

KNIPEX pliers and ergonomics

Ergonomics is the science of adjusting technology to human beings to facilitate work. In the design of KNIPEX pliers, ergonomic criteria are given particular attention. The main aim of this is to keep the effort required by the user and thus any health risks to a minimum. Ergonomics with pliers goes well beyond the basic "handle design".

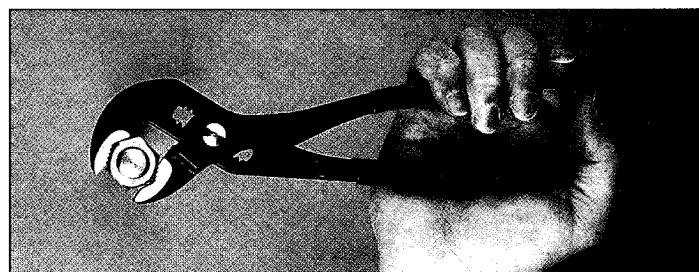
KNIPEX pliers are designed in such a way that in use

- they require a **minimum of effort**
- the hand and finger joints are assured a **low stress position**
- there is **good contact** between the hand and the handle

Reduction of effort

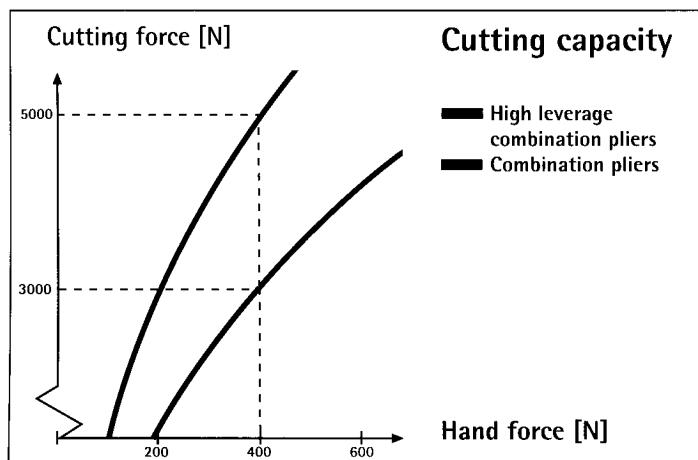
Examples of this include

- the self-locking function of the "Cobra" and "Alligator" water pump pliers. The jaws engage onto the workpiece automatically so it is not necessary to press the handles together. The movement of the workpiece can be left almost entirely to the effort applied by the arm muscles.



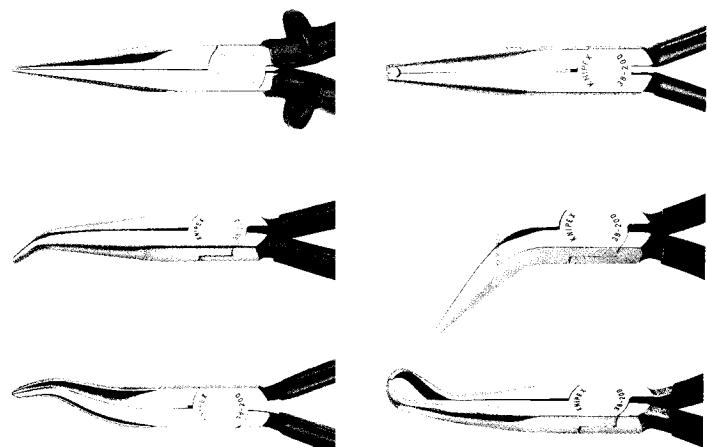
- the optimised force transmission ratio on the most widely used cutting pliers. In this case KNIPEX offers a high leverage range with a particularly high force transfer which takes a great deal of the strain off the user:

Pliers type	Basic model	High leverage model(s)
Combination pliers	No. 03	No. 02
End cutting nippers	No. 68	No. 67 / No. 61
Diagonal and centre cutting nippers	No. 70	No. 74
Concretors' nippers	No. 99	No. 99 1



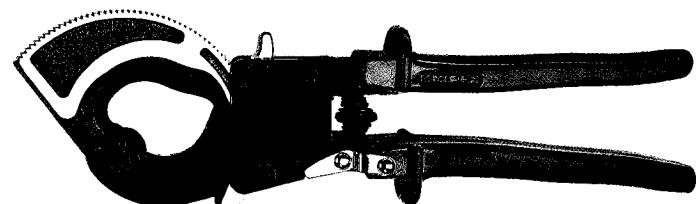
Relaxed position of the wrist

- Many KNIPEX models are available in a variety of different shapes and positions of the pliers head, which means that the pliers can be adjusted to the application and the hand can remain in a natural and relaxed position.



Head positions on model No. 38

- Furthermore the space between the handles on KNIPEX pliers is designed in such a way that the force can be developed to suit the application required (too large or small a space between the handles makes it more difficult to apply the required force). A particularly good solution for this is, for example, the ratchet cable cutter, Art. No. 95 31 with two "gears". With this tool, depending entirely on the hand force required, a smaller or larger handle spacing can be selected.



Ratchet cable cutter 95 31 250

Easy hold handle design

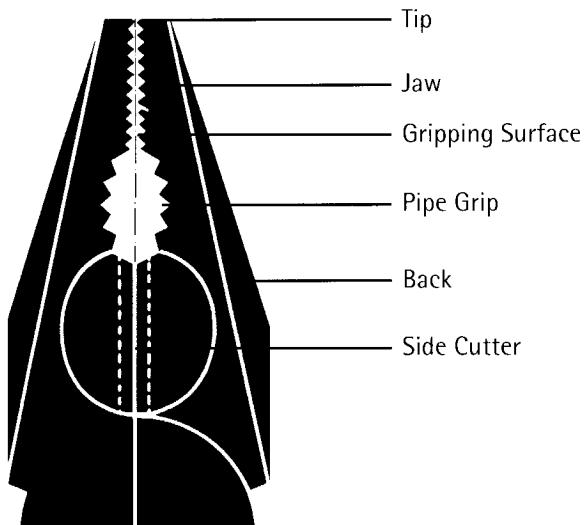
The handles on KNIPEX pliers are designed in such a way that they distribute the hand force on as large a contact area as possible; this results in a good transfer of the force and prevents pressure points in the hand. Generally a curved handle contour is selected with a wide and rounded contact area.



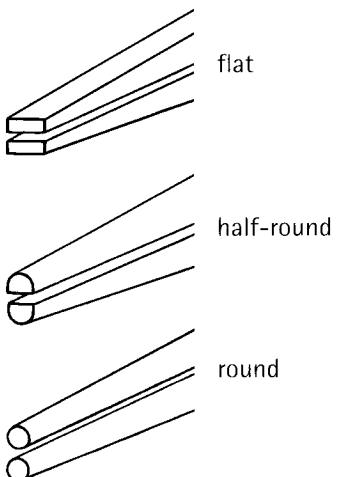
Handles on high leverage diagonal cutting nippers



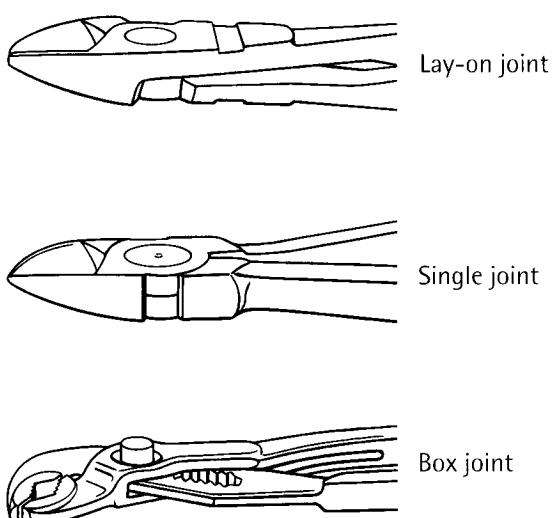
Head Parts



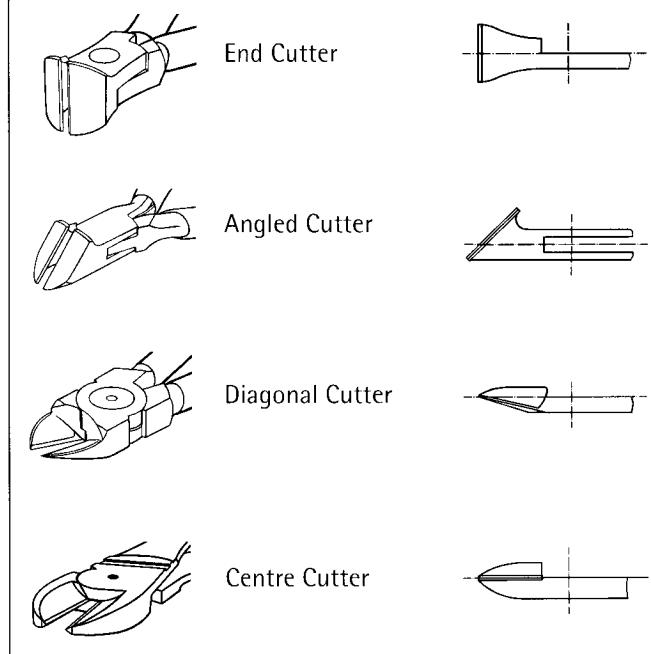
Cross-Section of Jaws (basic styles)



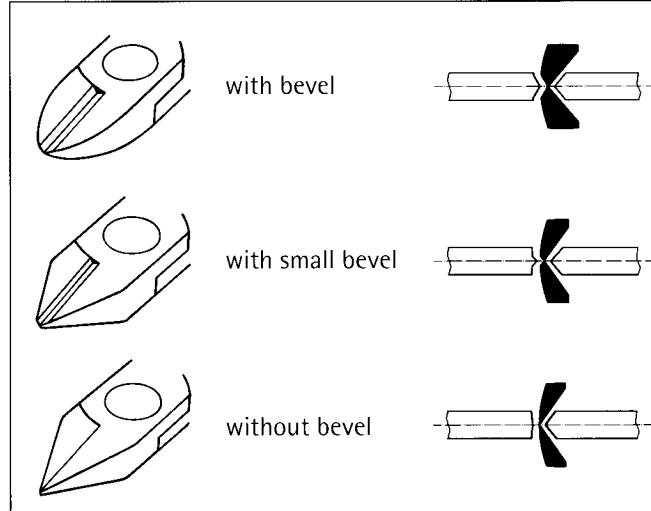
Style of Joints



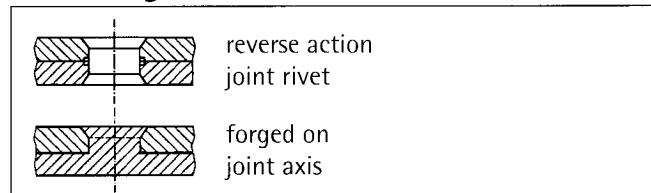
Direction and Position of Cutters



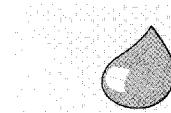
Main Cutting Types



Rivet Designs



Care tips



A drop of oil on polished surfaces and in the joint will keep the tool in good working order and will increase the service life of your pliers.

Safety note



Only use pliers for the purpose for which they are designed. When using cutting pliers take care of the wire ends which may spring away quickly - always wear goggles.