

Leadership in the Management of Operating Rooms & Sterilization

PART 1



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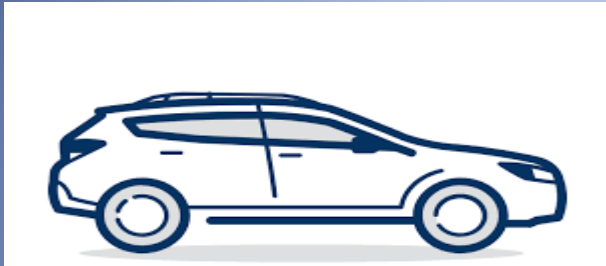


Types and classification of Surgical Instruments



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Types and classification of surgical instruments



**BASIC
principles**

Objectives learning

- 1- History of surgical Instruments**
- 2- Definition of the Instruments**
- 3- Manufacture of Surgical Instruments**
- 4- Grade of Surgical Instruments**
- 5- Structure of the Instrument and its function**
- 6- Types and Classification of surgical instruments**

History of surgical instruments

- The history of surgical instruments began 10.000bc by using the stone knife to perform surgery
- Then, the modern surgical instrumentation began with the introduction of stainless steel
- Surgical instruments represent a large portion of healthcare facilities budget
- Additionally they are the tools that surgeons rely on to help ensure a positive outcome of a surgical procedure
- Each instrument is designed for a specific purpose and should never be used for any other purpose

History of surgical instruments

- **Surgical procedures cannot be effectively performed without properly cleaned, packaged, and sterile surgical instruments.**
- **The manufacturer of surgical instruments must provide processing instruction with each instrument manufactured.**
- **Reprocessing of surgical instruments is the direct responsibility of CSSD Technician**

Definition of Surgical instruments



Are tools or devices that perform such functions as:

- ✓ Clamping
- ✓ Grasping & Holding
- ✓ Cutting & Dissecting
- ✓ Retracting
- ✓ Dilating & Probing
- ✓ Suctioning
- ✓ Suturing & Stapling

Manufacture of Surgical instruments

Most of surgical instruments are made from

Stainless Steel.

But there are other metals involved in the manufacture of surgical instruments such as

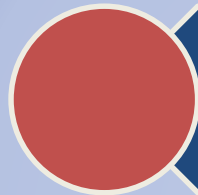
Titanium

chromium

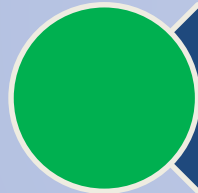
vanadium

molybdenum

Grade of surgical instruments



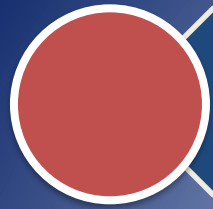
SURGICAL GRADE



FLOOR GRADE



DISPOSABLE



SURGICAL GRADE

Is characterized by:

- ❖ Highest quality
- ❖ The steel from USA and German
- ❖ Their instruments are reusable



FLOOR GRADE

Is characterized by:

- ❖ A lower grade of stainless steel
- ❖ Low quality and advise not use in OR set
- ❖ Also their instruments are Reusable



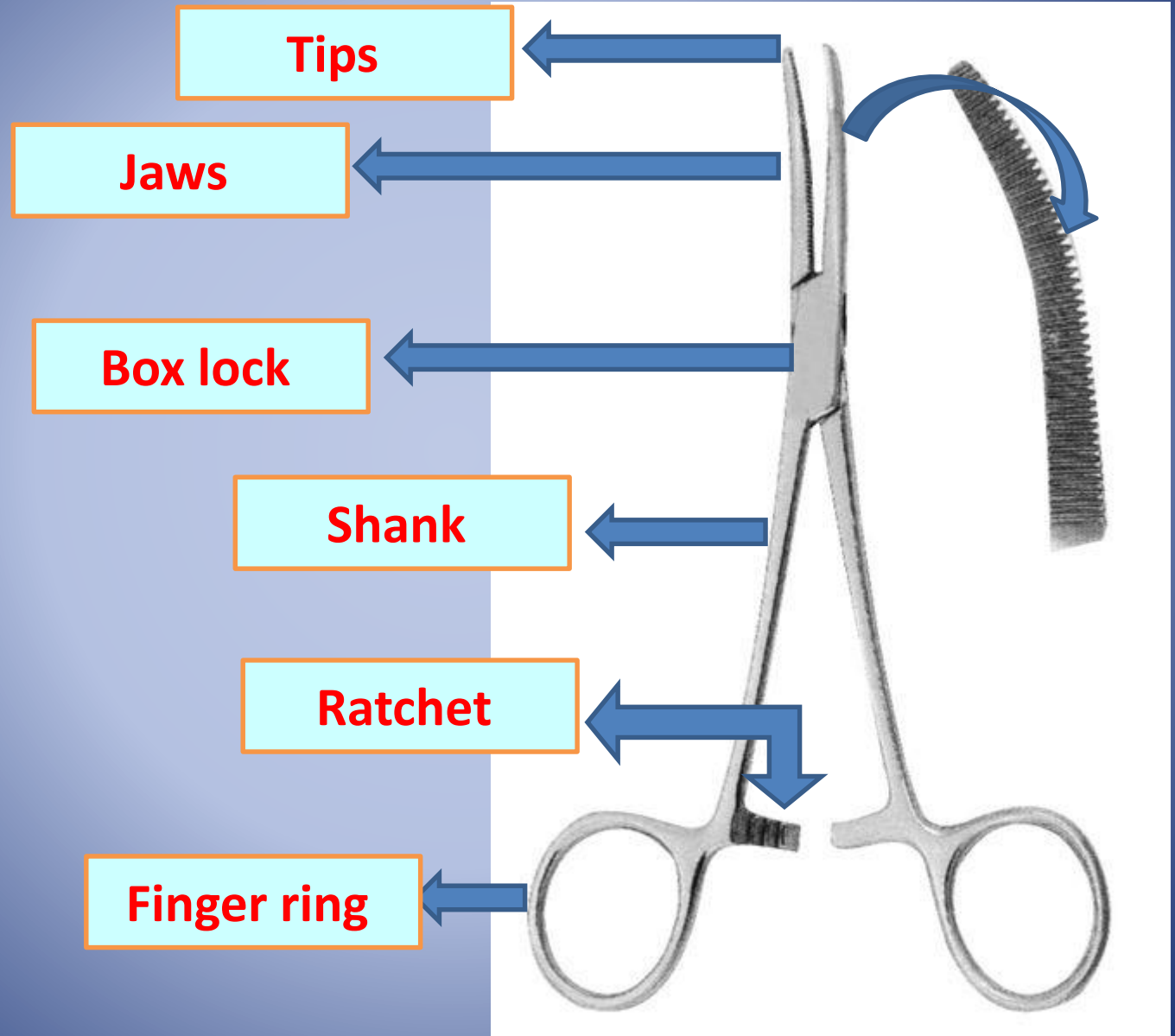


DISPOSABLE

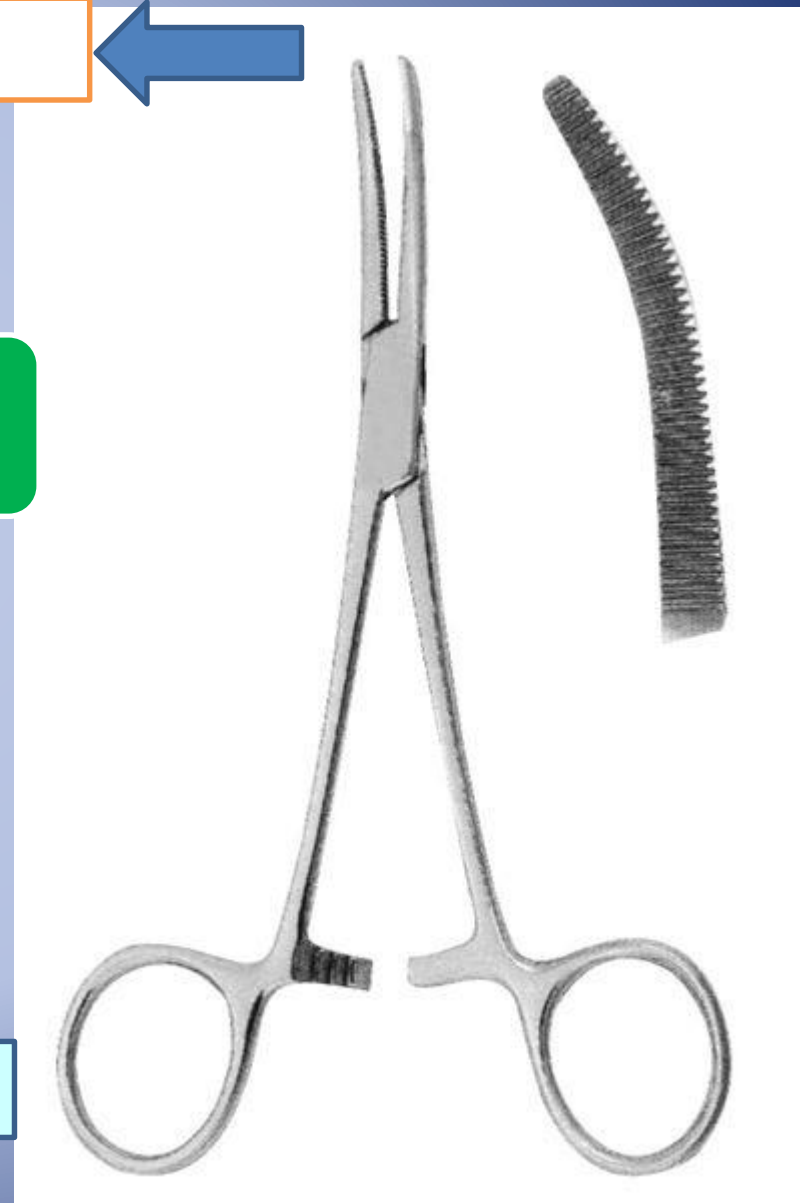
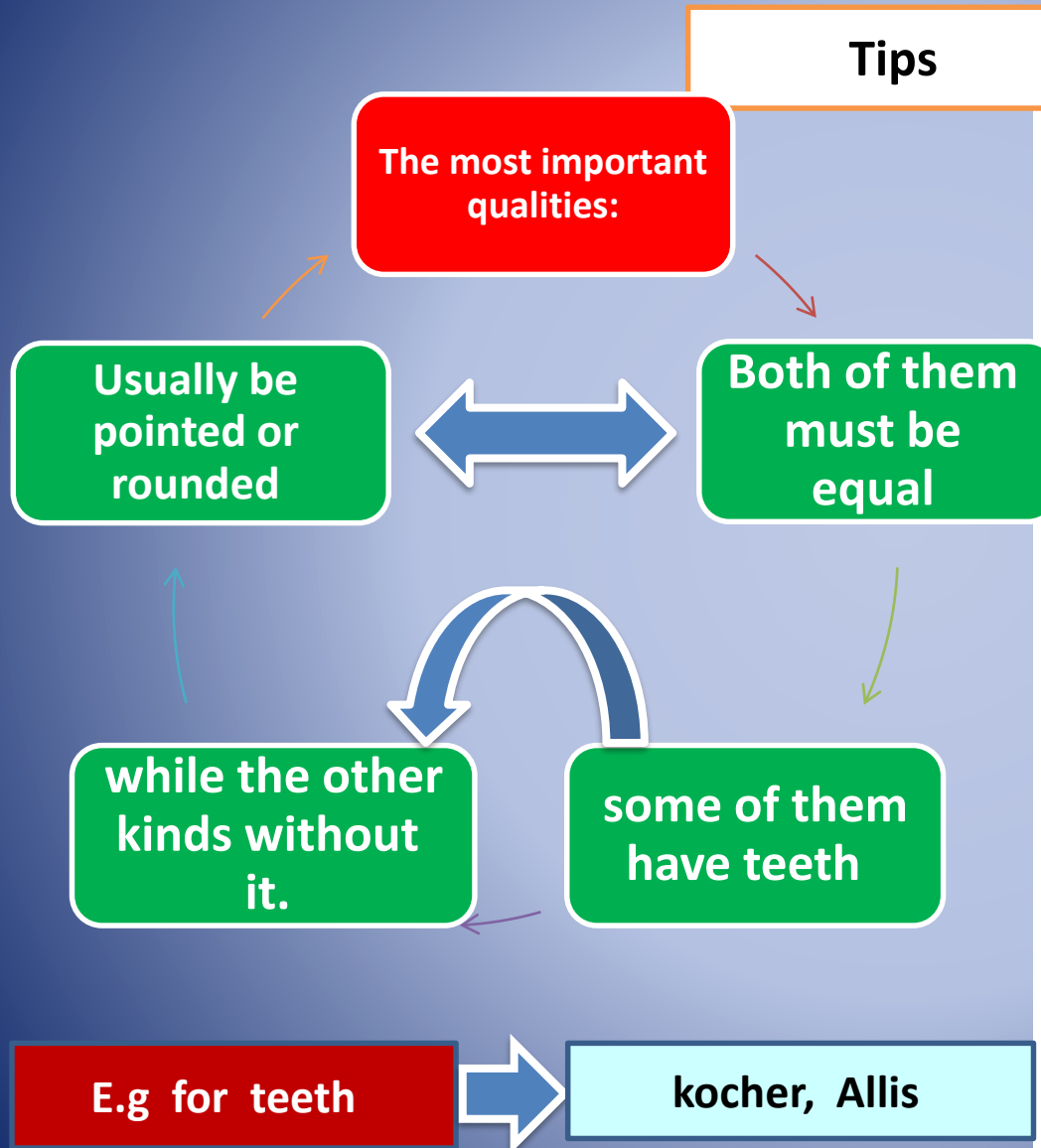
Is characterized by:

- ❖ Single use
- ❖ should never reprocessing

Structure of instrument



The functions of instrument structures



The second part of instruments is (jaws)

This part which contact with the patient directly.

What should you inspect in this part?

blood , tissue

This can be straight or curved

Smooth

Serrated

cross-hatched ??

for grasping tissue or suture



The third part of instruments is (box lock)

Connect with the jaws of the instrument

known by another name which is

(hinge joints)

Why this part is
more difficult to
clean??

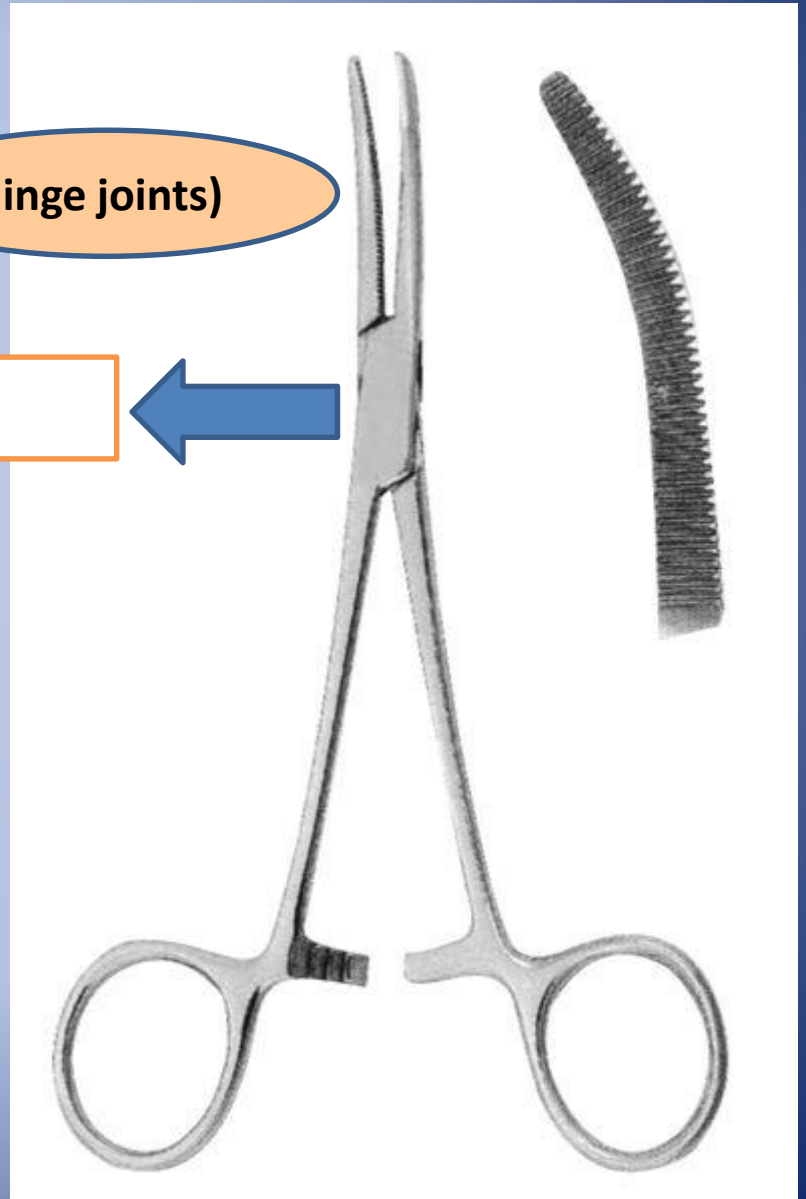
Box lock

It's the weakest part of the structure

which permits blood and body fluid to enter

so, what should we do to clean this part ??

inspect both sides for cracked or blood

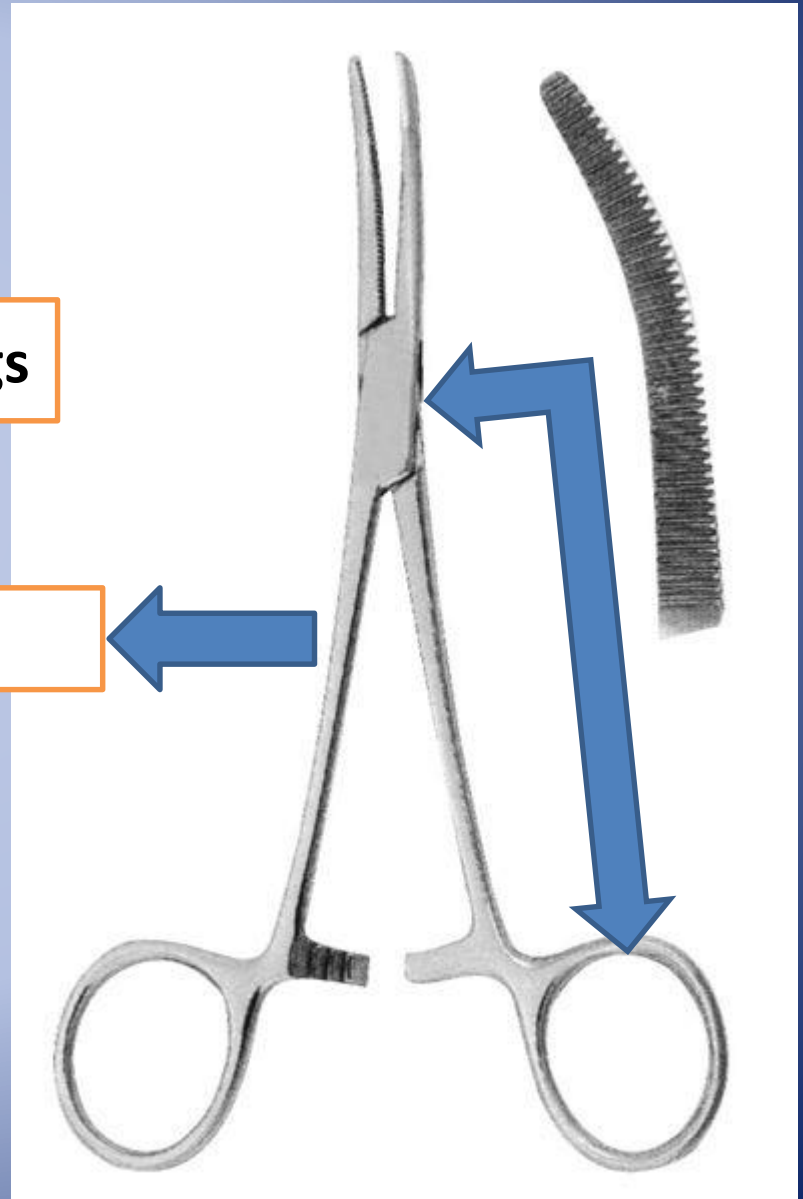


The fourth part of instruments is (shank)

Which provide the closing force.

connect the box lock to the finger rings

Shank



The fifth part of instruments is called (Ratchet)

One of the most important specifications

Allow the instrument to be locked in place

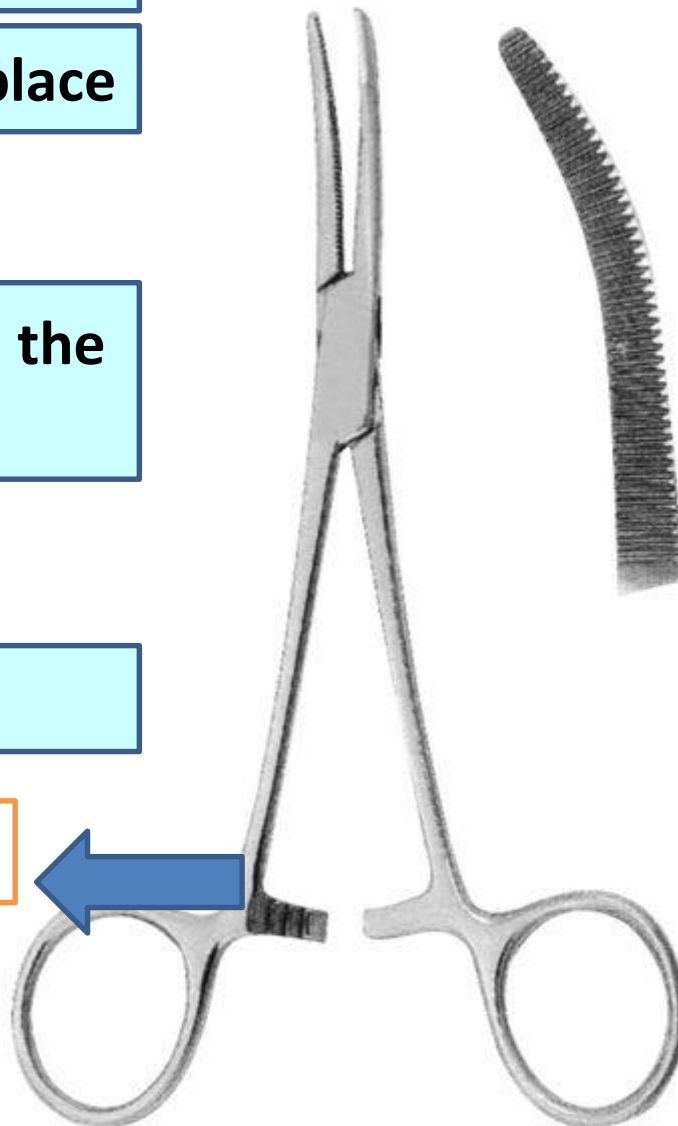


It can be tested by checked closing on the first ratchet



It's difficult to clean

Ratchet



The sixth part of instruments is (Ring Finger)

known by another name
which is

(Ring Handle)

Used to grip instruments securely

It control the action of the jaw
which can open or close.

Ring finger

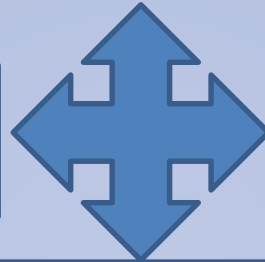


What are the similarities and differences between both artery forceps and scissors as structure?



Both of them have?

Tips



shank

Finger ring

The differences

jaws



blades

box lock



screw

ratchet



without



Scissors

In the scissor, there are some parts should be inspected such as below

1- Inspected tips
Both side should be present and sharp



3- Inspected both sides for cracks

2- Inspected blades for burs

4- open and close rings
Cutting action should smooth

Tissue forceps

In the tissue forceps you should inspect three parts of it as below

Inspect teeth make sure all are present and
No tissue is present

Inspect joint for cracks

Inspect handle serration for blood and tissue



Tip

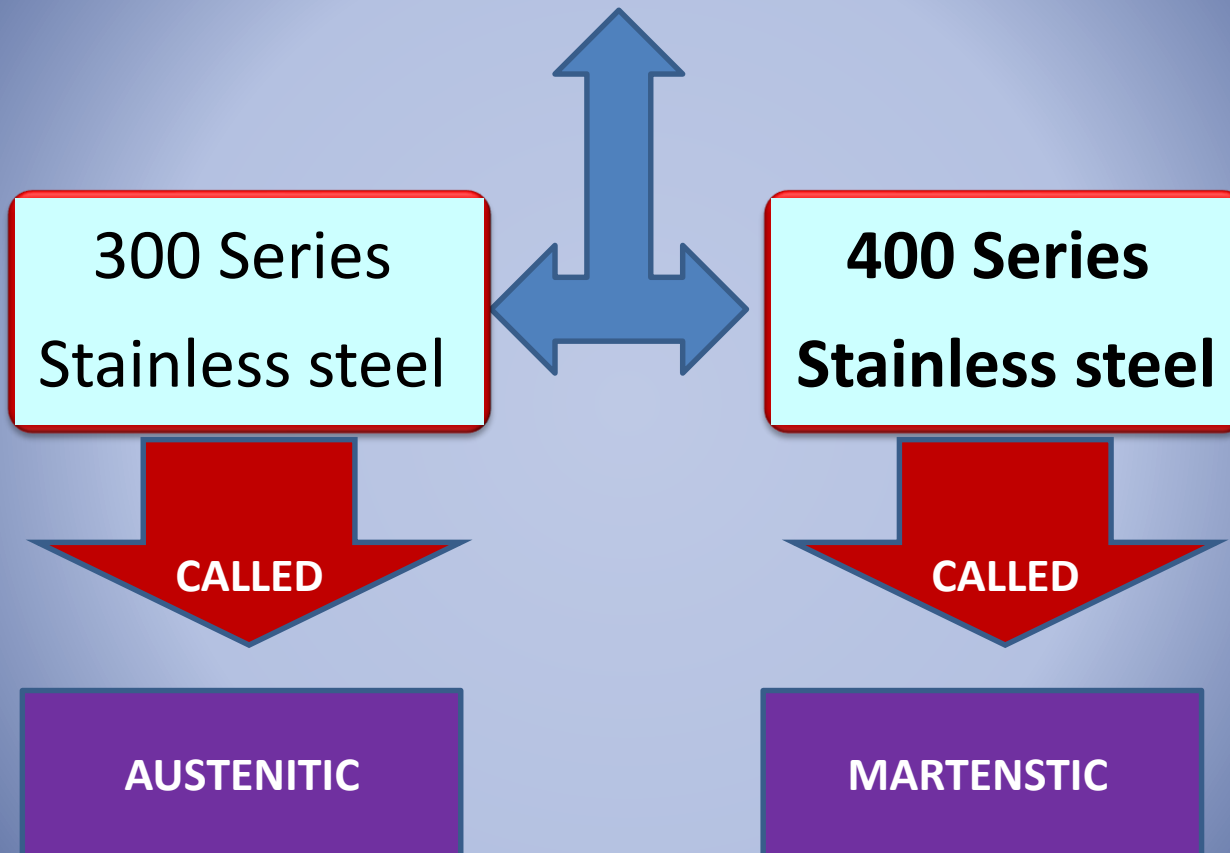
shank

Handle grip

Joint

Jaws

Types of Surgical Instruments





**300 SERIES STAINLESS STEEL
EXAMPLES**



AND THE LIKE



**400 SERIES STAINLESS STEEL
EXAMPLES**



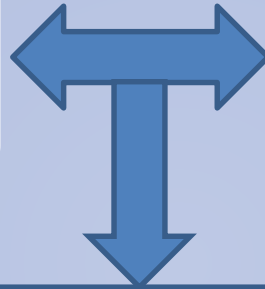
AND THE LIKE

Classification of surgical instruments

THERE ARE FIVE BASIC CATEGORIES OF SURGICAL INSTRUMENTS

1-HAND-HELD

2-MICROSURGICAL



MICROSURGICAL USUALLY CLASSIFIED AS
HAND-HELD INSTRUMENTS

3-POWERED

4-LAPAROSCOPIC

5-ENDOSCOPIC

HAND-HELD INSTRUMENTS



**THERE ARE SEVEN BASIC CATEGORIES OF HAND-HELD INSTRUMENTS
And there are special considerations for specific types of hand-held instruments**

HEMOSTATS

Sharps/Dissectors / Cutting

FORCEPS

NEEDLE HOLDER

RETRACTORS

**LAPAROSCOPIC
INSTRUMENTS**

MISCELLANEOUS INSTRUMENTS

Inspections of hand-held instruments

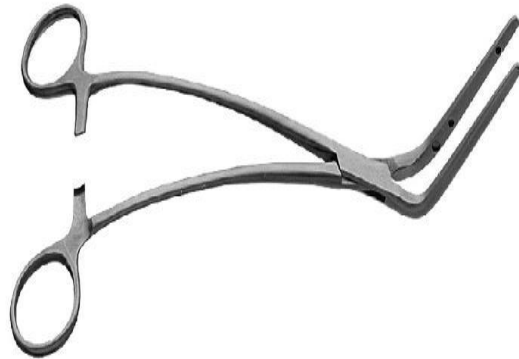
When should be inspected instruments?

- Each and every time an instruments is handheld
- when receive a new instruments in the department
- Whenever they enter the decontamination area
- when they are being assembled and packaged for sterilization
- before use, they should be inspected by the OR staff.

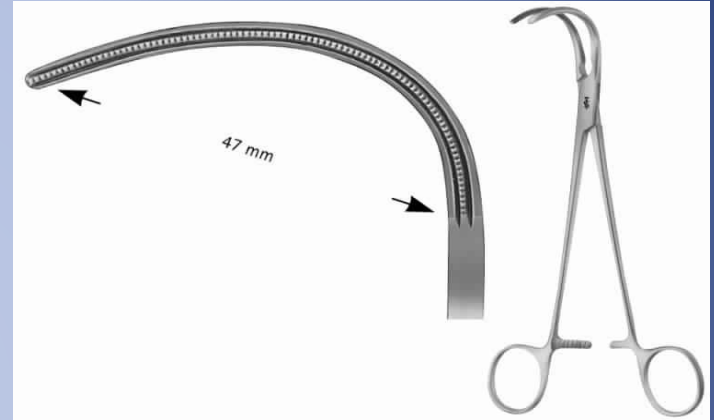
Examples of types of hemostats



Kelly



Fogarty



vascular , glover



Clamp Tubing



Mosquito



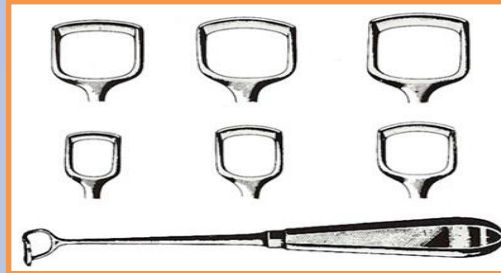
Mixer

Examples of types of sharp / cutting

PERIOSTEAL ELEVATOR



Curette which knows dissectors



CHISEL / BONE



BONE CUTTER



OSTEOTOMES



SCISSORS



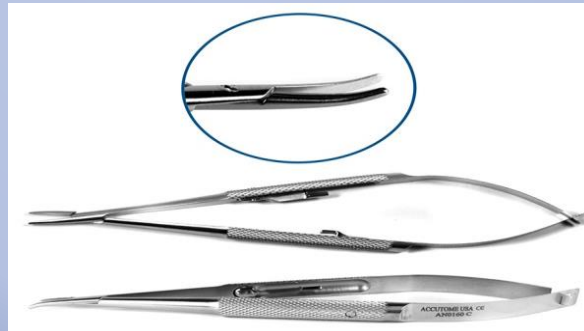
Examples of types of Needle Holder



Webster needle holder



Crile Wood needle holder



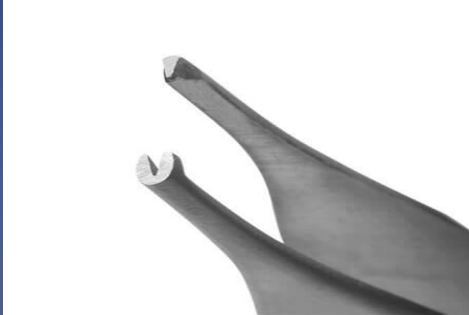
Barraquer Needle Holder



**Microsurgical
Castroviejo**

Examples of types of forceps

Forceps / Adson



Brown Adson forceps



Forceps / Babcock



Forceps / Bayonet



Magill endotracheal forceps

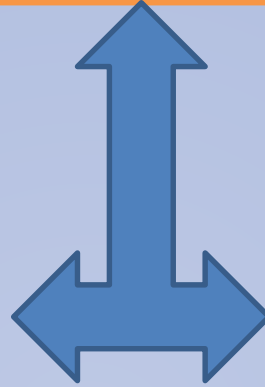


Forceps/ DeBakey



Retractors Classified into two types

Hand held



Self retaining

Examples of types of retractor which include handheld

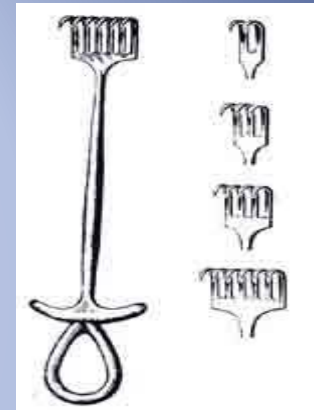
Bone Hook



Deaver



Volkman



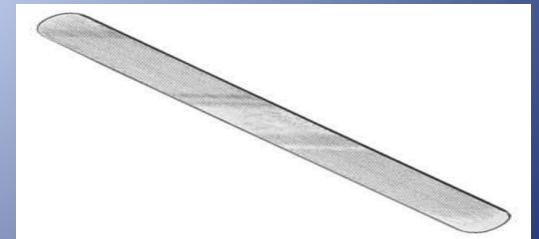
Richardson



Harrington



Malleable (Ribbon)

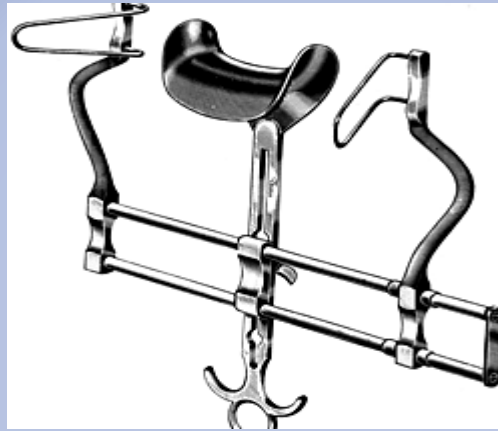


Examples of types of retractor which include self retaining

Gelpi Retractor



Balfour Retractor



bookwalter retractor



Cerebellar Retractor



Weitlaner Retractor



Examples of types of laparoscopic instruments

Grasping forceps



Dissecting forceps



Spatula forceps



Babcock forceps



MISCELLANEOUS INSTRUMENTS

Knife handle



Towel clamp



Sponge stick



REFERENCES

**THANKS FOR
LISTENING**

**INSTRUMENTATION FOR THE OPERATING ROOM
NINTH RDITION ... SHIRLEY .M.TIGHE**

**THE BASICS OF STERILE PROCESSING
FOURTH EDITION (SPD)**

**CENTRAL SERVICE TECHNICAL MANUAL
SEVEN EDITION (IAHCSMM)**

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