Double action instruments – Feel the grip!

Comparison handle design SQ.line® vs. traditional design

SQ.line®

Traditional design

SQ.line®

Traditional design

Key Facts at a glance:

Comparing grip forces, the new **SQ.line® handle design of double action instruments** offers a **safer grip** as follows:

- **Safer grip of SQ.line®...**
  ...regarding distal end (pull force): **up to 58%**
  ...regarding proximal end (push force): **up to 4 times higher (+444%)**
  ...regarding rotation (torsion force): **up to 24%**

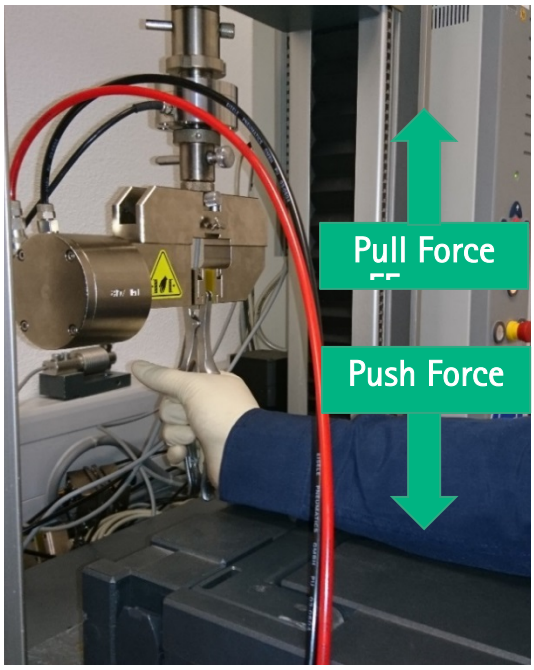
➢ The innovative design of the SQ.line® handles - new handle shape, contours and textural features – requires less gripping force to achieve good control during use. This translates to **less fatigue** on the operator!

Executive Summary - Test performance:

Characteristics of testing persons:
10 testing persons (5 male , 5 female, age 20-54, glove size S+M+L)

Test Objects:
LX157NR vs. LX157R and LX184NR vs. LX185R

Test 1: Push & Pull Forces
The different handles were fixed in a machine which measures axial push and pull forces. For this test, each handle was lubed with Vaseline to simulate the slippery condition of surgical use. The force in Newton (N) was tested and recorded for the point at which the forceps began to slip within the hand of the testing person.



Test results:

	Ø Pull force	Ø Push force
Aesculap® traditional handle LX157R	50.8 N (100%) (Deviation: 17.9N-80.2N)	14.7 N (100%) (Deviation: 6.8N-26.6N)
SQ.line® handle LX157NR	52.3 N (103%) (Deviation: 28.5N-88.9N)	80 N (544%) (Deviation: 21.9N-192N)

	Ø Pull force	Ø Push force
Aesculap® traditional handle LX185R	39.9 N (100%) (Deviation: 13.8N-80.2N)	27.1 N (100%) (Deviation: 3N-53.6N)
SQ.line® handle LX184NR	63.2 N (158%) (Deviation: 13.6N-109N)	35.3 N (130%) (Deviation: 14.1N-69.8N)

Test 2: Torsion force

The different forceps were then fixed in a machine which measures torsion forces.
Again the handles were lubed.
For each handle, the force in newton meter (nm) was tested and recorded for the point at which the forceps starts to slip in the hand of the testing person.

Test results:

	Ø Torsion force
Aesculap® traditional handle LX157R	2.78 Nm (100%) (Deviation: 1.91Nm-6.57Nm)
SQ.line® handle LX157NR	2.80 Nm (101%) (Deviation: 1.0Nm-5.38Nm)
	Ø Torsion force
Aesculap® traditional handle LX185R	2.72 Nm (100%) (Deviation: 0.79Nm-5.47Nm)
SQ.line® handle LX184NR	3.37 Nm (124%) (Deviation: 1.12Nm-6.78Nm)

AESCULAP® – a B. Braun brand

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