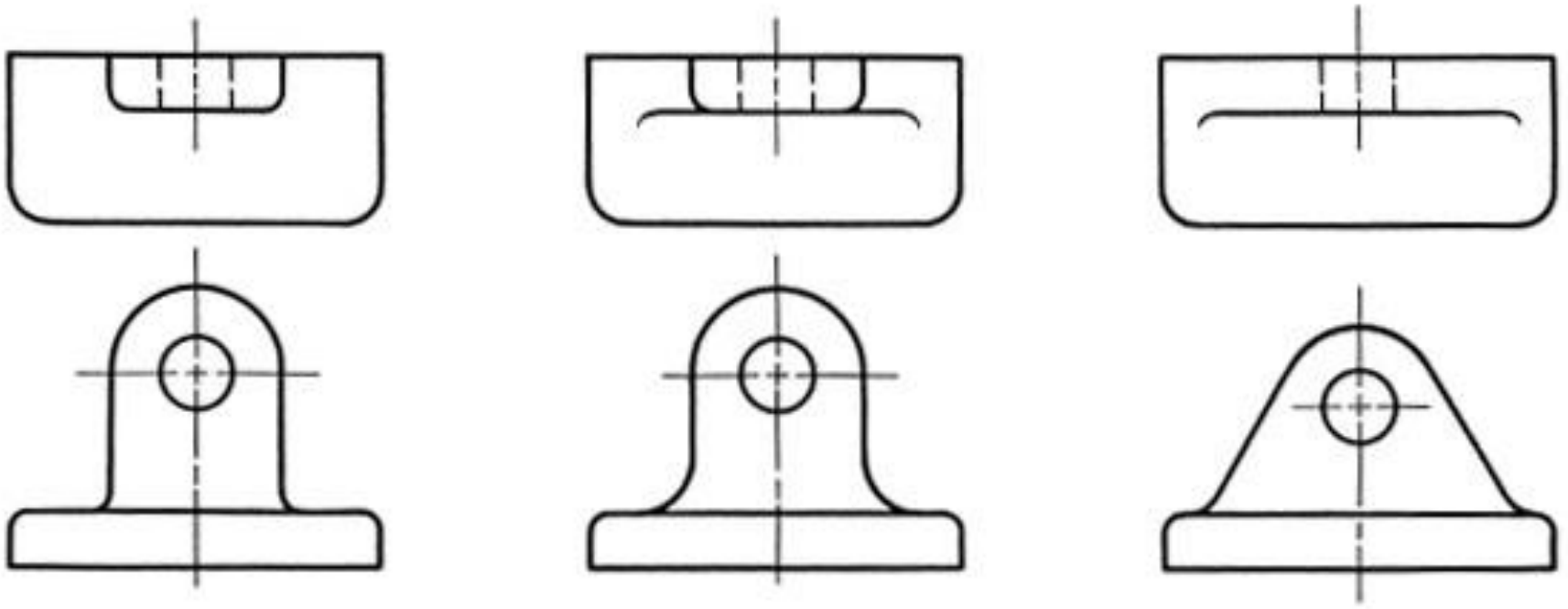






R = radius of fillet or round

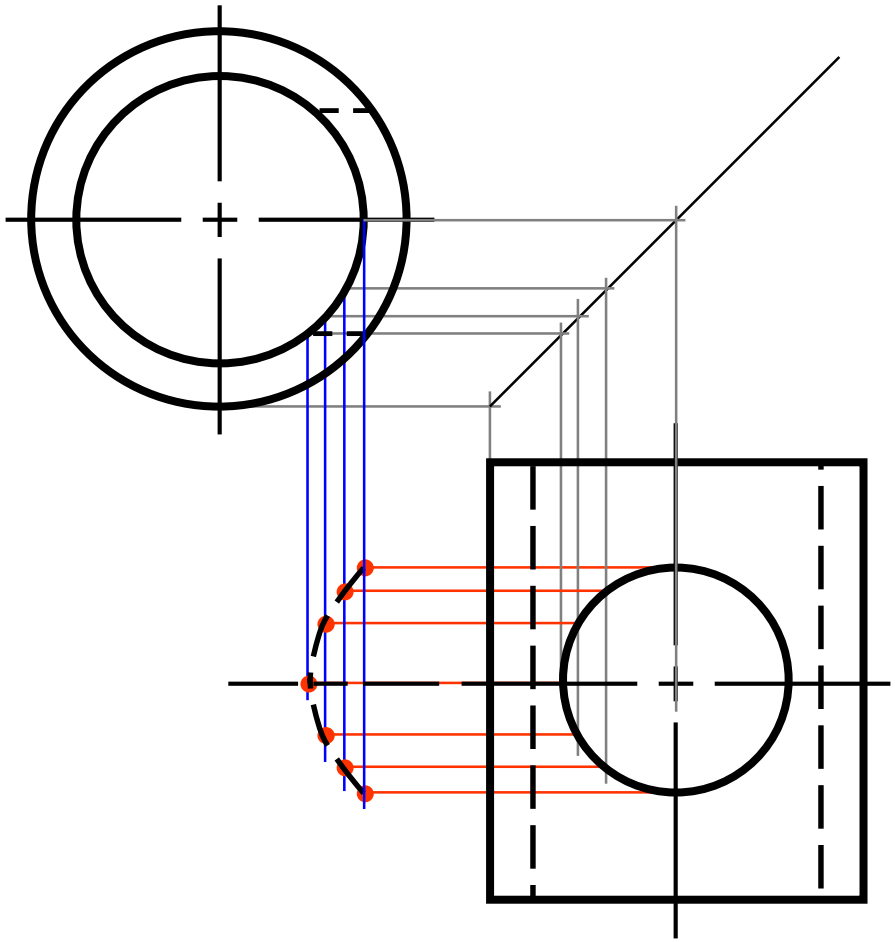
INTERSECTION BETWEEN ROUND PLANE SURFACE



INTERSECTION

HOLE IN CYLINDER

Large hole : True projection



HOLE IN CYLINDER

Large hole : True projection **Small hole :** Convention