

LINKS & GUIDES



LINKS

- **Fastening unit that connects 2 parts**
 - The thing that holds 2 parts of the same technical object together
- Links can be:
 - **Direct or indirect**
 - **Removable or non-removable**
 - **Rigid or elastic**
 - **Complete or partial**



DIRECT VS INDIRECT

■ **Direct:**

- Link connects parts **without** using some **intermediary** material (no glue, screws, tape)
 - Basically, the parts **fit together** and come in **direct** contact with one another
 - Ex: **LEGO pieces**



DIRECT VS INDIRECT

■ Indirect:

- The connection between the 2 components requires **another fastener** like glue or nails/screws
- The two parts **do not** hold together on their own, they require an **additional** fastener

Note: rivets are indirect





← Direct

Indirect →



REMOVABLE VS NON-REMOVABLE

- **Removable:**

- The parts can **be separated without damaging** them or the fastener
 - E.g. **a pen cap from the pen**



REMOVABLE VS NON-REMOVABLE

- **Non-Removable (permanent) :**
 - If the 2 parts are separated at least one of them (or the fastener) will become **damaged**
 - E.g. **when things are glued together**



RIGID VS FLEXIBLE

- **Rigid (or stiff):**

- The link does not have any give; it is stuck in a **particular position/shape**



RIGID VS FLEXIBLE

- **Flexible (Elastic):**

- The link allows the parts it is connecting to change **positions** or be **deformed**
 - The link can undergo **deformation** and then return to its **original shape/position**
 - Usually: **rubber** or **springs** are involved



COMPLETE VS PARTIAL

- **Complete:**

- The link **does not** allow the parts to move independently of each other
 - If one part moves, the **other will as well**



COMPLETE VS PARTIAL

■ Partial:

- One part can move **independently** of the other and this movement is **necessary** for the proper functioning of the object
 - If one part moves, the other one **does not** necessarily
 - E.g. door and door frame



LET'S LOOK AT AN EXAMPLE:

- Link between the two prongs:
- Direct or indirect?
- Rigid or flexible?
- Removable or non-removable?
- Complete or partial?



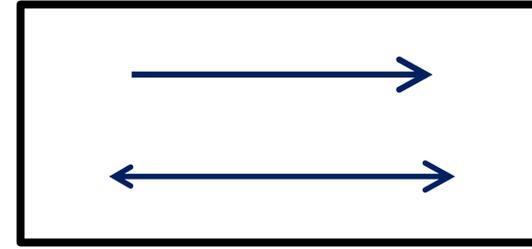
GUIDES (GUIDING CONTROLS)

Guides:

- A part that allows another part to **move in a certain way**
 - Controls (or guides) the **movement** of a moving part in a particular way
- Guides can be:
 - **Rotational**
 - **Translational**
 - **Helical**



GUIDE TYPES



■ Translational guide:

- A part that guides another part in a **straight line**

- Can be **unidirectional**

- Can be **bidirectional**

- Ex: Like the
pull the drawer



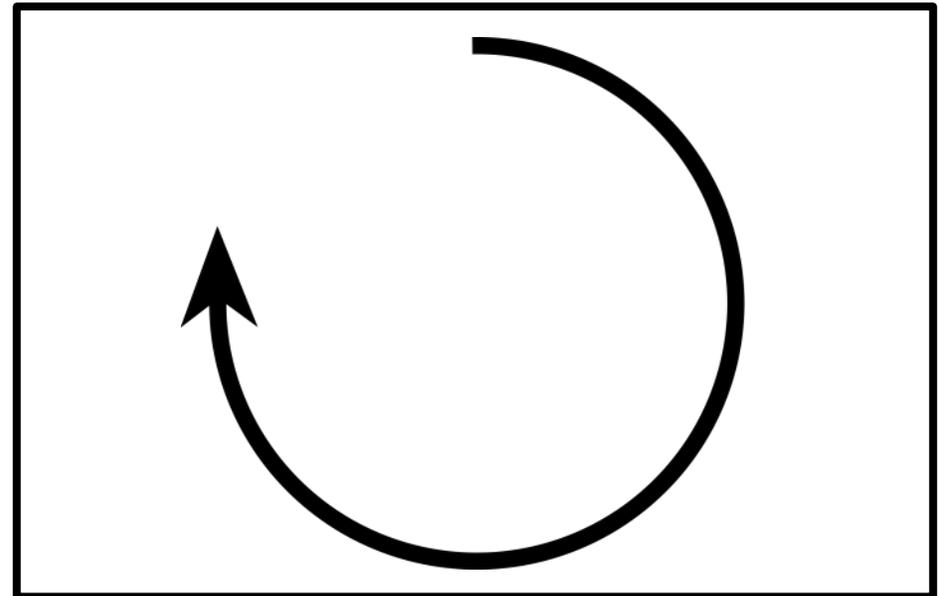
at allow you to
ck in



GUIDE TYPES

■ Rotational guide:

- A control that allows the part to **rotate** only
- Ex: Like the rack for paper towels or toilet paper



GUIDE TYPES

- **Helical guide:**

- Guides the movement of a part in both a **translational** and **rotational** way
- Ex: the ridges for a screw cap

